LOGICAL PRESUPPOSITION:

A RE-APPRAISAL OF THE CONCEPT AND REVISION OF THE THEORY.

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ABSTRACT

This dissertation is a defence of a logical approach to presupposition. In it

(1) I enumerate, by way of apologia, some fundamental assumptions underlying both antagonistic and protagonistic treatments of such an approach, and argue that they are conceptually unnecessary, methodologically untoward, and/or logically contradictory. Most saliently,

(a) I demonstrate the conceptual and logical contradiction in the view that presuppositional logic might be compatible with (or even imply) an ambiguity of natural language negation,

(b) I provide a critique of the now traditional disassociation of the problems of presupposition-definition and presupposition-projection,

(c) I provide a critique of the view that presuppositional logic might be compatible with (or imply) logical trivalence.

(2) In the light of a discussion of the conceptual distinction, I propose logical criteria for the distinction between a three-valued logic and a two-valued logic with truth-value gaps.

(3) I demonstrate that, by these criteria, the standard (Strawsonian) Definition of Presupposition (SLDP) induces a trivalent logic.

(4) I present a distinct (but comparable) revised logical definition of presupposition (RLDP), showing that it induces a system that conforms to the proposed criteria for a two-valued logic with truth-value gaps.

(5) By showing that the several problems associated with the SLDP do not arise (are 'solved') in the framework of the RLDP, I show (a) that the problems encountered by the SLDP stem more or less directly from its trivalence and (b) that the facts of presupposition-projection are (and should be) immanent in the concept (and hence the definition) of presupposition itself, rather than represented as properties of logical functors. I also show that the revised definition reveals an unsuspected connection between compound counter-examples and simple counter-examples to the SLDP.

CONTENTS

ACKNOWLEDGEMENTS

In 1979 I wrote a paper ('Presupposition, reference, theme, and falsity') which contained the germ of some of the ideas presented in this dissertation. Ruth Kempson, John Lyons, and Janet Dean Fodor were kind enough to plough through that paper and let me have their comments. For this they have my retrospective sympathy and long overdue thanks. I owe an enormous debt to Jane Heal. She read through the whole dissertation and it is better for her insightful comments. She bears no responsibility, though, for failings of thought or presentation that remain. The dissertation was composed between the Spring of 1986 and that of 1987. During this year, Phil Carr and Hermann Moisl have endured with patience a very uncomposed and monomaniac colleague. I tried out ways of presenting some of the material on them, Phil Carr has read certain sections of it, and Hermann Moisl ensured the good behaviour of the word-processor. All of which was a great help and I thank them. But the main brunt of the year has been borne by Tessa. It seems hardly enough to acknowledge that, thank her for her support, and dedicate the matter to her, which I now do:

For Tessa,
with love
:

"...a raid on the inarticulate..."
East Coker: V

INTRODUCTION

"Presuppositions, that set the limits to debate"

– Noam Chomsky 1979.

The subject of this dissertation is the logic of presupposition. In saying this, I mean to place quite a severe restriction on its scope and empirical import, as I now explain.

The discussion that follows arose out of my need to resolve a conceptual problem that has been with me for more than ten years. In 1950 Strawson published his paper 'On Referring', the first thoroughgoing attempt to rebut Russell 1905 and resurrect and add some detail to Frege's idea of presuppositionally induced truth-value gaps. In the hands of linguistic semantics, this is the idea that the truth-conditional semantics of natural language should include a logical relation of presupposition distinct from the relation of (strong) entailment. Within linguistics, this idea was taken up with enthusiasm and applied to an increasingly wide range of natural language data, some of it quite far removed from the phenomenon that the concept of presupposition was originally designed to characterise, namely reference and failure of reference. For example (1) contains the referring expression <u>The king of France</u>, one which at present fails to refer. On Strawson's account the logical implication from (1) to (2) is one of presupposition rather than (strong) entailment.

(1) The king of France is bald

(2) There is a king of France.

In the 1970's, however, a stock-taking took place. The very idea of presupposition as a theoretical concept, let alone as a truth-conditional (logical) concept, came in for severe and outspoken criticism (Wilson 1975, Kempson 1975, Boer and Lycan 1976, Atlas 1977, Karttunen in several publications, Gazdar 1979 - to mention only the most well-known critics in the linguistic rather than philosophical literature). Taken generally, the criticisms constituted a strong, perhaps even compelling case against the logical modelling of presuppositional phenomena as this was conceived. A new consensus seemed to have emerged in which no rational, right-thinking semanticist would wish to to entertain the idea of a logically based treatment of presupposition.

On the one hand, then, the case against logical presupposition seemed to me in general terms strong and, when harnessed to the call for a proper application of a semantics-pragmatics distinction (as it generally was; see Wilson and Sperber 1979:299), compelling. On the other hand, I found myself still, and against my apparently better judgement, regarding the idea of presuppositionally-induced truth-value gaps, at least in the context of reference-failure, as not in principle lacking in strong intuitive appeal or conceptual coherence and potential. I was left in the position of sensing that the critics both had and had not hit the mark. I do not claim never to have held contradictory beliefs, but the contradictions I seemed to be committed to were too evident to be ignored. Some resolution was clearly called for. Something, perhaps several things - connected or not, must have escaped the debate.

The discussion that follows attempts, among other things, to explicate the sense in which the criticism hits the mark and the

sense in which it does not, to pin-point what I see as having escaped the debate, to elaborate those principles in terms of which the appeal, coherence and potential of a logically based approach to presupposition can be maintained and even enhanced notwithstanding the criticism of that general idea. The discussion thus owes an intellectual debt to those critics. I suspect that, without them, I would have remained more or less content with the concept of logical presupposition embodied in Strawson's definition as being the very best we could do by way of a logical definition.

A major thesis of the dissertation is that the literature on presuppositional logic (pro and counter) is remarkably cohesive in its assumptions about the character of such a logic. I shall show that these assumptions are at best not necessary, that they are conceptually or methodologically untoward, and in some cases not coherent or self-consistent. I shall not enumerate them in this introduction; they stem more or less directly from a single assumption which, in Chapter I, I call Standard Assumption 1: that, if presupposition is to be given a logical definition, there is, and could only be, one candidate for that definition, that adopted by Strawson (see 1952: 175). This is the definition which in this dissertation is called the Standard Logical Definition of Presupposition (SLDP).

A prima facie case against such limitations on the presuppositional debate can be made in its own terms. But in the final analysis that negative case must follow from a more positive case put in terms of a demonstration of the possibility of a genuine logical alternative to that definition of presupposition. This is the task to which this dissertation addresses itself, the development of a Revised Logical Definition of Presupposition. The definition itself is extremely simple; what takes more effort is

the spelling out of the general theory that seems to follow from it.

As mentioned, I do not go into any detail in this introduction. But there is one feature of the treatment that the logic of presupposition has received that is so general and crucial to the discussion that follows that I must mention it here. This is the lack of serious attention paid to the intuitive distinction between a three-valued logic and a two-valued logic with truth-value gaps. It is, I believe, generally assumed that, in so far as this distinction has a properly logical status, the Standard theory of presupposition is a theory of TRUTH-VALUE GAPS. Notice that the previous paragraphs of this introduction do not question this assumption. But it is an assumption that is questioned in this dissertation. The discussion develops a simple, general, logical criterion (from which several specific logical criteria follow) for deciding whether a logic that gives rise to a third logical status is to be construed as a three-valued logic or a two-valued logic with truth-value gaps strictly construed as such. The Standard and the Revised theories are distinguished in the most general terms by the fact that, by these criteria, the Standard definition is shown to induce a logic that is in fact three-valued, whereas the Revised definition induces, and is designed to induce, a logic conforming to the criteria for a two-valued logic with genuine logical gaps. I argue that a coherent logic of PRESUPPOSITION as such must be construable as a gapped logic, not a trivalent logic. In the light of this, and in the light of a demonstration that the Revised definition does not encounter (or 'solves') the problems that face the Standard definition, I draw the general conclusion that the problems of presuppositional logic as instantiated in the Standard theory stem more or less directly from the fact that that particular theory is TRIVALENT and, as such, does not reconstruct the generic TYPE of logic that is required for the logical modelling of the

concept of presupposition.

This is the kind of general conceptual consideration of principle that I am concerned with here. Since this is so, I am extremely conservative in what I cite by way of presuppositional phenomena. In fact, I stick to what seems to me the clearest case of logical presupposition - the presupposition associated with referring expressions (an existential presupposition) - the original phenomenon in contention between Russell and Strawson, as (1)-(2) above. I am of course aware that an argument for a specifically presuppositional analysis as against a Russellian analysis is that the former is more readily extended to cover cases not involving definite descriptions/referring expressions. But to discuss each particular proposed further application would take us too far from the concerns of the dissertation. Several of the proposed applications do not strike me as justified even on preformal observational grounds anyway, so that their discussion could have no bearing on what is more generally at issue here. In this connection, a major contention of the critics of presupposition on any terms (in particular Wilson 1975 and Kempson 1975) seems to me amply justified, that the application of the concept of presupposition had got out of hand in being indiscriminately over-extended to cover phenomena that were observationally distinct. So, for the purposes of this discussion, I wish to leave completely open how much other natural language data might be amenable to treatment in terms of the Revised theory of presupposition developed here. I should say, though, that I am not unsympathetic to the treatment adopted by Wilson and Sperber 1979 in terms of ordered entailments, especially for the kind of data they wish to treat of. In a footnote (299) they briefly entertain the possibility that a theory of ordered entailments might complement a suitably restricted theory

of presupposition. In fact it seems to me (though I do not address the issue here) that the Revised theory of presupposition developed here is cognate with a theory of ordered entailments.

Another limitation implied by my taking the LOGIC of presupposition as my subject is that I have little or nothing to say on the subject of pragmatic theories of presupposition (eg Stalnaker 1974) or pragmatic presupposition as distinct from semantic presupposition (see eg Keenan 1971) or use/appropriacy formulations of presupposition as such (eg Fillmore 1969, 1971, Kiparsky & Kiparsky 1971).

Inspection of the Contents will, I believe, give a general idea of the structure of the argument. It is divided into three parts. The FIRST is concerned with the prevailing concept of logical presupposition. It identifies and provides a critique of certain features of that concept. The SECOND part begins by continuing that critique but with special reference to the distinction between trivalent and gapped logic, which is what this part is really concerned with. The conceptual distinction is discussed in some detail and logical criteria for the distinction are developed. That part concludes with a demonstration of the trivalence of standard presuppositional theory. The THIRD part presents the Revised Logical Definition of Presupposition, a definition conforming to the criteria for inclusion in a two-valued logic with logical gaps, and spells out the general theory of presupposition that follows from it. In particular, it treats of how the distribution of presuppositions in compound sentences, the resolution of presuppositional conflict, and intuited differences in logical status of simple sentences, follow automatically from the definition.

PART ONE

THE PREVAILING CONCEPT OF LOGICAL PRESUPPOSITION.

As mentioned in the introduction, it is a contention of this dissertation that the linguistic and philosophical literature on presuppositional logic is highly cohesive in its basic assumptions. This first part is devoted to delineating, and providing a critique of, certain pervasive features of the prevailing concept of presuppositional logic. Since the main thrust of this part is to suggest that these and the assumptions upon which they are based are not necessary for, or (in some cases) even compatible with, a coherent presuppositional logic for natural language, this first part is somewhat negative in character.

CHAPTER I.

THE STANDARD LOGICAL DEFINITION OF PRESUPPOSITION.

I begin, in Section 1, with some expository remarks on the logical equivalences holding between different formulations of the Standard Logical Definition of Presupposition (SLDP). Section 2 contains the main burden of the chapter. It focuses on a prevailing assumption involving the SLDP, which I shall call 'Standard Assumption 1' - 'SA-1' for short. Section 3 discusses Frege's concept of presupposition - in particular, it examines the relation between his remarks on presupposition and the SLDP. Section 4 deals with the notion of 'trivial presupposition' and again is mainly though not wholly expository in nature. Section 5 gives a partial summary of the chapter and presents a couple of its implications.

1. Some logical equivalences.

In referring to the Standard Logical Definition of Presupposition, I refer to the definition in (1).

(1) A presupposes B if and only if

(a) wherever A is true B is true,

(b) where B is false A has some third logical status, other than true or false.

I use the term "third logical status" as being superordinate to, and hence indifferent to, the distinction between a third truth value and a (truthvalueless) truth gap. I shall not address this distinction in detail until Part Two.

It is well-known that (1) has several equivalent formulations, the most obvious being (2):

(2) A presupposes B if and only if
(the truth of) B is both
(a) a (pre)condition of the truth of A,
(b) a (pre)condition of the falsity of A.

(1) and (2) may be proved equivalent as follows. The truth of B is a (pre)condition for the truth of A if and only if B is true wherever A is true. Hence (1a) and (2a) are equivalent. Furthermore, from (2a) and (2b) taken together, it follows that, if B is false, A cannot be true (by (2a)) or false (by (2b)). I will comment further on this directly. (1) and (2) are, therefore, equivalent.

If the truth of B is a (pre-)condition of the truth and of the falsity of some A, it follows that B is implied not only by A itself but by the negation of A, ~A, which under standard negation is true if and only if A is false. It is readily seen, then, that (2) is in turn equivalent to (3):

(3) A presupposes B if and only if both
(a) A implies B
(b) ~A implies B.

(2) and (3) commit us to a logic that admits of a logical status other than the classical truth values 'True' and 'False', as much as does (1). Otherwise, with just those classical values, the falsity of B would permit the inference BOTH that A is false (by <u>modus tollens</u> from (2a)/(3a)) AND that ~A is false (by <u>modus tollens</u> from (2b)/(3b)). But this is a contradiction. The contradiction could be escaped only by allowing that B could never be false.

This would be equivalent to identifying the set of presuppositions of any A with the set of tautologies. It is in fact the case that tautologies (necessary truths) do satisfy these equivalent definitions of presupposition with respect to every single proposition (i.e. for every proposition taken as the value of the variable A). They are referred to as 'trivial presuppositions'. However, while tautologies satisfy these equivalent definitions of presupposition, the primary intention behind the formulation of the definition is that contingent propositions be included among the presuppositions of A. In other words, the definitions are intended to afford a non-trivial logical relation of presupposition. The logical concept of trivial presupposition is dealt with in a preliminary way in Section 5 below and, in passing, throughout the dissertation.

It is important to note, then, that the sense of 'imply' invoked in (3) cannot be one that validates the inference of <u>modus tollens</u>. Instead, it must be that sense of 'imply' and 'implication' which is also known as NECESSITATION by Van Fraassen eg 1968:137-8, 1970:14, as LOGICAL CONSEQUENCE by Keenan & Hull 1973:450, as WEAK ENTAILMENT by Wilson 1975:4 and more ambiguously as (SEMANTIC) ENTAILMENT by many, including van Fraassen 1968, Horn 1969, Morgan 1969, Keenan 1972. Since the unmodified term 'entailment' is vague in the absence of supporting discussion, I shall follow the general practice of distinguishing between STRONG ENTAILMENT (which supports <u>modus tollens</u>) and WEAK ENTAILMENT (which does not), using the unmodified term 'entailment' only when it can be clearly understood in context as a superordinate term for both strong and weak entailment.

On the (weak) sense of 'imply' with which we are concerned, then, A implies B if and only if B is true wherever A is true, but

nothing is said about the consequence of B being false. This sense validates <u>modus ponens</u> but does not validate <u>modus tollens</u>, the inference in terms of which the above contradiction is derived.

Modus Ponens:	Modus Tollens:
1. P implies Q	1. P implies Q
2. P	2. ~Q
therefore 3. Q	therefore 3. ~P

(3) is therefore equivalent to each of the definitions in (4):

(4) (i) A presupposes B if and only if
(a) A necessitates B
and (b) ~A necessitates B.

(ii) A presupposes B if and only if
B is a logical consequence
(a) of A
and (b) of ~A.

(iii) A presupposes B if and only if
(a) A weakly entails B
and (b) ~A weakly entails B.

These equivalences have been noted many times. The two suggestions known to me to the effect that these definitions might not in fact be equivalent are cursory and tentative. The discussion note Katz 1973 begins by assuming their non-equivalence (256); but the note ends with a conclusion that entails their equivalence. The other suggestion is made in passing in a footnote in Hausser 1976:269. Having acknowledged their equivalence (262) Hausser presents his counter-suggestion as turning upon his analysis of the empirical status of a particular example (not relevant here).

This has elicited the following comment by Gazdar 1979b:94.

> "Given this proven equivalence, it is somewhat surprising to find a footnote later in the paper in which Hausser remarks "it seems that (18) and (19) [(1) and (2) above - NBR] are not in fact equivalent" as if the question of their equivalence was somehow a matter to be resolved empirically."

In what follows I shall take it as proven that all the definitional formulations here considered are equivalent.

2 The Standard Definition and a standard assumption.

The pre-eminent assumption that underlies the overwhelming majority of linguistic and even philosophical treatments and criticisms of presuppositional logic,is:

> STANDARD ASSUMPTION - 1.
>
> That, if presupposition is to be given a logical definition, then its definition is that given in one of the logically equivalent forms presented as (1) through (4) above (or any further logically equivalent form) - in other words, the Standard Logical Definition.

Standard Assumption-1 (SA-1) is pre-eminent because so many other assumptions and features of the prevailing concept of presupposition can, more or less directly, be traced back to it.

It is assumed that in order to defend the generic concept of a logical approach to the phenomenon of presupposition it is necessary to defend that particular definition. Conversely, it is assumed that in order to demonstrate the inadequacy and/or general undesirability of the very idea of a logical approach, it is sufficient to demonstrate the inadequacy and general undesirability

of that particular definition.

It is a central argument of the present work that these interrelated assumptions are not warranted. To show that the SLDP is inadequate and undesirable is merely to show that, if presupposition is to receive a logical definition, then the SLDP cannot be that definition. There are no general consequences of such a demonstration for the general concept of a logical modelling of presupposition. There is, in other words, no warrant for extrapolating from particular features of the presuppositional logic induced by that particular definition to the generic concept of presuppositional logic.

In drawing attention to this obvious point, I do not seek to criticise the critics of logical presupposition as instantiated in that particular definition. In the absence of alternatives, criticism must perforce focus on what is available for criticism and, in the main, I concede the justice of these criticisms of the SLDP. But, if it can be shown that SA-1 is unwarranted, the *de facto* lack of serious comparable logical alternatives to the SLDP has the unfortunate consequence that criticisms of presuppositional logic that take the form of criticism of the SLDP are of less theoretical and general interest than might otherwise appear. What is perhaps surprising is the tenacity with which proponents of an approach to presupposition based on a logical definition have clung to the SLDP despite its well-documented problems. This general reluctance to consider any genuinely distinct logical definition of is illustrated as recently as 1979, when we find Katz (102) defending (5) below, which, leaving aside the matter of 'proposition' and 'statement', is again logically equivalent to (1) above.

(5) The presupposition of an assertive proposition P is the condition under which P makes a statement, that is, under which P is a truth or falsehood.

See also Mioduszewska 1985. It is suggested below that Bergmann's 1981 definition is also effectively equivalent to the SLDP.

In what follows I shall take it as a matter of accepted fact that it is the SLDP, and overwhelmingly only the SLDP, that has been at the focus of discussion of presuppositional logic. It is impractical to give anything like an exhaustive listing to demonstrate this. That this is indeed the case is reflected in the fact that it is only the SLDP that is cited in textbook discussions of the logical approach to presupposition; see Strawson 1952, Leech 1974, Palmer 1976, Kempson 1977, Fodor 1977, Lyons 1977, Allwood Andersson & Dahl 1977, Smith & Wilson 1979:285, McCawley 1981, Levinson 1983. Two attributions of particular relevance should be made, however. The 'S' of 'SLDP' can, of course, be taken to stand for 'Strawsonian'. It is the definition given in the text cited above, 1952:175, in the form given as (2) above, and assumed informally in Strawson 1950, the paper which, in response to Russell's 1905 critique of Frege's remarks on presupposition, gave rise to the controversy surrounding presuppositional logic. Furthermore, it is the SLDP in all its equivalent formulations that is cited in the important work by van Fraassen on presuppositional logic (1968:137-8, 1969:68, 1970:13-4).

The above statement that it is only the SLDP that is considered in discussions of presuppositional logic has to be qualified by 'overwhelmingly' since I am aware of two alternative definitions, within the linguistically orientated literature at least. The first is that offered in a footnote in Karttunen 1971:67 (here adapted in non-relevant respects):

(6) A presupposes B if and only if Possible-A implies B and Possible-~A implies B.

Since the SLDP is standardly assumed to be incapable of predicting the intuitive presuppositional implications of sentences of the form Possible-A (see Thomason 1973, Karttunen 1973:171, Gazdar 1979:92), this might indeed be taken to represent a distinct logical definition of presupposition. Indeed, I had thought that this supposed fact actually provided the rationale for (6). However, Karttunen did not develop the definition, and as Gazdar (ibid) notes, actually abandoned it on those very grounds (ibid).*

The other non-equivalent definition is proposed by Hausser 1973:199 - again adapted here:

(7) A presupposes B if and only if

(a) A implies B,

(b) ~A implies B,

and (c) A is an elementary formula.

where an elementary formula is one that is not compound in Karttunen's 1973 sense, i.e. not overtly involving propositional binary connectives. Definition (7) has the consequence that compound propositions by definition do not have presuppositions. Since the SLDP does not have this rather far-reaching and empirically counterfactual consequence, (7) does indeed represent a distinct concept of presupposition.

Without (c), however, (7) is in fact identical to the SLDP. And, paradoxically, the rationale of Hausser's modified definition

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* In fact, (6) deserves more consideration than Karttunen concedes it (and than it will receive here). It is strongly reminiscent of Rescher's 1960:523 definition of 'Presupposition-2' (presuppose-2 (p : q) =df $\Diamond p \succ q$). In chapter VIII below, it is shown, contra Karttunen 1973, that the SLDP does actually entail that possible (~)A presupposes what (~)A presupposes.

merely reinforces the assumption which is at issue in this chapter, namely that there is no logical alternative to the Standard Logical Definition of Presupposition. That very assumption is again clearly evident in Gazdar's rejection of Hausser's definition:

> "This definition has the effect of ruling out all the known counterexamples by *fiat*, since every counterexample to the semantic hypothesis involves non-elementary formulae. Anyone interested in why such formulae behave the way they do will not find Hausser's definition of the slightest use to them." (Gazdar 1979b:93)

Gazdar's criticism is (only) valid because both definition and criticism embody the same assumptions, viz.

(i) To adopt "the semantic hypothesis" of presupposition (to adopt a logical approach to presupposition) is to adopt the SLDP, on the further assumption that

(ii) the SLDP is satisfactory as far as elementary formulae are concerned and that therefore

(iii) the only logical possibility for a semantic theory of presupposition (=theory of presupposition as a logical relation) is to solve or otherwise mitigate the projection problems attendant on that definition i.e. to develop an independent theory of the distribution of presuppositions in compound sentences.

As indicated, these three assumptions are intimately connected, though for purposes of presentation they are dealt with separately in what follows.

The correlation between Hausser's explicit modification of the definition, (7), and the implicit assumptions underlying the great volume of work on the projection problem for presuppositions (particularly that of Karttunen 1973) has not been sufficiently appreciated, I believe. This is discussed in Chapter II, Section 1. But, to anticipate, there is a related feature of Karttunen's 1973 discussion which is appropriately discussed here.

A characteristic of the SLDP which will become increasingly important as the discussion proceeds lies in the fact that, under the SLDP, presupposition-failure in A is definitionally IDENTIFIED with A being assigned the third logical status, i.e. the falsity of a presupposition INEVITABLY results in the lack of a classical truth value in the presupposing sentence. Any theory of presupposition from which this follows is equivalent to the Standard Logical Definition of Presupposition. Now a good part of the first section of Karttunen 1973 is devoted to demonstrating the author's agnosticism as regards what a presupposition might actually be, as to whether it is to be given a semantic (=logical) or pragmatic definition and, more particularly, if the former, what its logical definition might be. He suggests that it is not relevant to his purpose to discuss these matters: "Let us simply assume that we understand what is meant by a presupposition" (171). Such remarks are misleading, however. Notwithstanding any suggestion to the contrary, Karttunen in fact has a very precise understanding of what we are to understand by a presupposition, at least in the case of logical presupposition: it is the SLDP itself. Much of his discussion simply cannot be understood except in the light of that definition. By way of illustration of this, consider his discussion of the example

(8) Jack has children and all of Jack's children are bald.

On the assumption that John has no children, the second conjunct suffers from presupposition-failure and is therefore assigned the third logical status by the Standard theory. But intuitively the conjunction as a whole does not inherit the presupposition (as such) of its second conjunct. Karttunen makes the following comment:

"As far as I can see, it does not presuppose that Jack

> has children. If it should turn out that the first conjunct is false, then the whole conjunction surely ought to be false, not indeterminate or truthvalueless." (178).

This comment implicitly assumes an identity that arises only by virtue of the SLDP, namely the identity between the falsity of a presupposition and the third logical status of the sentence that presupposes it. For Karttunen, to say of (8) that it is false rather than neither true nor false when _Jack has children_ is false is equivalent to saying of _Jack has children_ that it is not a presupposition of (8). This is to presuppose the SLDP.

I have singled out Karttunen 1973 for discussion in this context precisely because that paper does not give EXPLICIT expression to the assumption that is the concern of this section; as an illustration of the force of SA-1, it is all the more vivid for being implicit. A further example is cited in Ch II:1 below.

In conclusion, I imagine the fact that the presuppositional literature does exhibit SA-1 (that if presupposition is to be given a logical definition then it must be the SLDP) is uncontroversial. What is controversial is the claim (to be supported in the chapters that follow) that that assumption is not necessary. In arguing, as I shall, that the SLDP is, at least, not a necessary component of a coherent presuppositional logic, I shall be arguing _inter alia_ that the identification of presupposition-failure in S and S's having the third logical status is not only not necessary to a presuppositional logic, but actually militates against the coherence of a P-logic that includes it, quite apart from the empirical inadequacies that the equation induces.

Let me anticipate in very broad terms some of the discussion of the following chapters with this observation. The undeniable intuitive force of the SLDP derives from the fact that it addresses

itself very directly to reconstructing what I shall call the SALIENT PRESUPPOSITIONAL INTUITION, the intuition that a presupposition is implied equally by a sentence and its negative counterpart. The SLDP in fact DIRECTLY EXPRESSES that intuition. After all, the standard test of whether a given implication is presuppositional or not is whether it remains constant under negation. Furthermore, this Salient Presuppositional Intuition (SPI) is, as we have seen, interdefinable with what I shall call THE TRUTH GAP INTUITION (TGI), a version of which is also DIRECTLY EXPRESSED in the Standard Definition. It is then incumbent on anyone who wishes to claim that the SLDP is not necessary to a coherent and intuitively adequate presuppositional logic to show that the SPI can be explained simply and insightfully without its being directly expressed in terms of the logical definition itself. As regards the empirically attested Truth Gap Intuition, we shall in due course find reason to doubt that the particular version of the Truth Gap Intuition that is modelled by the SLDP does in fact reconstruct the empirically attested intuition either in principle (in the general character of the intuition) or in practice (in predicting the range of contexts in which the intuition is empirically attested).

3. Frege and the Standard Definition.

In this section I discuss the relation between the concept of presupposition that is embodied in the Standard Logical Definition of Presupposition and Frege's 1952 remarks on presupposition. My argument will be that (i) it is difficult on practical grounds to deduce a logical definition of presupposition from that discussion in and of itself, (ii) that the SLDP in particular can be deduced from it only if we accept (and in fact seek to maintain) some rather dubious and controversial features of Frege's general theory of

sense and reference, and (iii) that paradoxically the admission of logical statuses other than the classical truth values (an admission entailed by the SLDP) throws Frege's general theory into confusion.

That Frege might have problems in accepting the SLDP was suggested to me by Levinson's presentation of the matter (1983: 169-170), and further confirmed by my reading of Dummett 1973: esp Ch. 12). This is not intended as a criticism of Levinson 1983; on the contrary, Levinson's is a clear and accurate introductory picture of how the SLDP comes to seem so necessary a part of presuppositional logic. Levinson quotes the following passages from Frege 1952, which constitute pretty well the whole of Frege's pronouncements on presupposition that are taken into account (see Evans 1982 and Dummett 1973 for further Fregean references however.)

> If anything is asserted there is always an obvious presupposition that the simple or compound names used have a reference. If one therefore asserts 'Kepler died in misery' there is a presupposition that the name 'Kepler' designates something. (Frege 1952: 69).
>
> That the name 'Kepler' designates something is just as much a presupposition of the assertion 'Kepler died in misery as for the contrary assertion. (ibid.)
>
> 'After the separation of Schleswig-Holstein from Denmark Prussia and Austria quarrelled.' ... It is surely sufficinently clear that the sense is not to be taken as having as a part the thought that Schleswig-Holstein was once separated from Denmark, but that is the necessary presupposition in order for the expression 'After the separation of Schleswig-Holstein' to have any reference at all. (op. cit. 71)

Furthermore, anyone ignorant of the historical facts

> will take our sentence ... to be neither true nor false but will deny it to have any reference, on the ground of absence of reference for its subordinate clause. This clause would only apparently determine a time. (ibid.)

As Levinson observes (169), this is an "elliptical discussion that allows considerable freedom of interpretation". Nevertheless, he draws from it a quite specific and explicit theory of Fregean

presupposition:

"(i) Referring phrases and temporal clauses (for example) carry presuppositions to the effect that they do in fact refer

"(ii) A sentence and its negative counterpart share the same set of presuppositions

"(iii) In order for an assertion (as he put it in the Kepler case) or a sentence (as he put it in the Schleswig-Holstein case) to be either true or false, its presupposition must be true or satisfied."

It is explicit and specific enough for us to be satisfied that it is exactly reconstructed by the SLDP, in which (ii) and (iii) imply each other.

The first question I wish to raise is: given that Frege's discussion is in fact sufficient to legitimise ANY explicit general theory of presupposition, are (ii) and (iii) above the uniquely most appropriate summary and generalisation of that discussion? With the exception of the general statement that "if anything is asserted there is always an obvious presupposition", Frege restricts himself to the consideration of particular examples. It appears to me that Frege's discussion in and of itself provides no guarantee of generalisation without modification in the form of a logical definition of presupposition. Levinson accurately represents what is the universal interpretation of Frege here: that these rather particularised remarks constitute, are co-extensive with, a complete theory of presupposition. But there is, in principle, an alternative interpretation, namely, that Frege's remarks merely point up the particular implications, for particular examples, of a more general, yet-to-be-developed theory.

On this latter interpretation, the discussion taken in itself does not imply that, because Frege requires some general theory to have the particular implication that the Kepler sentence be without

a classical truth value when 'Kepler' fails to have reference, Frege envisaged a general theory that it have that implication universally. On this latter interpretation, in other words, it need not follow (as it does under the SLDP) that, because 'Kepler died in misery' lacks a classical truth value if it has a false presupposition, no sentence with a false presupposition can have a classsical truth value.

It is not that discussion in itself that commits Frege to the SLDP (or makes the SLDP the most appropriate reconstruction of what Frege had to say on presupposition) but the fact that Frege's discussion takes place against a backcloth of assumptions deriving from his general theory of Sense (Sinn) and Reference (Bedeutung). And, in so far as there is a single correct understanding of these assumptions (they have been the subject of considerable debate) they are controversial (see eg Searle 1969: esp. Ch. 5, Dummett 1973: esp Ch. 12, Evans 1982: Ch. 1). Furthermore, as I shall argue, they have paradoxical implications for presuppositional logic.

The particular feature of Frege's semantic theory that is at issue here is his systematic generalisation of the sense-reference distinction. Let us accept for the sake of argument Frege's proposal that names have both a reference and a sense. On one interpretation of Frege's intentions, he sought quite literally to generalise this observation to cover expressions of all the major semantic types - in particular, predicate expressions and sentences themselves. Corresponding to the sense of a name, a sentence expresses a thought (its sense), and corresponding to the object which is the reference of a name, a sentence has a truth value as its reference - one of the objects The True or The False. (Notice that under this generalisation truth and falsity are not exactly PROPERTIES of sentences.) The corresponding distinction for

predicates is less clear. Frege clearly intended the reference of a predicate to be a concept but it is not clear what there is left for a predicate to have as its sense (see Dummett's discussion quoted below).

Now, on a literal interpretation, Frege might appear to be committed to the SLDP - on the following grounds. Since the sense and reference of a sentence is a compositional function of the sense and reference of, _inter alia_, the names it contains, it would follow that if we allow that expressions WITHIN sentences (eg names and predicates) may have sense without reference, any sentence containing such an expression will also have sense without reference; and since the reference of a sentence is a truth value, it follows that no sentence containing an empty reference can have (or refer to) a classical truth value.

Thus, given the principle of compositionality and given the generalisation of the sense/reference distinction to include sentences in its application, it follows that failure of existential presupposition in a sentence has the INEVITABLE consequence that the presupposing sentence fails to have a classical truth value. This is tantamount to the SLDP.

The SLDP is thus seen to follow from Frege's discussion of presupposition only provided we accept Frege's systematic generalisation of the sense-reference distinction and on its most literal interpretation. Withdrawn from that framework of assumptions, the conceptual necessity of the SLDP (and the associated identification of presupposition-failure and lack of classical truth value) disappear. As noted, that framework of assumptions is anyway controversial. It is not, for example, accepted by Strawson, the major proponent of the SLDP. As Kearns 1970:49 insightfully remarks "Strawson has taken over Frege's claim:

But he has abandoned the philosophical underpinnings of Frege's views and this leaves him with nothing to rely on except ordinary language, which is less than conclusive on this point".

Furthermore, even accepting the Fregean generalisation of the sense/reference distinction, the admission of a logical status other than the classical truth values is problematic for that theory of sense and reference. The literal assimilation of the semantic types of sentences and predicates to that of names actually breaks down if we admit of such a logical status. This can be shown by posing the following question. If lack of reference in a name is to be correlated with lack of a classical truth value in a sentence, what is a reference to The False by a sentence to be correlated with in a name? The theory provides no answer to this. At the very least, the parallelism is not as neat and simple as Frege's discussion appears to suggest.

The point may be approached from a different angle. Certain aspects of the discussion of Dowty et al (1981:25, 144) rather strongly suggest that the correspondence theory of truth underlying their presentation of Montague semantics (and indeed the intension / extension distinction) have their roots in the Fregean theory of sense and reference. Now it is reasonable to construe lack of reference in a name as a lack of correspondence between that name and any object in reality. And if indeed a reference to The False by a sentence is to be construed as lack of correspondence to reality by the thought expressed by a sentence, this suggests that lack of reference in a name is to be correlated, not with the lack of a classical truth value in a sentence, but with the FALSITY of the sentence. Thus the lack of a classical truth value fails to correlate with any such comparable status in a name. A name either does or does not have a reference (correspond with something in

reality): if reference and the lack of it is to be construed as correspondence with reality and the lack of it, as Frege's generalisation would seem to imply, the correct sentential correlates of reference and the lack of it are classical truth and falsity respectively. Within such a scheme, then, a logical status other than the classical truth values has no role to play.

I believe these remarks converge with the discussion of Dummett 1973: Chap 12 (esp 410-12). Quotation might be useful:

> The Bedeutung of a name is its bearer; the Bedeutung of a sentence is its truth-value. But, if a part of a complex expression lacks a Bedeutung, then the whole lacks a Bedeutung: hence if a name occuring in a sentence lacks a bearer the sentence as a whole lacks a truth value. (410)

Having raised the question of whether we are to understand 'Bedeutung' as semantic value or, more literally, as referent (bearer), he continues

> If...we understand Bedeutung to mean 'referent', then the principle that, if part of an expression lacks a referent the whole lacks a referent, is far from compelling. It derives its force... from the case of complex names. If there was no such man as King Arthur, then there was no such man as King Arthur's father.... It is by no means obvious, however, that the principle extends to complex expressions of other types. We may, for example, choose to say that, if there was no such person as King Arthur, then there is no concept to be the referent of ' - was married to King Arthur': but it is not evident that we are bound to say this, rather than that the predicate has a reference a concept under which nothing falls. We must, indeed, choose the former alternative if we are to follow Frege in holding that, if there was no such person a King Arthur, then a sentence of the form 'a was married to King Arthur' is not even false: but to use this as a premiss in the present context would be to argue in a circle. The only non circular ground for holding that such a predicate has no referent is the desire to make the analogy between proper names and incomplete expressions as good as possible by maintaining the principle that, if a part lacks a referent, the whole does: it has no intrinsic plausibility. (410-1).
>
> To regard sentences as having truth values as their referents, does not entail the assimilation of sentences to complex names. If sentences are expressions of a different logical type from names, then truth values are not objects, and the relation of a sentence to its truth value is, like the relation of a predicate to a concept, only an analogue

> of the relation of a name to its bearer, not the same relation. (411)
>
> If sentences are agreed to have truth values as their referents, but this is regarded, not as a special case, but merely as an analogue, of names having objects as their referents, then... there is no cogent argument from first principles to the conclusion that sentences containing a name which lacks a bearer are devoid of truth value. (412).

I take it that Dummett is demonstrating the interdependence between a certain interpretation of Frege's general theory of sense/reference and the admission of a logical status other than true and false but arguing that the general theory does admit of a (more plausible) interpretation in which there is no necessary commitment to any such logical status. The trend of the argument of this section has been slightly more specific: that if Frege was committed to a presuppositional logic, it is far from being uncontroversial that the particular brand of presuppositional logic suggested by his brief remarks commits us to reconstructing presupposition specifically by means of the SLDP. The preconditions for concluding this are unacceptable. Not only are we obliged to accept the most dubious interpretation of his general theory - the wholesale and most literal generalisation of the sense-reference distinction - but on closer inspection the obligation turns out to be self-defeating since the very admission of a third logical status throws that generalisation into doubt. Dummett, then, is arguing against the Fregean admission of a third logical status in principle, on any terms. I have argued against the Fregean admission of a third logical status on the specific terms provided by the SLDP, in which presupposition-failure in S is INVARIABLY correlated with lack of truth vale in S. My conclusion, then, might be expressed by Dummett's last quoted sentence, provided 'necessarily' is inserted before 'devoid of truth value'.

4. Comments on trivial presupposition.

As noted in passing in Section 1 above, under the SLDP the set of tautologies (the set of necessary truths, including logical truths and analytic truths) are defined as presuppositions of every sentence. This is so even if we retain a standard classical logic, admitting no logical status other than the classical truth values. Indeed, within such a logic, sentences have all and ONLY the tautologies as their presuppositions. This is so because, in both presuppositional and standard classical logics, a tautology is true in every state of affairs, and will therefore be true in states of affairs described by A and in states of affairs described not ~A. Hence tautologies (and, in a standard classical logic, only tautologies) satisfy the standard definition of presupposition. It is standard to call such presuppositions 'trivial presuppositions'.

I have the impression that the existence of trivial presuppositions is regarded with some suspicion or unease, and hence as constituting at least a potential objection to presuppositional logic - though I find I am unable to cite clear references that justify this impression. Gazdar 1979b:107 might be taken as conveying some unease about the matter. Discussing pragmatic definitions of presupposition he comments: "There is a third general objection to the definitions... although it is not sufficient in itself to count directly against them. Curiously enough, it has an analog in the definitions of semantic presupposition, most of which have as a consequence that tautologies are presupposed by every sentence." (Gazdar 1979b:107). Boer & Lycan 1976, also highly critical of the logical approach to presupposition, comment "We propose to pass over this fact as being a 'don't-care': it is no more interesting that tautologies are semantically presupposed by every sentence than it is that they are semantically entailed by

every sentence." (1976:7). What Boer and Lycan mean by "interesting" is aguable, but I take them to be suggesting that this implication of presuppositional logic is of purely technical, as oppposed to conceptual or intuitive, significance.

Keenan 1972, 1973 devotes some discussion to this implication of such logics. That discussion, however, appears to be driven more by the (undoubted) fascination of the logical technicalities of the implication than by any desire to explicate its preformal and intuitive rationale. In the course of conducting the present study, I have come to the conclusion that this feature of presuppositional logic is no mere technicality but is fundamental to our intuitive conception of presupposition, that it must be taken seriously and retained in any coherent theory of presupposition. The attempt to explicate its intuitive rationale provides the present work with but a *leitmotif*, one that would constitute the central theme of any further research.

By way of introduction, consider again the quotation from Boer and Lycan. As their comments indicate, all tautologies are indeed entailed by every sentence. And this constitutes something of a problem for an entailment based natural language semantics. The problem is illustrated in the fact that, while *I have trampled on your monocle*, for example, semantically entails *All sick pandas are sick*, the latter is not part of what is said or can be meant (in some relevant sense of "mean") by someone uttering the former. Wilson 1975 addresses this familiar issue in the following comment:

> "If we take two necessary truths such as (23) [*all sick pandas are sick*] and (24) [*All bachelors are men*] it will follow from my definitions that they entail each other. But again though an entailment relation holds between (23) and (24) it is intuitively clear that (23) is semantically independent of (24) and that the semantics should record this fact. For one who believes in the truth-conditional approach to semantics, the solution to this problem is to narrow down the type of truth

condition and [sic] entailment which are seen as semantically relevant" (Wilson 1975:7).

Wilson does not consider the possibility that the narrowing down might be achieved automatically ~~achieved~~, in a classical as well as a non-trivial presuppositional language, by the distinction between entailments and presuppositions as defined in the SLDP. Assuming that presupposition is distinct from (strong) entailment, I have trampled on your monocle presupposes rather than entails Wilson's (23). And her (23) and (24) do not entail but presuppose each other. Even in a classical logic, we have semantic presupposition, at least trivially. We can use it to draw the distinction between those logical implications that are felt to be relevant to some linguistically restricted concept of sentence meaning (entailments) and those that are not (presuppositions). We do not want to banish logical relations such as hold between Wilson's (23) and (24) - and especially not, given that they satisfy the standard definition of presupposition: for part of the intuitive content of the idea of every sentence in a language having trivial presuppositions can be expressed by generalising over such relations of trivial presupposition and saying that

> every sentence S in a language L logically presupposes that the semantical rules of L are in force in S.

The meaning of S depends on this being so (see Keans 1970:50). This fundamental presupposition is connected with the matter of reflexive presupposition discussed immediately.

It might be argued that these observations can be used as an argument against a P-logic that admits non-trivial presuppositions (admits, for example, You own a monocle as a presupposition of I've trampled on your monocle), since non-trivial presuppositions would be relegated, by the above distinction, to being as of little

relevance to a linguistically restricted concept of sentence meaning as necessary truths are. This is not the case, however. Trivial presuppositions are quite clearly distinguished from non-trivial presuppositions by the fact that (all and) only trivial presuppositions (necessary truths) presuppose themselves. In other words, standard presupposition is reflexive when and only when it is trivial. This is proved by observing

(i) for any relation R, if R is both SYMMETRIC and TRANSITIVE then R is REFLEXIVE,

(ii) since every sentence (including the tautologies) presupposes each tautology, tautologies (and only tautologies) presuppose each other i.e. standard presupposition is SYMMETRIC when and only when it is trivial,

(iii) generally, standard presupposition is TRANSITIVE: the proof of this is given, for example, in Boer & Lycan (1976:7): "Suppose S1 presupposes S2 and S2 presupposes S3. Now if S3 is false and hence not true, then S2 is truthvalueless and hence not true, and if S2 is not true then S1 is truthvalueless. Thus S1 presupposes S3."

Hence a sentence standardly presupposes itself if and only if it is trivial (necessarily true).

As implied earlier, however, the concept of trivial presupposition has a more specific relevance to the central theme of this study. I assume that, included in the general task of developing a coherent and perspicuous logic of presupposition is that of developing a logic that can be construed as reconstructing WHAT IT IS TO PRESUPPOSE A PROPOSITION (be this an act, or an epistemic state, or whatever) as opposed to asserting, or judging, a proposition. I shall suggest that to presuppose a proposition

consists in being committed to that proposition while NOT countenancing the possibility that it may be false. By contrast, to assert a proposition is to be committed to that proposition while countenancing the possibility of its being false. I shall not elaborate this further here - it is discussed in Part Two in connection with the distinction between three-valued logic and two-valued logic with truth-value gaps. I mention it here because, if this characterisation seems at all plausible, it has the effect of placing trivial presupposition much more in the centre of the stage: the tautologies of a language are precisely those propositions whose truth the speakers of that language are committed to WITHOUT countenancing the possibility that they may be false.

5. Conclusion.

I have suggested uncontroversially that it is the SLDP, and only the SLDP, that has received serious attention in discussions of presuppositional logic, that such discussions exhibit the assumption that there is no logical alternative to that definition of presupposition. Since the SLDP DIRECTLY EXPRESSES the Salient Presuppositional Intuition (that of a proposition being implied both by A and ~A) this assumption may seem reasonable, and indeed more than reasonable. However, I have also suggested, more controversially, that the assumption is not warranted, that it would be a mistake to identify the generic notion of presuppositional logic with the SLDP itself. This is controversial on at least two counts: (1) it implies that a logical definition of presupposition need not (and perhaps should not) DIRECTLY EXPRESS the SPI mentioned above - this is discussed in more detail in Chapter II; (2) it implies that it is possible (and perhaps desirable) to formulate a definition of presupposition that does not

have the consequence that the failure of a presupposition INEVITABLY results in the presupposing sentence having a third logical status.

In order to justify these remarks, I must develop an alternative (but comparable) logical definition of presupposition. This is the enterprise to which this dissertation addresses itself. Before doing this, however, I devote the second chapter of this first part to a discussion of some further assumptions attendant on, and other consequences of, the assumption (SA-1) discussed here. By showing, as I hope, that these assumptions and consequences are unfortunate, I intend to cast further doubt on the *prima facie* warrant for that assumption.

CHAPTER II

FURTHER ASPECTS OF THE PREVAILING CONCEPT.

In this chapter I continue the critique of the treatment that presuppositional logic has received. I focus on four further assumptions which I take to be characteristic of this treatment. These stem more or less directly from the assumption discussed in Chapter 1.

1. The disassociation of definition and projection.

The matter to be discussed in this section is a trend inaugurated by Langendoen and Savin 1971 and prefigured in Morgan 1969. Langendoen and Savin proceed on the assumption that the concept of presupposition is unproblematic and well understood at least in respect of its application to simple sentences (they give what they describe as a Fregean characterisation). The problem, as they saw it, was to predict the presuppositions of compound sentences from the presuppositions of the simple sentences contained in them. This they described as 'THE PROJECTION PROBLEM FOR PRESUPPOSITIONS'. They predicted that the presuppositions of any simple sentence would be inherited as such by any compound sentence containing it. Following Morgan 1969:170 this has come to be known as the Cumulative Hypothesis.

Langendoen & Savin's working assumption (which I shall dub Standard Assumption 2) may be expressed as

Standard Assumption 2:

It is reasonable to treat of the projection of presuppositions either independently of the definition of presupposition or on the assumption that a correct definition may be taken for granted in respect of simple sentences.

This working assumption has proved popular, and has led to what can only be described as a tradition in which the definition problem and the projection problem are disassociated, identified as separate and mutually independent problems. A solution to the projection problem for presuppositions has come to seem a coherent autonomous objective - perhaps even the most important one.

As noted in Chapter 1, the best known exponent of this approach is Karttunen 1973, which is a response to the inadequacies of the Cumulative Hypothesis. And, again as noted in Chapter 1, the assumption that underlies this exclusive preoccupation with projection is rather clearly in evidence both in Hausser's 1973 definition and in Gazdar's criticism of the definition. A look through the papers in Oh and Dinneen 1979, perhaps the largest collection on the single subject of presupposition, gives a good idea of how pervasive are the preoccupation with providing a projection solution and the disassociation on which that preoccupation depends for its coherence. Two papers in that collection (by Katz (1979) and by Gazdar(1979a)) actually contain 'A solution to the projection problem' in their titles, as does Mioduszewska 1985. Most recently, the publisher's summary that has been made available of van der Sandt (forthcoming) indicates that the disassociative tradition is very much alive.

This disassociation has had the unfortunate effect of cutting off serious thought on the logical nature of presupposition itself.

Langendoen & Savin 1971, for example, entirely ignore the fact that their (as it happens incorrect) cumulative prediction is anyway problematic if Frege's concept of presupposition is understood as being reconstructed by the SLDP. This is so because S2 being a syntactic constituent of S1 is neither a necessary nor a sufficient condition for S1 and S2 being in any kind of logical relation. But, by the SLDP, presupposition is defined as a logical relation.

The general question that I wish to raise here is whether any putative solution to the projection problem, if it purports to be JUST that, can be a coherent objective. A correct definition of the relation of presupposition between A and B will predict the intuitive presuppositions and logical status of A whether A be simple, compound or complex. To accept that there is a projection problem is tantamount to accepting that the correct definition of presupposition has yet to be formulated. Any purported autonomous projection solution will, by definition, either conflict with the definition that throws up that problem or, in the absence of any explicit definition, will not be a solution to anything and hence will be trivial (in a very ordinary sense of that word). For projection problems are thrown up by definitions: without a definition, there can be no coherent problem.

At this point in the presentation, I am concerned only with making this general point. Karttunen's work on presupposition projection has been mentioned and will, with others', be discussed in detail in due course. No discussion of the disassociation identified in this section, however, would be complete without a special mention of the influential treatment presented in Gazdar 1979a and b. That treatment represents the highwater mark of the disassociative tradition which I seek to repudiate. In it, the disassociation of definition and projection extends beyond the issue

of what the LOGICAL definition of presupposition might be to include a lack of concern with ANY kind of definition whatsoever. Gazdar 1979b begins by noting (89):

> In the course of this debate [about presupposition] there have been two main issues that turn out to be heavily interdependent. One has been whether the notion should be semantically or pragmatically defined, and the other has been the thorny issue of "projection"....

This allusion to the 'interdependence' of a definitional issue and the projection issue is surprising given Gazdar's purported projection solution, which may be summarised as follows.

An utterance is defined as a sentence-context pair (following Bar-Hillel 1954). Only utterances have presuppositions as such. But 'PRE-SUPPOSITIONS' are assigned to sentences (in semantic representation). The presupposition of an utterance (of some sentence) is defined as a 'pre-supposition' (of that sentence) that is epistemically consistent (cf. Hintikka 1962) with the context with which the sentence is paired. 'Pre-suppositions' (of sentences) fail to become presuppositions (of utterances) if and only if they are epistemically inconsistent with that context. In that case they are cancelled. The presuppositions of an utterance, then, are a post-cancellation subset of the 'pre-suppositions' of the sentence uttered. Presupposition is thus defined in terms of 'pre-supposition'. But the sole information provided as to what a 'pre-supposition' might be is that a 'pre-supposition' is a potential presupposition. Taken seriously as a definition of presupposition this is, of course, circular. But Gazdar does not intend it to be taken seriously as a definition. The notion of 'pre-supposition' is not intended to have any ontological status (p.24) and in fact has a purely technical role to play in the proposed projection solution. The introduction of 'pre-supposition' is Gazdar's way of telling us that he neither knows nor cares what

it is that he is projecting. (See Burton-Roberts 1984:204 for further discussion. Stalnaker effectively made the same point in his 1980 review of Gazdar 1979b (903-4), commenting that Gazdar "bypasses the descriptive question what is the phenomenon of presupposition".)

I suggest that, even were Gazdar successful in what he aims to achieve, the nature of that achievement would remain obscure. Gazdar (among others) appears to have been conceptually side-tracked by the programme inaugurated by Langendoen and Savin 1971, to the extent of losing sight of the real challenge of the so-called projection problem. The challenge is that of knowing what a presupposition is and in the light of that knowledge predicting which intuitive presuppositions will manifest themselves. In a real sense then the trick actually consists in knowing (being able to define) what it is that is being projected. Even this way of putting it concedes too much coherence to the disassociation of projection and definition since, as implied above, an appropriate characterisation of presupposition would of itself preempt the projective task. As a matter of principle, a real solution to the projection problem will not be a solution to the projection problem as such, but will consist in abandoning the definition that leads to that problem in favour of one that does not. In presenting (in Part Three) the alternative theory of presupposition to be developed here, I face a certain difficulty in presenting these issues separately.

I have suggested above that Gazdar's criticism of Hausser's definition (9) in Chapter 1, and that definition itself, manifest three interrelated assumptions. I repeat them here. (i) To adopt "the semantic hypothesis" is to adopt the SLDP, on the further assumption that (ii) the SLDP is satisfactory as far as elementary

formulae (simple sentences) are concerned and that therefore (iii) the only logical possibility for a semantic theory of presupposition is in some way to solve or otherwise mitigate the projection problem attendant on that definition. In this section I have been concerned with (iii) and its relation to (i). I have argued that (iii) is misguided and may not even be coherent. In the next section I consider assumption (ii).

2. Standard presupposition and the logical status of simple sentences.

I have presented some evidence that suggests a prevailing assumption that

> STANDARD ASSUMPTION 3.
> The SLDP is (most) satisfactory in its application to simple sentences.

The preoccupation with the projection problem may be taken as general evidence of this and, as already noted, both Hausser's 1971 definition and Gazdar's criticism of it constitute quite specific evidence of it.

That this IS an assumption needs some explaining, for the SLDP is clearly problematic even in its application to simple sentences, as noted by critics such Kempson 1975 and Wilson 1975. The problem was first acknowledged in print by Strawson himself 1954 (more extensively discussed in 1964 (reprinted 1971)) and has been quite widely noted by those more sympathetic to Strawson's general position than Kempson and Wilson. (Cooper 1974:38-9, Gundel 1977: Sect. 2.7, Lyons 1977:601-2, Fodor 1979:209, McCawley 1981:240-1, Reinhart 1982: 15-6, Seuren 1984:351). Yet it has had less impact

on the development of an appropriate presuppositional logic for natural language than might have been expected, being completely ignored in the general preoccupation with putative projection problems.

The problem is this. We have seen that, under the SLDP, we may equate the falsity of a presupposition and lack of a classical truth value in the presupposing sentence. If A has a classical truth value then either B cannot be a presupposition of A or, if B IS a presupposition of A, B must be true. Yet, even among those who acknowledge that the TYPICAL and CHARACTERISTIC consequence of a false presupposition is lack of classical truth value in the presupposing sentence, it is a common intuition that this is not a NECESSARY or INEVITABLE consequence. That is, even allowing that (1)

(1) The present king of France is wise

lacks a classical truth value on account of the falsity of its presupposition (2)

(2) There is a present king of France

it is a commonly attested intuition (which I share and have extensively but informally tested) that (3)

(3) The king of France visited me today.

either is false, or under certain circumstances CAN be false, even though it presupposes what (1) presupposes.

This intuition is in conflict with the SLDP. Since (3) intuitively has (or may have) the classical value 'false', even for those who admit of a third logical status, and since (2) is false, (2) cannot be a presupposition of (3). But (2) intuitively is a

presupposition of (3), as much as of (1).

It is noticeable, for example, that Kempson 1975: Ch.5.1 (85-95), an outspoken critic of the logical concept of presupposition, herself concedes an intuitive distinction between examples such as (1) and examples such as (3). Her most telling counter-examples to the logical theory of presupposition instantiated by the SLDP crucially involve successful referring expressions in addition to referring expressions with no actual referent (as in (3)). With regard to examples such as (1), on the other hand, she explicitly concedes the intuitive force of the characteristic prediction of a presuppositional logic:

> "the concept of neither true nor false matches the native speaker intuitions about the oddity of saying either *the king of France is bald* or *the king of France is not bald* where there is no such man."
>
> Kempson 1975: 90.

I believe the reason why this intuitive distinction has had less impact than it ought can be explained in terms of Strawson's own 1971 reaction to it. That reaction is itself ambiguous and problematic. Strawson proposed that whether a false presupposition results in the lack of classical truth value for the presupposing sentence depends on whether the expression that induces the false (existential) presupposition (henceforth, with Strawson, the "guilty" expression) identifies the topic of the utterance or not, whether it is the topic-expression (which Strawson identifies with subject function). For Strawson, lack of a classical truth value results only from the falsity of a presupposition induced by a topic-expression. (On this account, presumably, we are to take the presence of extra, successful referring expressions as being of relevance only because they provide natural alternative candidates for topic.)

First, the matter of ambiguity. The response is ambiguous in its implications because it is not clear whether, in saying this, Strawson is (a) abandoning the SLDP or (b) maintaining and defending the SLDP. Even under this latter interpretation it is equivocal in its implications for the SLDP since it can be interpreted (i) as an attempt to buttress the logical definition as it stands by a kind of non-logical post-definitional filtering or (ii) as constituting a non-logical intrinsic modification of it, as restricting the class of presuppositions to those induced by topic-expressions. McCawley 1981:240, who concurs in the intuition and in Strawson's explanation of it, interprets him as abandoning the SLDP. But Reinhart 1982 sees Strawson as maintaining the SLDP, and has it that "it follows from [Strawson's] analysis that only topic noun phrase expressions carry existential presuppositions" (15). This is interpretation (b(ii)). That interpretation is, of course, highly counterintuitive (Cooper 1974:37 describes it as "totally implausible"). Quite independently of topicality, the intuition that (2) is a presupposition applies equally to (1) and (3). But Reinhart's comment does at least point up the ambiguity of Stawson's discussion (and, in fact, in Ch. IX below I come to the conclusion that, counter-intuitive though the interpretation is, it is the correct one.)

For the proponent of presuppositional logic, Strawson's discussion is also unfortunate because, construed as an attempt to buttress the SLDP, it represents a buttressing that depends on the extra-logical concept of topic; it depends furthermore on faulty assumptions about topic; finally, it can be shown to be empirically incorrect.

The extra-logical character of Strawson's explanation of the intuitive observation has had the unfortunate effect of suggesting

to writers interested in the more strictly logical aspects of presupposition to believe that they can safely ignore the intuitive observation itself as being, from a logical point of view, epiphenomenal. This at least would explain why the intuitive observation has not had the impact that it might in more formal treatments. The alternative to ignoring it is not attractive from a logical point of view. On the assumption that the appeal to topic is made as a means of defending the SLDP, Strawson makes it appear as if a presuppositional logic can be accepted only by accepting a topic-dependent definition of truth. This unwelcome consequence is duly noted by Kempson 1975:88 in her argument against the generic concept of presuppositional logic.

Furthermore, Strawson's controversial (and, it should be noted, quite unnecessary) identification of topic-expression with subject function opens the way for Kempson, who interprets Strawson's explanation as an attempt to salvage the SLDP, to point out what is clearly the case: that whether in subject position, as in (1), or not, as in (4),

(4) I was visited by the king of France today

referring expressions do intuitively induce existential presuppositions but, even where these presuppositions are false, it is not always counterintuitive to regard sentences containing them as false and hence as truely negatable. This is contrary to what Strawson would predict by his comments on topic and subject, and since these comments are construed as an attempt to salvage the SLDP, the implication is that the SLDP is unsalvageable. Furthermore, since the SLDP is assumed to be necessary to a presuppositional logic, the implication of this in turn is that the enterprise that presuppositional logic represents should be abandoned.

Thus, if we take Strawson's intuitive observation seriously - as I do, it is of some importance to show that his explanation is not only not necessary, but even in its own terms (as an account of topicality and independently of any implications of that account for presupposition) improbable. An alternative account of the intuitive datum must be provided. This is the subject of Part Three esp. Chapters IX and X. There it will emerge that there is a quite striking connection between the problems posed for the SLDP by compound sentences (those that constitute the so-called projection problem) and the problem posed for it by the logical status of simple sentences, discussed in this section. It is in part this connection that motivates my earlier critique of exclusively projectional studies, though it appears to me that the prima facie argument against the disassociation of definition and projection advanced there stands in its own right. On prima facie grounds at least, a successful alternative to the SLDP must be capable of handling these data globally, in terms of a single principle, following from or constituted in the actual definition of presupposition.

I conclude this section with a general remark. It will emerge, if it is not already beginning to, that the SLDP is a very blunt instrument. It makes, as we have seen, the BLANKET prediction that the falsity of a presupposition inevitably, universally results in lack of classical truth value for the presupposing sentence. The alternative required must be capable of making a more sensitive range of logical predictions. Success in this enterprise would have implications over and beyond matters of empirical adequacy. For, under the SLDP, it was enough to show that the blanket prediction was counterintuitive in some (and perhaps even many) cases to cast doubt on its correctness even when it succeeded in

matching the intuitions. If this is the force behind Kempson's criticism, as I take it to be, it clearly hits the mark.

The point will bear emphasis. The intuition that sentence (1) above lacks a truth value on account of the falsity of its presupposition (2), the intuition that questions of its truth value simply do not arise under that circumstance, is very strong and is overwhelmingly more often conceded than not. But the SLDP can take small comfort from this, since it makes that prediction simply as a particular instance of its blanket prediction. And this blanket prediction is much less palatable from an intuitive point of view. Naturally enough, this casts doubt on the logical character of the intuition and has rather strongly motivated the search for an alternative NON-logical modelling of the few intuitive predictions of lack of truth value that the SLDP does succeed in making. But if an alternative logic of presupposition were to succeed in matching the intuitions more accurately, this would have the effect of re-instating those intuitions as specifically LOGICAL INTUITIONS (intuitions as to the logical status of presupposing sentences) and hence as appropriately and properly modelled by a LOGIC of presupposition. (The same point is made by Fodor 1979:200.)

3. Presuppositional logic and the ambiguity of negation.

In this section I discuss an important fourth assumption which is evident in the overwhelming majority of treatments of presuppositional logic, both protagonistic and antagonistic. Since discussion of this assumption leads us directly towards the topic of Part Two of the dissertation, it is treated in slightly more detail.

Rescher 1969:122 observes "in a many-valued logic, various

types of negation are possible." Logicians interested in such things have consistently availed themselves of these possibilities, notably Bochvar 1939, Smiley 1960, Van Fraassen (eg 1969), Herzberger 1970, 1973, R. Thomason 1972: 242 et seq., who cites further references, as does Rescher 1969. More recently, so have S. Thomason 1979 and Seuren 1984. Horn 1985:126 reports that the same is true of (J.) Martin 1979, 1981 (neither of which have I had sight of). Bochvar 1939:290 (see Rescher for a discussion in English (339 - and 31 but there with a crucial misprint) defines a Truth operator 'T' as in (1)

(1)	p	Tp
	T	T
	F	F
	3	F

(where '3' represents a third logical status) in terms of which 'external' counterparts of all the ('internal') standard logical connectives may be defined, including negation. Thus, if 'internal' negation is as in (2):

(2)	p	~p
	T	F
	F	T
	3	3

and if external negation '-' is defined as in (3)

(3) $-p =_{(df)} \sim Tp$

we derive a truth-table for external negation as in (4):

(4)	p	-p
	T	F
	F	T
	3	T

As Horn 1985 observes, this derivation of a further negation operator has become standard, and I shall not comment further on it in this section. (It is discussed in more detail in Part II.)

The implication of this distinction between internal and external negation, when applied to the notion of presupposition (specifically as defined by the SLDP), is that internal negation (since it preserves the third logical status of the positive sentence) is 'presupposition-preserving', while external negation (since it takes all third logical statuses into the classical truth-value, true) is 'presupposition-cancelling'.

It is widely taken for granted that

Standard Assumption 4.
anyone wishing to claim of (some) natural language that it is, logically, a presuppositional language - that its sentences can lack a classical truth value in virtue of the falsity of a presupposition - is committed to the claim that the negative sentences of that language are truth-conditionally and truth-functionally ambiguous, that the semantics of the language includes two logical negation operators.

This stems from what many acknowledge to be the empirical need to recognise that, although negations such as that in (5)

(5) The king of France isn't bald - there's no king of France!

are in some sense marked (Kempson 1975:85 even concedes that they are they are 'unnatural'), they do appear to be possible uses of negation.

Thomason 1973:2 is representative in commenting:

> I can think of only one way for the proponent of semantic presupposition to rebut evidence of this kind (supposing that the evidence in agreed upon) and this is.... [by] claiming that negation is ambiguous. Unless the claim is made, I do not believe that the semantic notion of presupposition can be defended at all.

The cry has been taken up and ambiguous negation used a cudgel on theories of semantic presupposition:

> "The absence of ambiguity [in negation] implies the nonexistence of semantic presupposition and indefensibility of truth-value gaps."
> (Atlas: 1979:268)

> "It was only under a presupposition based analysis that the ambiguity of negation need be invoked"
> (Kempson 1979: 295).

And, since negative "are indeed unambiguous",

> "the Wilson-Kempson view of presupposition receives further confirmation, since the invocation of an internal-external negation ambiguity to preserve the case for presuppositions will no longer be a possible move to make"
> (Kempson 1979:286)

Horn 1985 provides a not altogether accurate survey of the matter. He comments (126):

> "The existence of marked negative statements which are true when the affirmative counterparts are neither true nor false has led proponents of semantic presupposition to conclude that natural language negation must be represented as ambiguous, either by allowing dual interpretations of a single operator or by providing dual scope possibilities for negation in logical form. A systematic ambiguity of negation figures prominently in ALL [SIC] theories which admit semantic presuppositions - but, as Russell illustrates, not only in these."

Among proponents of P-logic, Strawson 1950, 1952 has explicitly argued (contra Russell) that negative sentences are not ambiguous, effectively retaining just Bochvar's internal negation (though he would not, of course, put it this way), contrary to Horn's claim that ALL proponents of presupposition have advocated the ambiguity of natural language negation. Consistent with this, Strawson 1971:93 argues that p and Tp are equivalent in a presuppositional logic, as

they are in classical logic. In doing this, Strawson is not merely ignoring the data presented by critics of P-logic and proponents of the ambiguity within P-logic, but simply attesting the intuition that to negate a sentence with a false presupposition sounds odd - for him, odd to the point of unacceptability. This, after all, is the intuition that led Strawson, against Russell, to formulate a logical definition of presupposition in the first place. This debate between Russell and Strawson is a matter I return to shortly.

As indicated, the claim that negative sentences are ambiguous - due either to a Russellian scope ambiguity or to a 'lexical' ambiguity in the operator itself - has of course come in for severe criticism from opponents of P-logic (see Allwood 1972, Wilson 1975:47, Kempson 1975:95-100, 1979, Boer & Lycan 1976, Atlas eg 1977 and Gazdar 1979a, 1979b:64-66.) Gazdar presents what seems to me the strongest argument against a 'lexical' ambiguity. He points out (1979b:65-6) that lexical ambiguity is almost without exception a language-specific phenomenon. A lexical ambiguity in one language is typically not retained by a translation into another language. Yet the putative ambiguity of negation is systematically attested across a wide range of languages - if not all. Gazdar comments that as far as he is aware no language is known to have "two or more different types of negation such that an appropriate translation [from English]...could be automatically 'disambiguated' by the choice of one rather than the other"(66). See Horn 1985:163-4, however, for a fuller discussion of the matter.

And there is the further argument that the two putative senses of the negation are semantically related to each other in such a way that it is demonstrably impossible (Zwicky and Sadock 1975) to establish empirically that there is indeed a genuine semantic ambiguity. This essentially is Kempson's 1979 argument.

An important argument against the ambiguity of negation that has not, as far as I am aware, been advanced is that the incorporation of a further means of negation within the semantics leaves totally unexplained the special, marked and, in Kempson's word, unnatural character of the negations it is designed to account for. It seems too far-fetched to suggest that an operation for which specific provision is made within the semantics should result in any feeling of specialness, markedness or unnaturalness when actually applied. On the contrary, the effect of incorporating such an operator within the semantics would be precisely to NORMALISE that sense of negation. But this contradicts much of what a P-logic is supposed to account for. This observation prefigures the more general discussion below.

I shall not review the specific arguments against the ambiguity of negative sentences because I wish to address three general and more important issues that arise if/when the ambiguity of negation is invoked in support of a presuppositional logic. These will have the effect of directly contradicting the suggestion made by Thomason, Kempson, Atlas in the above quotations, and of vitiating the arguments FOR or AGAINST P-logic that are based on any supposed semantic ambiguity of negation.

These issues may be approached by asking a question which is obvious but which I do not recall having seen posed before: If the putative ambiguity of negation is so important to the defence of a logic of presupposition for natural language, how is it that the anti-presuppositional Russell 1905 argued that negative sentences are ambiguous, while the pro-presuppositional Strawson 1950 argued against that proposition?

The FIRST issue can be presented by tackling the Strawsonian

side of the question. I have suggested that Strawson is only being consistent in claiming that negative sentences are not ambiguous, but are univocally presupposition-preserving i.e. neither external nor internal, but univocally taking truth into falsity, falsity into truth and, therefore, '3' into '3'. After all, this is exactly what his theory of presupposition predicts. Since presuppositions are (and, by the SLDP, are BY DEFINITION) implications shared by both S and not-S, it follows that a logical theory of presupposition must capture at least the idea that, in a presuppositional language, there is no negation of S that is expressive of presupposition-failure in S. This is what makes a presupposition a presupposition. (We shall see in due course that the SLDP includes this idea but goes beyond it.) To admit into the language a further semantic type of (presupposition-cancelling) negation into the language would be flatly to contradict the theory. It would be tantamount to:

> In a presuppositional language, there is no negation of S expressive of presupposition-failure in S but there is a negation of S that is expressive of presupposition-failure in S.

It would be tantamount to defining presupposition as:

> A presupposition is a logical implication from both A and its negation but there are presuppositions which are logically implied by A but NOT by its negation.

These are contradictions. I suspect that this observation will be greeted by shouts of "Unfair!" but I believe that the contradiction can be escaped only by rendering the theory trivial and vacuous as a theory of presupposition. Fairness/triviality would be (re)introduced by making explicit reference to the two distinct types of negation, as in:

> A presupposition is a logical implication from both A and the presupposition-preserving negation of A but there is a negation

of A in respect of which the presuppositions of A function as strong entailments of A and are therefore cancelled.

There are several senses in which such a theory is trivial as a theory of presupposition. One is dealt with below in connection with Russell. Leaving that aside, a logical theory of presupposition that includes a presupposition-cancelling negation is either trivial or contradictory (or both) because it is, quite simply, unfalsifiable. It is unfalsifiable for a reason that is logically prior to the mentioned impossibility of establishing the existence of an ambiguity of negation; it is unfalsifiable because, even allowing that the ambiguity could be established, no putative counterexample to the original definition could possibly be a counterexample since all and only 'apparent counterexamples' would be handled by the presupposition-cancelling negation. This theory would be , in effect, a theory capable of handling its own proper counter-examples.

Consider the matter from this angle. Under the Standard theory of presupposition, (5) above is a contradiction. Any theory in which (5) does not emerge as a contradiction contradicts that theory. There are of course coherent theories in which (5) is not a contradiction (e.g. those of Wilson and Kempson). But these are NON-presuppositional theories, not to say anti-presuppositional theories. To allow a PRESUPPOSITIONAL theory to characterise (5) as non-contradictory would simply be to raise the contradiction out of the EXAMPLE and place it squarely in the THEORY ITSELF. It would combine the central tenet of (standard) presuppositional theory with the central tenet of counter-presuppositional theories. This yields, not the best of both worlds, but a trivialising contradiction (contradictions are trivialising because from a contradiction anything follows).

The real argument against the ambiguity of negation then must come from within presuppositional logic itself; to postulate an ambiguous negation in the context of a presuppositional logic renders a logical theory of presupposition contradictory and vacuous. The point seems both obvious and important, but I do not recall having seen it made before (though it may be that Wilson 1975:94,137 is touching on the matter).

The SECOND issue arises when we consider the Russellian side of the question. Russell argued for a scope ambiguity in negative sentences as providing an ALTERNATIVE means of accounting for what a logical theory of presupposition was designed to account for. The force of Russell's theory of descriptions in this context is that it was offered as OBVIATING the need for logical presupposition and the need for truth-valuelessness strictly interpreted. However successful Russell's analysis may or may not be, it is offered as a logical alternative to a logic which defines a relation of presupposition as such. To incorporate the Russellian ambiguity (or any other device with an equivalent logical effect) into a presuppositional logic would be otiose, rendering it trivial as a theory of presupposition. Russell and Strawson appear to have seen this rather clearly: they disagreed and they knew that they disagreed, but the matter has definitely become obscured.

This is illustrated by Dummett's 1973 discussion of a similar point in respect of Frege. Towards the end of Chapter 12 Dummett develops at length the argument that what Frege attempts to express in terms of presuppositions and the logical status of neither true nor false can be accounted for (and the need for such a status circumnavigated) by having two falsity operators, 'false-1' and 'false-2'. "The case in which we are calling the sentence 'false-1' is of course just that in which Frege calls it simply 'false', while

that in which we are calling it 'false-2' is the one in which Frege says it is neither true nor false" (421).

The parallelism between this and Bochvar's distinction between 'internal' (narrow scope) and 'external' (wide scope) negation is striking. Inspection of the truth table for external negation reveals that the operation it defines is one which, whatever the argument, unfailingly obtains truth or falsity as value. In particular, '3' is mapped onto truth. But if '3' can be mapped by a NEGATION operation onto classical truth, this makes '3' a species of falsity. This is perfectly consistent with the claim of Russell and Dummett that logical statuses other than the classical truth values are not required.

Dummett's discussion leads us to the THIRD issue - connected with the comment by Rescher 1969 with which I opened this section. In discussing it, I must anticipate some of the issues to be discussed in Part II.

Dummett points out that in the interpretation of Frege outlined above, he is "in effect, describing the use of the negation sign by means of a three-valued truth-table" (421). Now in philosophical logic, multivalent systems are formulated without regard to their possible application and without regard to either their semantic interpretation (in terms of truth and falsity) or their intuitive interpretation. They are purely formal systems. They are certainly not specifically intended to reconstruct the intuitive notion of the radical kind of failure constituted by the failure to make a statement. Indeed, if the making of a statement consists in asserting something that can be assessed for truth value, it follows that if what is asserted is assessed as having a third truth-value (strictly interpreted as such) then a statement will indeed have been made by its assertion. It is on these grounds that Evans 1982

criticises Dummett's interpretation of Frege: "Frege registered this [radical kind of failure] by saying that the sentence is neither true nor false and his reason for saying this makes it absolutely clear that he meant that the sentence fails to have any truth value at all; he was not thinking of a third truth value... as Dummett 1973: Chap 12 has suggested" (Evans 1982:11).

Dummett and Evans disagree on the correct interpretation of Frege specifically and it is not my purpose to decide between those interpretations. What Dummett, Evans and I do seem to be agreed on, however, is the existence of a correlation between an enlargement of the set of falsity/negation operators in a logic and the interpretation of that logic as being STRICTLY multivalent - as having an enlarged set of actual truth values as such. Indeed, one might wonder in passing whether Rescher's remark quoted above is not too weak. I surmise that the number of such operators in a logic is a function of the number of truth values it admits. In a two-valued logic there are two truth values and one logical function from one to the other. This function is called 'negation'. As Dummett has shown, and Evans agrees, if a logic admits three truth values it will (must?) define logical functions between these values, and the combined operation of two such functions is both necessary and sufficient for this. (The suggestion made in this paragraph would seem to be consistent with assumptions made by Seuren 1984 whose Section 2 is entitled 'Two negations and three truth values'. Indeed Seuren goes on to allow for no less than three kinds of negation and FOUR logical statuses: 'undefined', 'true', 'false-1', and 'false-2'. Seuren in fact suggests (p. 362) "for any n-valued system...n-1 negations can be defined...." This comment implies that Seuren's "undefined" is indeed a truth-value.)

There is, then, a third unwelcome general consequence of the

appeal to ambiguous negation in support of a P-logic in natural language. Within linguistics at least (but certainly for Strawson himself) the appeal to a non-standard logic for capturing presuppositional intuitions - one that admits of a logical status other than the classical truth values - is made as a means of reconstructing the intuition of a very radical kind of failure, the failure to make an assertion that has a truth value. I am calling this 'statement failure'. With Evans, I would wish to say that a logic can be interpreted as reconstructing exactly this notion if and only if it can demonstrably be construed, not as a three-valued logic, but as a two-valued logic with truth-value gaps. This of course presupposes that we have a demonstrable decision procedure for this and it is far from clear that we do; Part II offers a remedy for this. This much is clear from the preceding discussion, however. The admission into a logic of negation operators in addition to classical negation (a function from truth to falsity and vice versa) is incompatible with an interpretation of that logic as being a two valued logic with truth-value gaps. I return to the matter in Part Two.

As noted, it is clear from Strawson's informal discussion of presupposition that he intended a two-valued logic with truth gaps. In the light of the foregoing remarks, then, Strawson is absolutely right, ~~then,~~ to shun ambiguous negation. This does not mean, however, that Strawson achieves a gapped P-logic (rather than a trivalent P-logic) simply by refusing to countenance additional falsity operators and hence a semantic ambiguity of natural language negation. The matter is treated in more detail in Part II.

Since a two-valued logic (with or without truth-value gaps) can only assign one coherent interpretation to negative sentences (the so-called "internal" interpretation), instances of marked, special,

negation, such as that in (5) must be handled independently of the system - that is, non-logically, non-truthconditionally, non-truthfunctionally. This is precisely what we should expect, given the above observation that the semanticisation of further negation operators implies the NORMALISATION of further senses of negation. The issue is discussed at length in Chapter X.

In the light of the general issues discussed in this section, one might wonder why proponents of presuppositional logic would want, or could be seen as wanting, to espouse any kind of semantically ambiguous negation. How has this idea arisen? Consider Kempson's 1979 discussion, for example: "Insofar as this problem is treated within the pro-presupposition lobby, it is dismissed as a matter of ambiguity involving a quite different sense of the negative sentence in question"(284). The reference cited in support of this statement is in a footnote (tagged to 'lobby' in the above quotation) - to Kiparsky and Kiparsky 1971:351, described as "starting the recent controversy". Kiparsky and Kiparsky 1971:351 reads

> "Presuppositions are constant under negation. That is, when you negate a sentence you don't negate its presuppositions... In fact, if you want to deny a presupposition, you must do it explicitly:... Abe didn't REGRET that he had forgotten: he had remembered. The second [main - NBR] clause casts the negation of the first into a different level; it's not the straightforward denial of an event or situation, but rather the denial of the appropriateness of the word in question ([capitalised above]). Such negations sound best with the inappropriate word stressed."

This description leaves something to be desired in the matter of explicitness, certainly - and this is part of the problem. If one were disposed to interpret this as a semantic theory of the ambiguity of negation, such an interpretation is, I suppose, just about possible. But why should one be so disposed? That is not a necessary interpretation by any means. The Kiparsky's at no point

explicitly sanction a presupposition-cancelling negation. On the contrary, they explicitly say (i) that presuppositions are constant under negation and (ii) that it is the (positive) second clause, and its inconsistency with the presupposition of the first, that has the effect of bringing the presupposition into question. This is of course perfectly consistent with a univocal negation operator when combined with a pragmatic account of presupposition-cancellation. It is true that the Kiparskys do not develop a pragmatic account - but they don't develop a semantic account either. In fact the Kiparskys don't pretend to offer an account at all. Nevertheless, there appears to me no cogent reason to suppose that, when properly developed, their comments should be seen as inevitably leading to a semantic rather than a pragmatic account.

If the considerations presented here have the force that I attribute to them, they effect something of a reversal in our picture of things. A coherent presuppositional logic for natural language, far from implying an ambiguity in negative sentences, should be regarded as downright incompatible with such an ambiguity, and on several different grounds. In these terms, it appears to me that discussions of P-logic which are based on the theoretical (un)desirability or empirical (in)adequacy of postulating a semantic ambiguity in negative sentences, lose much if not all their relevance to the issue of presuppositional logic. I conclude that ambiguity of negation or the lack of it is not an issue that need, or can, divide the pro- and anti-presupposition camps.

The discussion has in part depended on the intuitive distinction between a trivalent logic and a gapped logic. That a supposed semantic ambiguity of negation has come to seem so central to P-logic is, I believe, in large part due to the lack of serious attention paid to that distinction. And this lack of attention in

turn can be shown to arise from the assumption that there is just one possible logical definition of presupposition, namely the SLDP. For if there can only be one definition anyway, the distinction between trivalence and gapped bivalence must remain a purely academic one.

4. Logically defined presupposition and intuitive presuppositions.

Before directly addressing the topic of this section, let me draw together some implications of the discussion so far.

1. The Salient Presuppositional Intuition is that of some proposition B being implied both by A and by its negation, ~A.

2. The prima facie appeal of the SLDP is that it embodies DIRECT EXPRESSION of that intuition, at least in one of its several logically equivalent formulations.

3. The SLDP makes what I have called a BLANKET PREDICTION to the effect that A has a false presupposition if and only if A lacks a classical truth value. In the formulation (1) in Chapter I, this takes the form of DIRECT EXPRESSION of a Truth Gap Intuition.

4. The blanket prediction of the SLDP is counterintuitive. Intuitively, lack of a classical truth value in a presupposing sentence is the TYPICAL and CHARACTERISTIC consequence of a false presupposition but not a necessary or inevitable consequence. In other words, even accepting that 'truth gaps' may occur, the intuitive distribution of truth gaps is not co-extensive with the intuitive distribution of false presuppositions.

In (1)-(4) we have reached an impasse. Given the equivalences

noted at the opening of Chapter I, (1)-(4) contradict each other. This is precisely the kind of impasse which, very naturally, motivates the anti-presupposition lobby. I have suggested, however, that there is an alternative to abandoning the very idea of P-logic, and a more obvious one. It consists in abandoning the SLDP as the paradigm of what a P-logic should express. In suggesting this, I am suggesting that we should abandon yet another, apparently very natural, assumption associated with SLDP and from which the SLDP derives its apparent necessity. It is this:

> Standard Assumption 5.
> That any intuitively adequate logical definition of presupposition must embody direct expression of the Salient Presuppositional Intuition.

The reader might be forgiven for thinking that, since the Salient Presuppositional Intuition is (surely) the very essence of presupposition, if a logical definition of presupposition is not required to express it directly, then surely nothing (of substance) CAN be required of such a definition. But consider: in discussing the logical equivalences at the opening of Chapter I, we were implicitly discussing the logical equivalence between (a) direct expression of the Salient Presuppositional Intuition and (b) the blanket prediction of the SLDP. It follows that an intuitively/empirically adequate definition of presupposition (one that avoids the counterintuitive blanket prediction) CANNOT embody direct expression of the SPI - and, indeed, cannot embody direct expression of a Truth Gap Intuition, since this is equivalent.

As put, SA-5 seems reasonable, indeed inevitable. What I want to do now is generalise SA-5. When this is done and it is in put into a proper perspective, it will, I hope, appear less inevitable.

In generalising it, it will be useful to prove formally something which may seem intuitively obvious - but the proof will be useful anyway (it has played an important part in my own thinking on presupposition).

THEOREM. (a) implies (b), where

(a) = A presupposes B iff A implies B & ~A implies B

(b) = A presupposes B iff ~A presupposes B.

Since both (a) and (b) are biconditional, the effect of proving this will be to prove that, if (a) is the definition of presupposition, then (a) and (b) are equivalent; in other words, either (a) and (b) are equivalent or (a) is not the definition of presupposition.

Since (b) is equivalent to (c),

(c): (i) If A presupposes B then ~A presupposes B

AND

(ii) If ~A presupposes B then A presupposes B

we first prove that, under (a), if A presupposes B then ~A presupposes B (c(i)). Assume the contrary, i.e. assume that, under (a), A presupposes B and that ~A does NOT presuppose B (1 below). Then ~A does not presuppose B (2 below). Now if ~A does not presuppose B, then it is not the case that both ~A and its negation ~~A imply B (3 below). But ~~A is equivalent to A. So it is not the case that B is implied both by ~A and A (4 below). Then, under (a), it is not the case that A presupposes B (5 below). But this conflicts with our initial assumption that A does presuppose B. To avoid the contradiction, we must conclude that, with (a) as the definition of presupposition, if A presupposes B then ~A presupposes B. The proof is presented more formally below.

As shown below this proof (of (c(i)) under (a)) involves double

negation elimination. The proof of (c(ii)) under (a) involves double negation introduction, but is otherwise identical. In what follows I use '>' for 'implies' and '>>' for 'presupposes'.

(c(i))

1.	(A >> B) & ~(~A >> B)	counterassumption.
2.	~(~A >> B)	from 1 by modus ponens.
3.	~((~A > B) & (~~A > B))	from 2 and (a)-def of '>>'
4.	~((~A > B) & (A > B))	from 3 and double neg. elim.
5.	~(A >> B)	from 4 and (a)-def of '>>'.
6.	(A >> B) & ~(A >> B)	contradiction from 1 and 5.

Hence, under (a), 7i. (A >> B) > (~A >> B).

(c(ii))

1.	(~A >> B) & ~(A >> B)	counterassumption
2.	~(A >> B)	from 1 by modus ponens
3.	~((A > B) & (~A > B))	from 2 and (a)-def of '>>'.
4.	~((~~A > B) & (~A > B)	from 3 and double. neg. intro.
5.	~(~A >> B)	from 4 and (a)-def of '>>'.
6.	(~A >> B) & ~(~A >> B)	contradiction from 1 and 5.

Hence, under (a), 7ii. (~A >> B) > (A >> B).

Hence, (A >> B) iff (~A >> B) from 7i and 7ii.

(b) might not appear to be very perspicuous as a formulation of the SLDP (not that it was our intention to provide a more perspicuous formulation). It can however be made more perspicuous by observing that it allows us to say that, under the SLDP, presupposition is(df) that logical relation which, if it holds at all, holds both between A and B and between ~A and B.*

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* For illustrative purposes, this can be put to immediate use with an interesting result (which, in the light of the [continued over

I have suggested that a logical alternative to the SLDP is desirable. But it has just been proved that it is under the SLDP that A presupposes B if and only if ~A presupposes B. The most interesting consequence of this is that no logical definition of presupposition that is a genuine alternative to the SLDP can directly reconstruct the idea that negative sentences share the logical presuppositions of their affirmative counterparts. Any logical definition of presupposition that has this property is not logically distinct from the SLDP and hence not a genuine alternative to it.

This of course is precisely why the SLDP is felt to be so necessary to an adequate P-logic. But there is a hidden further

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Section 3 above, should perhaps not surprise us). Bergmann 1981 defines a two-dimensional logic (see Herzberger 1973 and elsewhere) which invokes the notions of truth-value and security value, but which provides valuations in terms of just two truth-values (0, 1) and COMBINATIONS of them on those two dimensions. He defines a concept of 'pre-implication' in terms of security. The details are not strictly relevant here. What is relevant is his observation that "It follows that both a is P and ~(a is P) pre-imply a exists and to this extent pre-implication is our formal regimentation of presupposition" (Bergmann 1981:33). Notice that, in saying this, Bergmann is attesting the Salient Presuppositional Intuition and, furthermore, evincing the assumption mentioned above that an adequate P-logic must embody direct expression of that intuition. He further comments: "As a consequence of the distribution of security values in the matrix for '~', we have implemented the presuppositional policy (C): For each sentence A, A and ~A presuppose exactly the same sentence" (Bergmann 1981: 33). Bergmann's acceptance of the mentioned assumption and his consequent incorporation of the SPI in his logic allow us to conclude, in the light of the above proof, that his two-dimensional logic is equivalent to the SLDP itself. This is perhaps less surprising than might appear, in view of the comments on Bochvar, Dummett and the ambiguity of negation in the preceding section. The fact that Bergmann's logic does not admit of truth value gaps as such indicates that the putative truth gaps of Strawsonian P-logic can, as it were, be recuperated as truth values by an equivalent 'two-dimensional' logic. As noted above, this result should trouble Strawson given that he intended his presupposition definition to induce a logical status, truthvaluelessness, that cannot by definition be naturalised/normalised as any kind of value. On the other hand, it is not clear that Bergmann has succeeded in going beyond what Bochvar and Dummett proposed, notwithstanding the new terms 'security value' and the replacement of multivalence by multidimensionality.

methodological assumption here - the promised generalisation of SA-5 above - which can be shown to be unwarranted and perhaps even unreasonable in pre-empting the possibility of EXPLAINING intuitive presuppositional phenomena such as the Salient Presuppositional Intuition and a Truth Gap Intuition. This generalised assumption can be expressed as follows:

> Standard Assumption 5 - generalised.
>
> That, under an intuitively/empirically adequate logical definition of presupposition every INTUITIVE PRESUPPOSITION of S must directly satisfy the logical definition of presupposition with respect to S.

As mentioned, this is a generalisation of the assumption that an intuitively adequate logical definition of presupposition must embody DIRECT EXPRESSION of the Salient Presuppositional Intuition that, when A presupposes B, B is implied both by A and its negation ~A. The above proof that direct expression of the SPI induces an equivalent definition of presupposition such that A presupposes B if and only if ~A presupposes B allows us to generalise that assumption as above, given that it is empirically the case that A and ~A do intuitively share their presuppositions (i.e. share their intuitive presuppositions).

Let me now show that this generalised assumption, reasonable though it might seem, is not methodologically necessary. It will be agreed that what we require of an intuitively/empirically adequate logical theory of presupposition is that both the attested range and the attested character of presuppositional intuitions follow from it, that the theory imply and thereby predict those intuitive phenomena. One way of placing this condition of adequacy on a P-theory is to adopt the methodological principle expressed as (a):

(a) B is predicted to be an INTUITIVE PRESUPPOSITION of A if and only if B directly satisfies the logical definition of presupposition with respect to A.

(a) is certainly SUFFICIENT as a condition of adequacy. But it is much stronger than is actually required; it is not in principle NECESSARY. By this I mean that there need be no requirement on a P-logic that it directly identifies as a LOGICAL PRESUPPOSITION everything that is INTUITED to be a presupposition provided, and it is an important (double) proviso, (i) that every logically defined presupposition is also an intuitive presupposition, AND (ii) that those intuitive presuppositions which are not directly defined as presuppositions by the definition are nevertheless predictable, and indeed predicted, from those that do.

A P-logic that met these conditions would predict all intuitive presuppositions. If a P-logic achieved this, it would be quite unnecessary, indeed otiose, to place the further requirement on it that all intuitive presuppositions be defined directly. I shall, therefore, abandon the biconditional (a) in favour of the weaker, conditional, (b):

(b) If B directly satisfies the logical definition of presupposition with respect to A then B is predicted to be an intuitive presupposition of A.

subject to the provisos stated above. This, it should be noted, is NOT a weakening of the conditions of intuitive adequacy on a P-logic. (b), together with the two provisos, is readily reconstructed as a bicondition of empirical adequacy.

Let me illustrate this in broad terms. I have shown that in order to develop a genuine alternative to the SLDP, we are required

to develop a P-definition that does not have the consequence that A and ~A share their logically defined presuppositions. But INTUITIVELY A and ~A do share their presuppositions; in other words, A and ~A do share their INTUITIVE presuppositions. Here, then, we have a case where the required logical theory cannot allow that A and ~A share their logically defined presuppositions but must predict that they share their INTUITIVE presuppositions.

I am conscious that, prior to a full explanation of this, I will be suspected of a sleight of hand in this or of engineering a terminological revolution in which the problems and the data are made to disappear in a puff of smoke. By addressing myself to the possibility of this charge, I can perhaps show the grounds on which the generalised assumption mentioned above might be regarded, not merely as unnecessary, but positively unreasonable.

What I am doing is distinguishing between the logical theory and the intuitive data that the theory is designed to predict and explain. The term 'intuitive presupposition' is not some novel technical term of art. In using it I refer to the intuitive data that needs to be predicted. By 'intuitive presupposition' I mean exactly what has always been meant by it in the logical context. For example, when I say that it is an empirical fact that when A intuitively presupposes B then both A and ~A intuitively imply B, I mean just that and am acknowledging a central intuitive datum that any logical theory of presupposition is required to handle. Again, that the falsity of an intuitive presupposition characteristically results in the truthvaluelessness of the sentence that intuitively presupposes it is an empirical fact that I accept on its normal interpretation and accept that a logical theory must predict.

Here I wish to raise the question of whether there is not a sense in which a theory in which every intuitive presupposition is

defined directly as a logical presupposition can be said NOT to PREDICT the intuitive phenomena. In incorporating direct expression of the Salient Presuppositional Intuition and a logically equivalent version of the Truth Gap Intuition, the SLDP cannot exactly be said to predict them; instead it actually DESCRIBES the phenomenon that would have to be PREDICTED by any EXPLANATION of it. In order to predict and explain something, one has to go beyond it and DESCRIBE something else. (This is why there is no end to explanation, as work over the years on syntactic constraints on transformations evidences.) But the SLDP does not go beyond the Salient Presuppositional Intuition or the Truth Gap Intuition, in the sense that it does not FOLLOW FROM the SLDP that when A presupposes B, B is implied by both A and ~A; nor does the Truth Gap Intuition FOLLOW FROM the SLDP. On the contrary, the SLDP CONSISTS precisely in the combined (and interrrelated) logical DESCRIPTION of these intuitive phenomena.

In conclusion, I have argued in this section that it is not necessary, as is generally supposed, to demand of a logical theory that every INTUITIVE presupposition it predicts also be directly identified by the logical definition. If the full character and the implications of this claim remain as yet unclear, I expect this to be remedied in Part Three.*

More tentatively, I have suggested that that requirement might

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* On intuition and presupposition, see Donnellan 1981. I take Stalnacker 1980:903 to be making a similar point to the one I am making in this section in connection with SA-5. He comments that Gazdar in particular "seems to take it for granted, incorrectly I believe, that the descriptive concept [of presupposition] which identifies the phenomena to be explained will co-incide with a theoretical concept which will provide a uniform explanation of them". He also notes, more generally, that the theories of presupposition criticised by Gazdar "themselves identify the descriptive with the theoretical problem"(ibid).

even be seen as unreasonable, as pre-empting the possibility of predicting and explaining the intuitive presuppositional phenomenon.

I have shown furthermore that it is a necessary condition on any genuine (logical) ALTERNATIVE to the SLDP that it does NOT meet this (unnecessarily strong) requirement. In a logical theory of presupposition, the intuitive presuppositional phenomenon (incl. SPI and TGI) cannot be directly expressed in, but must be derivable from, the logical definition of presupposition. In Part Two it will emerge in fact that direct expression of the Salient Presuppositional Intuition and the resultant logically equivalent direct expression of the intuitive Truth Gap phenomenon in a logical definition of presupposition can be seen as incompatible with the development of a two-valued logic with genuinely truthvalueless truth gaps.

PART TWO

THE DISTINCTION BETWEEN A TRIVALENT LOGIC AND A TWO-VALUED LOGIC WITH GAPS

This part provides a bridge between the discussion of the Standard theory of presupposition in Part One and the discussion of the Revised theory to be presented in Part Three. This part provides the theoretical framework in terms of which the major contention of the dissertation can be expressed: that the Standard theory and the Revised theory are distinguished in the most general conceptual terms by the fact that the Standard theory induces a trivalent logic whereas the Revised theory induces a gapped bivalent logic and is to be preferred at least on these grounds.

CHAPTER III

DEVELOPING THE DISTINCTION

1. Current status of the distinction.

If the SLDP were the only possible logical definition of presupposition - and, more generally, if there were only one possible logical definition of presupposition - then the intuitive distinction between modelling presupposition by means of a trivalent logic and modelling it by means of a two-valued logic with truth gaps would be logically empty. The distinction would merely be a matter of taste in the informal intuitive interpretation of the logic induced by that definition. It was argued in Part One that the treatment that P-logic has received rather clearly evinces the assumption that, if presupposition is to be given a logical definition, only one such definition is possible and the SLDP is it (SA-1). This section, then, reviews what I regard as one of the more unwelcome consequences of accepting SA-1.

It has been noted that Strawson 1950 informally conceives of the P-logic induced by his SLDP as two-valued with gaps, allowing for truthvaluelessness strictly interpreted. And I take it that, for him at least, it is NOT just a matter of taste to do so but is fundamental to his conception of presupposition. But Keenan 1972, 1973, using that same definition of presupposition, explicitly conceives of it as inducing a trivalent logic (see 1973:366 "{t, f, z} is a set of three truth values"). In developing his trivalent system, Keenan nevertheless alludes to the properties that might intuitively be associated with the notion of truth gap

(truthvaluelessness) in the informal presentation and interpretation of the third truth value. The actual wording of the definition of presupposition given in Keenan and Hull 1973:450 is "T is a logical presupposition of S just in case T is true in every state of affairs in which S is either true or false (so S is neither true nor false, BUT VACUOUS, whenever T is not true)" (my caps). Karttunen 1973 adopts this approach, too, consistently intruding the word 'indeterminate': "the third indeterminate truth value". See also the comment in Chap.II:3 above on Seuren's use of "undefined". These locutions concede the intuitive point, which is: that the logical notion of a third truth value is NOT in fact what is required in this context. But name-calling (cf. 'indeterminate', 'zero', 'vacuous', 'undefined' or '(truth (value)) gap') does not in itself achieve what IS required.

It is a measure of the lack of importance generally attached to the distinction that many writers are happy to allude to P-logic as being a three-valued logic in which the third truth value is a (truthvalueless) truth gap. This sounds like a contradiction - one we have become inured to, but a contradiction nonetheless. How can a logic be three-valued if the putative third truth value consists precisely in not being a truth value? The contradiction is exhibited explicitly in the following:

> "...three-valued logics in which truth gaps arise..."
> (Horn 1985:124)

> "....truth values: true, false, and truthvalueless, are assigned to formulae..."
> (Mioduszewska 1985:84)

> "Note that Table 2 [Van Fraassen's propositional truth table] is three-valued since... a truth value gap for a constituent sentence does not automatically make for a truth value gap in the complex expression."
> (Seuren 1984:347)

"To the extent that semantic presupposition is identified with the trivalent account the issue of whether to admit semantic truth gaps ceases to be a verbal one."

(Bergmann 1981:30)

"Like Russell I shall recognise only two truth values and shall not admit gaps. I will not explicate the concept of presupposition as trivalent theories do"

(Bergmann 1981:30)

"Since a sentence doesn't need to have a truth value (according to Strawson's definition) the usual two-valued propositional calculus cannot suffice for our purposes. Instead I propose the choice of Kleene's three-valued system."

(Hausser 1976:262)

The quotation from Seuren requires special care. In respect of the last two, it needs to be noted that it is precisely the truth gap interpretation of the third logical status that does not countenance more truth values than the two provided for in a classical logic.*

In making specific reference to these examples, I have picked out only those in which the contradiction is clearly evidenced in the space of a single quotation. It may be inferred, however, from the inconsistency in the use of terms that is evidenced in almost all writings on presuppositional logic (see for example Boer & Lycan 1976: 7 and 9, Woodruff 1970: 121 and 122, Kempson 1975: Ch. 5 passim, and, alas, Burton-Roberts 1986b.) An exception is Wilson 1975, who is consistent in assigning presuppositional logic a gapped

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* Hausser, incidentally, goes on to note that "Instead of Kleene's system we could as well have chosen Lukasiewicz' or Van Fraassen's" since these are equivalent (Hausser 1976:263). Lukasiewicz' system 1967a and b is self-avowedly trivalent. On Van Fraassen see below. As regards Kleene, in his propositional calculus, the connectives are explicitly characterised as (classical but) PARTIAL functions (i.e. functions that do not always yield a (truth) value for all arguments). See Kleene 1938: esp 153. To decribe Kleene's system as three-valued, then, is to misrepresent Kleene's intentions in respect of the distinction at issue.

interpretation.

Van Fraassen is alone among those who actually acknowledge any such distinction in taking it seriously. But he too uses that same (standard) definition of presupposition. However, in order to satisfy himself that he has indeed achieved his aim of developing a gapped rather than a trivalent logic, he resorts to embedding that definition within a supervaluational framework (see Van Fraassen 1966, 1968, 1969, 1970a and especially 1970b). Given the remark with which I opened this section, we should not be too surprised to find that there is little consensus on whether he succeeds in his objective or even on whether anything is actually at issue. For example, Herzberger 1970 simply ignores Van Fraassen's objective and, to Van Fraassen's dismay (1970b), represents supervaluational P-logic as being trivalent.

> "...its trivalence rests on a threefold partition of sentences into true, false and neither - a structural property independent of any further distinctions to be drawn between the absence of a standard truth value and the presence of a non-standard truth value." (Herzberger 1970:25)

Herzberger here expresses the idea that there is indeed nothing of substance at issue from a logical point of view. (And presumably it is in the light of the idea expressed in this quotation that we must interpret the passages quoted above, if they are not to yield the contradiction I have imputed to them.) The actual form in which Herzberger expresses the idea, however, makes it appear more reasonable than it is, for "absence of a standard truth value" is indeed quite compatible with "the presence of a non-standard truth value". But Van Fraassen can be seen as intending to model "absence of a standard truth value" only by implication from his intention to model something which is more precisely described as "absence of [any kind of] truth value". This latter notion is NOT intuitively compatible with "the presence of a non-standard truth value".

Gazdar 1979 is non-committal, both on the distinction itself and on the relation between Van Fraassen's work and the distinction. Having presented Keenan's trivalent logic, he comments "A somewhat less obvious solution, but one which retains a kind of bivalent semantics, is that of Van Fraassen" (91), pointing out immediately that "it can be regarded as a species of three-valued definition and can be shown to be inadequate for the same reasons as the latter"(91). Gazdar is right to be non-committal. Since we are all using the same definition of presupposition anyway, it is not clear that there is anything of logical substance to be decided. In a similar vein, Hausser too comments: "supervaluations are simply a more complex way of capturing Strawson's intuition" 1976:247.

In contrast to the general shoulder-shrugging considered so far, Seuren 1984 appears to acknowledge some kind of distinction between trivalent and gapped logic. To my knowledge, Seuren is the only writer who, while acknowledging some such distinction, would actually favour a multivalent, as against a gapped, conception of presuppositional logic. He provides no rationale for this preference, however. Consider, then, Seuren's reaction to supervaluations:

> "What Strawson had in mind was clearly not a system of supervaluations, but rather a system with two truth-values (i.e. bivalent) but with truth value gaps." (Seuren 1984:348)

This comment is at least surprising, for it carries the implication that any difference between the work of Strawson and that of Van Fraassen actually effects a distinction which is exactly the reverse of what Van Fraassen intended. It implies that a supervaluational framework turns a Strawsonian GAPPED logic into a Van Frassenian TRIVALENT logic. Seuren gives only the merest of indications as to the basis of this contention (it is given, in its entirety, in the

earlier quotation from Seuren). This issue is discussed in some detail in the next chapter.

I am tempted to say that I have painted a picture of conceptual disarray. And, on an intuitive level, this would seem justified. There clearly is an intuitive distinction between a trivalent logic and a gapped logic. Equally clearly, on that level, it is the latter, not the former, that is required if presuppositional logic to achieve descriptive adequacy in its application to natural language, as a reconstruction of the concept of statement-failure. So, if the intuitive distinction were a logical distinction, it would be crucial. In this connection, consider the following observation made by Lyons 1977:596-7:

> "Strawson's view of the proposition asserted in <u>The king of France is bald</u> is that it has no truth value. An alternative view, which proponents of so-called presuppositional logic have adopted, is that it does have a truth value: the somewhat peculiar truth value of neither true nor false distinct from the two truth values, true and false, of the standard propositional calculus."

Lyons is surely correct in noting that the notion of a third truth value is peculiar - and more than somewhat. This eminently perspicuous observation is seldom if ever made. And the reason for this should be clear from the preceding discussion. Compelling though the intuitive distinction is, either there is no corresponding logical distinction or, where a distinction has been made (cf Van Fraassen) it has either failed to convince or has appeared peripheral to matters that really concern us, matters such as the definition of presupposition. In such a circumstance, it may well be perfectly legitimate to take a third truth value as being the logical reconstruction of the intuitive truth GAP. This appears to be Quine's 1960:177 position. And on such an interpretation the idea of a third truth value ceases to be peculiar. A third truth

value is only peculiar on the assumption that the intuitive distinction has LOGICAL significance.

Perhaps the best way to summarise how things stand with respect to the distinction between a gapped and a trivalent logic would be to sound a Miltonic note: if the distinction is not in Chaos then it is in Limbo. The most charitable view of the situation described in this section would be that the Chaos is only apparent because the distinction is in fact in Limbo. The present investigation is in large part motivated by the assumption that the intuitive distinction is too important to be left there. Furthermore, as suggested at the outset of this section, that it is in Limbo is a direct consequence of the assumption that there can only be one logical definition of presupposition anyway. But it was the argument of Part I that this assumption is pernicious.

We thus require logical criteria for the distinction between a trivalent and a gapped logic. Development of such criteria will enable us to characterise the descriptions given above as being the contradictions they intuitively are (i.e. in taking the distinction out of logical Limbo, it will throw those descriptions into Chaos). It will lead us to ask of the SLDP whether it induces a trivalent logic or a two-valued logic with truth gaps - indeed, it will enable us to ASK that important question, make it coherent.

By the interrelated criteria I shall propose, it turns out that the SLDP unequivocally induces a three-valued logic (indeed the criteria would only be of interest if they had that result). Provided they are independently compelling enough, this in itself is an important result, having consequences already hinted at in Part One. But that result will in turn lead us to ask what a genuinely gapped logic would look like and we will thereby be encouraged to

entertain the idea of a genuine logical alternative to the Standard Logical Definition of Presupposition.

The attempt to develop criteria for making the distinction between a trivalent logic and a two-valued logic with truth gaps, then, is of value even as a heuristic: whether or not I succeed in convincing the reader that the intuitive distinction can indeed be reconstructed as a substantive logical distinction (and by the particular criteria I propose) it will have been of value in precipitating a novel definition of presupposition. But I believe and hope that the distinction as reconstructed here succeeds in its own terms for, in the light of the gapped logic that is demanded by the criteria, I expect to show that the several problems for presuppositional logic that are presented by the SLDP stem more or less directly from the fact that it induces a three-valued rather than a gapped logic. In this light, the specific problems attendant on the SLDP conception of presupposition are seen, not as local problems in an essentially correct/necessary logical modelling of presupposition in natural language, but as consequences of the more general and fundamental fact that the SLDP is not compatible with the generic KIND of logic that is required, and does not reconstruct the intuitive notion of truthvaluelessness required of a presuppositional logic for natural language.

2. A prima facie argument for the distinction.

In this section I consider one particular respect in which a prima facie preference for a gapped logic over a trivalent logic seems to me rather clear, namely the treatment of analyticity and analytic

contradiction, a matter dealt with by Katz 1972. For that matter, this issue provides strong independent grounds for preferring a gapped logic over a strictly bivalent semantics too. I shall therefore make it a three-way comparison. The overriding (and uncontroversial) assumption that informs the discussion is this: that it is desirable to be in a position to say that analytic tautologies are necessarily true and that analytic contradictions are necessarily false.

Chapter 1 of Wilson 1975 opens with the following statement:

> It is fairly uncontroversial that an adequate semantic description must enable us to state, for each of the infinite number of sentences in a language, whether it is analytically true, whether it is contradictory....

This is no trivial enterprise, as Linsky's 1972 devastating critique of Katz 1966 makes clear. I shall not address the range of issues that Linsky addresses, though the particular problem that does concern us here is not unrelated. It concerns sentences such as those in (1) and (2):

(1) The king of France is $\begin{cases} \text{a king} \\ \text{a monarch} \end{cases}$

(2) The king of France is not $\begin{cases} \text{a king} \\ \text{a monarch} \end{cases}$

In some sense, (1) is a set of analytic sentences and (2) a set of analytic contradictions.

Consider first the treatment these sentences receive in a non-presuppositional bivalent semantics of the sort envisaged by Wilson 1975 and others. If an analytic sentence is necessarily true and its negation necessarily false, then the sentences in (1) are not analytic and those in (2) are not contradictions in a non-presuppositional bivalent semantics. In such a semantics, there is,

it is claimed, just one kind of truth condition, strong entailment (supporting modus tollens).* In such terms (3), as a truth condition of (1):

(3) There is a king of France

is a strong entailment of (1). Since (3) is false, the putatively analytic sentences in (1) are in fact FALSE. Conversely, the apparently contradictory sentences in (2) are in fact TRUE.

Within such a semantics, then, the idea that an analytic sentence is a necessary truth and its negation a necessary falsehood must be abandoned (in which case we abandon the concepts of analyticity and analytic contradiction as semantic concepts). They could be retained only under an intolerable condition, that contingent facts about the world be taken into account in framing the definition of analyticity. The unhelpfulness of this latter suggestion points up the problem, which is: that no necessarily true sentence (and hence no analytic sentence) can have a contingent (synthetic) entailment. $

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*This cannot be, in fact. While the relation between a conjunction and its conjuncts is one of strong entailment, whatever the relation between a disjunction and its disjuncts (for example) may be, it is not strong entailment. In the present context, though, this is incidental.

$ A possible solution that might be considered (put to me privately and, I concede, en passant by a critic of presuppositional theories) is that one should say of the sentences in (1) that , if true, they are necessarily true - but they may be false. Now this SOUNDS contradictory. To show that it is IS contradictory we must show that the cases in (1) bear no relation to other cases of which such can be said without contradiction. Kripke 1972: 261 observes that Goldbach's Conjecture (that an even number greater than 2 must be the sum of of two prime numbers) constitutes just such a case. It may be true but, if so, it is necessarily (must be) true. That no contradiction is involved in saying this is shown by making the distinction (see Kripke 1972) between the epistemic concept of a prioricity and the alethic concept of necessity. (The "may" above was an epistemic modal; the "must" an alethic, or root, modal.) The modal status of Goldbach's Conjecture is that of non-a priori necessity. It is non-a priori because we cannot without labour KNOW (and in fact, DO not yet know) whether it is true or false; but that is independent of its necessity. It is necessarily [continued...

I am not aware of any proposed strictly bivalent solution to this problem for a non-presuppositional semantics. Nor have I seen a published acknowledgement of it by any proponent of such a semantics. On the contrary, the problem has been turned on its head and laid at the door of theories that define a semantic relation of presupposition. Wilson 1975:83 reads:

> "one wants a semantics in which [sentences like (39)] will be marked as necessary truths:
>
> (39) If your neighbour is a bachelor, then your neighbour is male.
>
> On the proposed presuppositional analysis, [sentences like (39)] will carry contingent presuppositions. But if a sentence carries a contingent presupposition, it cannot be a necessary truth. Hence the presuppositional analysis must be wrong."

Wilson's choice of example is not arbitrary, for a presuppositional and a non-presuppositional semantics are distinguished, inter alia, by the fact that presuppositions of clauses IN conditionals, show up as presuppositions OF the conditional, whereas entailments of clauses IN conditionals do not show up as entailments OF the conditional.

Nevertheless, this brisk little argument cannot be allowed to stand. If Wilson is claiming that her bivalent semantics indeed marks her (39) as a necessary truth, she is committed to an inconsistent semantics. This is so because the necessary truth of (39) commits us to the necessary truth of (4).

(4) The bachelor living next door is male.

But the circumstance in which a presuppositional semantics fails to

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true or necessarily false but, since it is non-a priori, we have yet to discover which. The case we are dealing with, however, is quite different. Under a bivalent semantics, (1) is CONTINGENTLY false. And anyway, the truth of an analytically true sentence is both a priori and necessary (cf. Kripke 1972:264).

assign truth to Wilson's (39) (and (4)) is exactly the circumstance (namely, the absence of neighbours, dwellers next door) in which Wilson's semantics assigns FALSITY to (4), just as it does to (1). With the result that, if we substitute (4) or (1) for Wilson's (39) and change each occurence of "presupposition(al)" to "entailment" in the above quote, we derive a statement which is AT LEAST as clearly true as Wilson's own statement.*

A similar reversal of the argument of this section is to be found in Kempson 1975:88 as part of her general argument against admitting a relation of presupposition into the semantics:

> "Notice...that a large body of contradictions will no longer be labelled as such since the conjunction of any sentence containing a definite noun phrase with its negative counterpart will not be necessarily false. It may be neither true nor false."

It seems reasonable to ask which is preferable: (a) an entailment-only semantics of the sort envisaged by Kempson, in which some contradictions are marked as true, or (b) a system in which those same sentences, while not marked false, are not marked true either. The question is not rhetorical. To answer it, though, we must acknowledge that it is vague: described as 'neither true nor false', the third logical status is compatible both with a (trivalent) value-interpretation and with a (gapped) valueless-interpretation. In this context the distinction is crucial. This, then, brings me to the comparison of trivalent and gapped logics.

On the TRIVALENT interpretation, with the third logical status

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*If, incidentally, we take the material implication of classical logic as providing the semantics of natural language conditionals (a controversial assumption, certainly, but it has been argued, by Grice 1967, and more recently by Smith 1983), on the assumption that there are no neighbours, it is the case that (39) comes out as true in a non-presuppositional semantics, but not as NECESSARILY true. (39) will be contingently true because, within such a semantics, both antecedent and consequent are CONTINGENTLY false.

taken as a (third) truth value, (1) is assigned a truth value and (2) is assigned a truth value. But the truth value assigned to (1) is not 'True' and that assigned to (2) is not 'False'. Oddly enough, they are assigned the SAME truth value, the peculiar '3' (whatever that might mean). The choice between an entailment-only bivalent semantics and the trivalent semantics would be a difficult one. In both, analytic sentences are assigned truth values other than true and analytic contradictions assigned values other than false. But, forced to choose, the incorrigible peculiarity of '3' disposes me to favour the entailment-only, bivalent horn of the dilemma.

By contrast, under a TWO-VALUED SYSTEM WITH (TRUTHVALUELESS) LOGICAL GAPS, neither (1) nor (2) is assigned a truth value at all. They are quite literally truthvalueless. And this permits the intuitive characterisation of analytic tautology and contradiction that we require. An analytic tautology is a sentence which, IF IT HAS A TRUTH VALUE AT ALL, always (necessarily) has the value TRUE. An analytic contradiction is a sentence which, IF IT HAS A TRUTH VALUE AT ALL, always (necessarily) has the value FALSE. The problem posed by the contingency of (3) is resolved on this analysis, for (3) is NOT an entailment of (1) and its falsity as a presupposition (in a gapped semantics) can only lead to (1) being devoid of a truth value, never to its falsity (and never, therefore, to the truth of (2)).

The answer to the non-rhetorical question posed above, then, seems clear: the presuppositional system is clearly to be preferred over the strictly bivalent non-presuppositional system, provided that 'neither true nor false' is strictly interpreted as 'truthvalueless'. And for this same reason a gapped system is to be preferred over trivalent one as a logical modelling of

presupposition.

This discussion has ASSUMED a logical distinction between a third truth value and a truth-value gap; we therefore need criteria for that distinction. Katz' 1972 discussion of the matter assumes that presupposition as modelled by his (effectively standard) concept of presupposition induces a two-valued logic with gaps, an assumption questioned in Ch. V. (I revisit analyticity at the end of the next section.)

3. Other prima facie aspects of the distinction.

The preceding sections will have made clear my assumption that, given a prima facie distinction between a three-valued logic and a two-valued logic with gaps, the latter is to be preferred. This section elucidates some pretheoretical assumptions about the nature of the distinction and why, prima facie, a gapped logic is to be preferred over a trivalent one. It is not simply a matter of preference, however. In the course of section I of this chapter, we considered several reactions to Van Fraassen's commitment to the distinction. I have the impression that what I take to be the rationale of Van Fraassen's intention to formulate a specifically gapped logic for a presuppositional language has not been generally understood. It appears to me that, independently of the formal implementation of that intention in terms of supervaluations, Van Fraassen's more general remarks suggest a conception of presupposition, presuppositional logic, and presuppositional language, in terms of which a gapped logic is seen to be not merely preferable but absolutely necessary to the coherent logical modelling of presupposition. Whether or not I am correct in my interpretation of Van Fraassen in this, this section develops in

prima facie terms that conception of a presuppositional system in terms of which the NECESSITY of the connection between presupposition and a two-valued system with gaps can be shown.

CONSERVATISM. I begin by considering an issue which might appear to be merely a matter of preference. I share the near universal assumption that the less a system departs from classical logic (CL) the better. Much of the antipathy to presuppositional logic (PL or P-logic) stems, it seems to me, from the assumed complexity of P-logic as against classical logic. P-logic is felt to be exotic, overly complex, counterintuitive, to have unpredictable and unmotivated properties in which the various babies of CL get thrown out with the bathwater or, as Seuren 1984:345 puts it, result in "loss of logic". Rescher 1969:129 comments "the further a system departs from orthodox logic... the more tenuous its claim to constitute a 'logic' will be." Van Fraassen 1969:69 would look askance at the "wonderful new 'logical' connectives" that appear to be suggested by such non-standard systems ("witches' grimoires") and Herzberger 1970:28 talks of "pitfalls and wild beasts" in connection with the trivalent connectives that are generally supposed to be necessitated by a presuppositional logic. We may sympathise with Gazdar in his reaction to Martin's 1975 development of a four-valued two-dimensional logic. He comments (1979b: 93) "In the absence of any external motivation for such a non-standard semantics it seems to me that this approach collapses under its own weight."

Prima facie, conservatism with respect to classical logic seems a clear, simple, and desirable goal. (Complications are discussed in the next chapter.) This in itself provides strong grounds for preferring a gapped logic over a trivalent one on the prima facie assumption that it is reasonable to expect a gapped system to be by its nature more conservative in any deviation from CL. The comments

of this and the next section are intended to make clear the rationale and nature of this expectation.

LOGICAL 'PATHOLOGY'. The concept of a third truth value is, as noted, "peculiar" in itself, but particularly so as a modelling of the consequence of presupposition failure. A logic that defines a logical status as a truth value countenances and legitimises it as an admissible logical status WITHIN the system . If, in a system, a particular logical status which is defined as the consequence of presupposition failure is admitted as a truth value, such a system may reasonably be held to fail in capturing what may be called the 'pathological' character of presupposition failure and the logical status that is held to be its consequence.

There is, it must be said, nothing 'pathological' in a third (truthvalueless) logical status in itself. I take it that , with the exception of propositions, all things have precisely this status. London buses and the orange blossom in the garden, since they are not logical objects, have this status. To suggest otherwise indeed would be to commit a category mistake, implying that they were the KIND of thing that COULD be bearers of truth. The third logical status is pathological only when it arises as the result of presupposition failure, for presupposition failure is specifically a kind of logical failure. Seen as the consequence of such failure the pathological character of the third logical status consists in the existence of non-logical (non-valuatable) objects within what is otherwise taken to be the proper domain of logic.

THE LOGICAL DOMAIN. This notion of the proper domain of logic is of some significance in this context. The distinction between a trivalent and a gapped logic with respect to classical bivalent logic can be expressed as lying in a difference in conception of the

proper domain of application of logic. There is no quarrel, between classical and gapped logic, that the former is complete and determinate and sound within its proper domain of application. But there is a quarrel over what constitutes that proper domain. As a gapped logic, P-logic seeks to restrict the application of CL within its proper domain, chart the limits of that domain and explore the interface between it and what properly lies beyond it. In the light of a P-logic so construed, classical logic is to be viewed as OVER-EXTENDED on its standard applications. (Van Fraassen 1966:487 "Classical valuations go beyond the model to which they belong.") Gapped logic charts the consequences of applying (a properly restricted) classical logic BEYOND its proper domain of application.

Prima facie, then, gapped logic is logically and metaphysically conservative with respect to standard logic. There is no conceptual novelty in the observation that, on the one hand, there are logical objects (propositions, with their orthodox truth values) and, on the other, non-logical objects. No change in this overall picture is effected in the conception of a gapped logic; but the interface between the domains is seen to be less clean, more ragged, when we acknowledge that false friends reside at that interface. (This, incidentally, is not to say that the interface is vague or fuzzy.)

By contrast trivalent and, more generally, multivalent systems represent an EXTENSION of classical logic, thereby incorporating the suggestion that CL is expressively UNDER-EXTENDED within its own proper domain, that the proper domain of logic extends beyond what can be expressed in classical logic. New logical statuses are created; novel conceptions of Truth are contemplated.

If there were just one general consideration whose significance

I would suggest had not been sufficiently appreciated in discussions of presupposition and the distinction between trivalent and gapped logic, it would be this: expressive capacity. A trivalent logic for natural language incorporates the claim that natural languages possess greater expressive capacity than that provided for in a classical standard logic. By contrast, a gapped logic for natural language incorporates the claim that natural languages are, in a quite particular way, more constrained in expressive capacity than is reflected in a standard classical logic. Most generally, in a gapped presuppositional logic, presupposition failure is not expressible. In a standard classical (strictly bivalent) logic, (non-trivial) presupposition failure is expressible; but this way of expressing it is, to say the least, infelicitous: what would otherwise be (non-trivial) presupposition failure is expressible in a standardly bivalent system precisely because, in such a system, no recognition is given to such a thing as (non-trivial) presupposition (failure) i.e. such a system is, in all non-trivial senses, NON-PRESUPPOSITIONAL. In a trivalent logic that purports to be (non-trivially) presuppositional, there are such things as presupposition and its failure, but presupposition failure IS expressible. Here perhaps we discern the first intimation of contradiction in a trivalent approach to the logic of presupposition.

A PARALLEL IN THE BORDERLINE CASE. From the remarks on pathology and domain, it will be apparent that I see a pretheoretical contradiction in the idea that a logical modelling of presupposition should take the form of a multivalent logic. In due course I shall argue that the contradiction is not merely pretheoretical. But in illustration of the pretheoretical notion, consider, as a parallel of what it is to model presupposition logically, what it would be to model vagueness in the semantics of a language. Consider a language like English which might be taken to include vague predicates. A

characteristic consequence of the inclusion of such predicates is that occasions will arise on which speakers will be disposed to withold both assent and dissent on the question of whether a given predicate is true of some individual, i.e. in such a language borderline cases and indeterminacy will arise.

One response to this might be to construct a fuzzy logic (perhaps of the sort recommended by Lakoff 1971, 1972). This reaction is odd, for logics of vagueness or fuzzy logics, are (presumably) neither vague nor fuzzy and can therefore be seen as banishing vagueness, fuzziness, indeterminacy, from the semantics of the language. For, how does the borderline case arise? It can only arise in a semantics that does not explicitly admit of such a thing. Borderline cases with respect to vague predicates arise only when a generally bi-polar (on-off) semantic structure, defining just the means of expression of assent and dissent (truth and falsity), confronts a gradient model. The borderline case appears to fall in the interstice between truth and falsity. But in a system that defines just truth and falsity, there IS no such interstice. And that is HOW the borderline case arises. To provide for apparent interstices by positing actual interstices does not and cannot answer the matter. For the borderline case arises, not in the logic, but in a kind of mismatch between the logic and the model to which it belongs. It arises in its application to the model. A semantics that makes positive provision for a particular borderline case is therefore self-defeating. The most we can do for borderline cases AS SUCH is make negative provision for them and I shall explain what I mean by this directly.

As an analogy of what it is to model presupposition logically, the indeterminacy of the borderline case is clearly very close and, as will become apparent shortly, suits my purpose rather well. Van

Fraassen 1970 in fact suggests (in response to Kearns 1970) that vagueness can itself be given a presuppositional analysis. However, in offering the borderline case by way of parallel, I am NOT suggesting that sentences suffering from presupposition failure are to be seen in any way as constituting logical borderline cases (and nor was Van Frassen).

NEGATIVE PROVISION IN A PARTIAL LOGIC. I now draw together the brief remarks on domain and the parallel of the borderline case. I am rejecting the approach which consists in the creation of a new, distinct, extended logic, positively going beyond classical logic by the inclusion of a multivalent/gradient definition of truth. I am insisting on the contrary that the orthodox (on-off) conception of truth remain unchanged, as not only adequate but necessary for our purpose.

Consider again the borderline case. Positive provision for the borderline case, I have suggested, is self-defeating. But this suggests that the borderline case as such is unrepresentable in the logic. Exactly so. For the borderline case LIES BEYOND THE SYSTEM THAT GIVES RISE TO IT. It is this idea that we wish to capture. Representation of such cases is indeed impossible if this is taken to consist in the positive provision for it within the system. Such provision merely changes and extends the system, and domesticates the case. But what is the alternative? What would it be to represent a case as lying beyond the system that gives rise to it? What we require is a system that gives rise to such cases without having a semantic structure that actually countenances them, that is, a semantic structure which, while it gives rise to a third logical status, is as it were 'innocent' of the fact that it does so. This I suggest would consist in the faithful representation of a bivalent, classical logic as being complete within its proper

domain of application but PARTIAL with respect to cases that fall outside that domain and to which it innocently gives rise when applied beyond its appropriate model. (Indeed, CL already is partial with respect to (certain) cases that fall outside its domain.) The partialness will consist in the failure of the logic in respect of just those cases and those cases are defined in the fact that the logic fails (to assign a truth value) in respect of them. (This is, in fact, the approach advocated by Klein 1982, for borderline cases. Rather than recognising degrees, Klein defines predicates that are classical (bivalent) but partial truth functions.)

This may sound unduly metaphorical and vague. It can, I believe, be made quite precise, though. In talking of a partial logic that is innocent of its own partialness I am referring to what Herzberger 1970 characterises as "semantic closure". The degree to which a language is semantically closed is a matter of its expressive capacity. I take it that the notion of a logic giving rise to a case that it cannot countenance (giving rise to a case of which it must remain innocent) is a matter of the expressive capacity of the logic in respect of such cases. I shall say no more about this here for it is treated in a certain amount of detail in the sections that follow.

ANALYTICITY REVISITED. In the light of the foregoing remarks, consider the earlier discussion of analyticity. This will prepare the ground for the sections that follow. It is, I suggest, not fortuitous that a solution to the problem of the modal status of analytic sentences should appear to present itself in terms of a specifically gapped presuppositional logic. Prototypically, ideally, an analytic sentence expresses a necessary truth and its negation expresses a contradiction. I suggest that, within a

gapped presuppositional system, we approach as close to this ideal as it is logically possible to do. That this is so, and just how close it is, can be seen when we acknowledge that the ideal concept of analyticity is itself a presuppositional concept, evincing a classical innocence with respect to presupposition failure.

What I mean by this can be expressed in two ways: (1) the ideal of analyticity as necessary truth is classical and presuppositional because it holds only on the PRESUPPOSITION of a fully determinate bivalent language (i.e. only on the presupposition that every sentence of the language bears one or other of two truth values); (2) the ideal of analyticity as necessary truth is classical and presuppositional because it holds only by restricting the domain of the definition of analyticity to the fully determinate sub-set of the sentences of the language.

This second way, in turn, needs explaining, perhaps. There are two ways of ensuring that the domain of the definition of analyticity is fully determinate: (a) by abandoning the concept of (non-trivial) presupposition altogether, (b) by PRESUPPOSING that the set of presuppositions of the sentences of the language is satisfied (i.e. by presupposing that all presuppositions are true!). Wilson, Kempson and others choose the former approach. In the systems they envisage it is actually the case that every sentence bears one of two truth values and a restriction to the subset of determinate sentences is set-theoretically vacuous because, in such systems, that subset is not proper, it is the whole language. These systems are specifically designed to countenance what would otherwise be "presupposition-failure": this is what makes them (i) non-presuppositional and (ii) fully (and bivalently) determinate. But, and this is the point, we have seen that in such fully determinate non-presuppositional systems an analytic sentence is NOT

a necessary truth.

As mentioned, the other way of ensuring that the domain of the definition of analyicity is fully determinate is by presupposing that no presupposition of the sentences of the language is false (this indeed may be what "innocence with respect to presupposition failure" amounts to). Since presupposition failure leads to less than full determinacy, the presupposition of the satisfaction of the presupposition set IS the presupposition of full determinacy. When I say that the ideal of analyticity as necessary truth PRESUPPOSES full bivalent determinacy, I mean that a definition of analyticity that entails that an analytic sentence is necessarily true is achieved, not (as we have seen) by getting rid of presuppositions, but by presupposing them: then cases of presupposition failure will LIE BEYOND the domain within which analyticity is defined. In other words, a language in which it is possible to place a non-vacuous restriction on the domain of the definition of analyticity, in such a way as to yield the result that an analytic sentence is a necessary truth, must be a language in which the subset of determinate sentences is a logically proper subset. But this means that it must be a language in which there in fact ARE indeterminate (unvalued) sentences. This is what a genuinely presuppositional logic would provide for in the form of a two valued logic with gaps.

4. Classical logic, semantic closure, and logical gaps.

In the preceding sections I have appealed to the concept of a classically bivalent logic, and will again in this and the next. At some point, then, a review of relevant features of classical logic is called for. This section begins with such a review.

I take it as uncontroversial that CL displays at least the properties enumerated below as (1)-(7). I shall not discuss the particular significance of any one property as I present it but will allow it to emerge in the discussion of this and the next two chapters.

(1) There is a set of precisely two TRUTH VALUES, interdefinable in terms of the operator defined in (2): {true, false}.

(2) There is precisely one unary function from one truth value to the other, NEGATION:

A	~A
T	F
F	T

(3) There is a Truth predicate 'T' such that [TA] if and only if [A]. I shall characterise this as an "equivalence" truth predicate and sometimes call it "Tarskian". (Concomitantly, a falsity predicate 'F' may be defined in terms of the truth of the negation, such that [FA] if and only if [~A].)

(4) There is a set {&, V, >, =} of truth-functional binary connectives, interdefinable in terms of '~':

(a) '&' (Conjunction), such that

$v[\&(p_1 \ldots p_n)]$ = true iff for all p_i, $1 \leqslant i \leqslant n$, $v[p_i]$ = true, and $v[\&(p_1 \ldots p_n)]$ = false iff for some p_i, $1 \leqslant i \leqslant n$, $v[p_i]$ = false. i.e

&	T	F
T	T	F
F	F	F

(b) 'V' (Disjunction) such that

$\upsilon[V(p_1 \ldots p_n)]$ = true iff for some p_i, $1 \leqslant i \leqslant n$, $\upsilon[p_i]$ = true, and $\upsilon[V(p_1 \ldots p_n)]$ = false iff for all p_i, $1 \leqslant i \leqslant n$ $\upsilon[p_i]$ = false. i.e.

V	T	F
T	T	T
F	T	F

(c) '>' (Material Implication) such that

$\upsilon[p > q]$ = true iff $\upsilon[p]$ = false or $\upsilon[q]$ = true, and $\upsilon[p > q]$ = false iff $\upsilon[p]$ = true and $\upsilon[q]$ = false.

i.e.

>	T	F
T	T	F
T	T	T

(d) '≡' (Material Equivalence) such that

$\upsilon[p \equiv q]$ = true iff $\upsilon[p] = \upsilon[q]$ = true or $\upsilon[p] = \upsilon[q]$ = false, and $\upsilon[p \equiv q]$ = false iff $\upsilon[p]$ = true (false) and $\upsilon[q]$ = false (true). i.e.

≡	T	F
T	T	F
F	F	T

(5) In virtue of the interdefinability of the connectives, the following logical equivalences are among the logical truths of the system:

	In terms of '&'		In terms of 'V'		In terms of '>"
'&'	$p \& q$	≡	$\sim(\sim p \vee \sim q)$	≡	$\sim(p > \sim q)$
'V'	$\sim(\sim p \& \sim q)$	≡	$p \vee q$	≡	$(\sim p) > q$
'>'	$\sim(p \& \sim q)$	≡	$(\sim p) \vee q$	≡	$p > q$

(6) There is, in addition, a set of interdefinable logical truths truth-functionally derivable by the operations defined in (4), including eg.

$$[p \vee \sim p], \quad \sim[p \,\&\, \sim p] \ldots.$$

(7) As is well-known, material implication constitutes something of a problem for natural language semantics both as regards whether it can be taken as giving the semantics of NL (*if...then*) conditionals and whether it can be taken to reconstruct the 'relevant' relation of NL semantic entailment. In respect of this latter issue, whether or not a natural language semantics that is supposed to be based on CL actually includes material implication (and I do not actually see that we can pick and choose in this matter, as though CL were a supermarket), we must insist at least that in a CL based NL semantics certain relevant aspects of material implication be preserved. This is achieved by insisting that an NL semantics based on CL define a relation of STRONG ENTAILMENT ('>') such that

A strongly entails B iff $v[B]$ = true wherever $v[A]$ = true, and $v[A]$ = false wherever $v[B]$ = false.

This has the consequence that the classical inferences of modus ponens and modus tollens are valid inferences in a CL based NL semantics.

I have made several more or less metaphorical (and overlapping) claims about a presuppositional logic: that it should display a particular type of 'semantic closure', evincing "innocence with respect to presupposition failure" i.e. that it does not and cannot countenance the possibility of a presupposition being false. I shall suggest that these requirements recommend standard classical

logic itself as the very model of what a genuinely presuppositional system should look like, that there are quite strict limits beyond which no genuinely presuppositional system can deviate from the model provided by CL without contradiction.

We can dispel any air of paradox these claims may have by reference to Herzberger's concept of semantic closure. The remainder of the section develops a general preliminary criterion for a two-valued logic with truthvalueless truth gaps in terms of the semantic closure exhibited by this CL system. The discussion continues in the next section by showing the connection between semantic closure and my notion of "innocence". I demonstrate that a genuinely presuppositional system will, by definition, evince "innocence with respect to presupposition failure".

The concept of semantic closure is invoked by Herzberger and van Fraassen in the context of a discussion of the Liar Paradox (in Martin (ed) 1970). "The guiding idea is that of a language capable of reflecting the principles and details of its own semantic structure" (Herzberger 1970: 26). Herzberger alludes to three degrees of semantic closure, which mark "increasing capacity in this regard". Degree of semantic closure, then, is in inverse proportion to expressive capacity. The first degree of semantic closure (which Herzberger calls "atomic closure") is marked by the inclusion of a Tarskian Truth predicate (Herzberger ibid). Under this degree of closure "given truth, falsity can be defined as the truth of the negation" (ibid). Herzberger observes that Tarski's truth predicate "presumed definability of all other semantic concepts in terms of truth, a reasonable presumption in bivalent frameworks" (27). Classical logic as described above, then, exhibits this first degree of semantic closure (cf. esp the (equivalence) truth predicate defined in (3), the unique negation of (2), the bivalence of (1) -

all of which imply each other.)

Now, were (counterfactually) the system described in (1)-(7) above to give rise to formulae having a third logical status, the system would, rather clearly, be "innocent" of such cases. By this I mean that nothing in the system is expressed, and no property defined, in terms of any logical status other than truth (and falsity - the truth of its unique negation). Clearly, and uncontroversially, this system does not countenance a third logical status. Such a status lies BEYOND, OUTSIDE this system. The system is SEMANTICALLY CLOSED with respect to such cases.

If the third logical status exists (and it does, independently of the concept of presupposition; cf. my earlier reference to London buses and orange blossom), that logical status is NOT a truth value in terms of THIS system. This again is uncontroversial. On this basis, then, I am suggesting that, were this very system ((1)-(7)) to give rise to sentences having the third logical status, it would, very precisely, be a two-valued logic with logical gaps.

Now of course this very system does NOT give rise to such cases - and no system that does can actually be identical to it; nevertheless the system provides one very general necessary condition to be met by one that does give rise to them. It seems clear in general terms that the formulation of a specifically two-valued system with truthvalueless logical gaps must consist in the incorporation of a relation of presupposition WITHIN THIS VERY SYSTEM. By this I mean that the development of a specifically gapped system requires a definition of presupposition that is consistent with, that does not override or interfere with, the independently established general character of that system, a definition that, in itself, exhibits the pre-established degree of semantic closure of the system as it stands. Clearly, it is not

enough, in the attempt to develop a two-valued gapped system, to attempt to retain the established features of the system as described in (1)-(7) above while adding a definition of presupposition that is inconsistent with the general character of those features. (The degree of semantic closure exhibited by a system is the degree of semantic closure exhibited by its 'least closed' semantic property.) This observation may seem obvious but it provides one of the bases of the ensuing critique of supervaluations. It also has the merit of pointing up the centrality of the presupposition-definition itself in discussion of the general character of presuppositional languages.

I shall take it that this discussion establishes in general terms a preliminary criterion for a two-valued logic with gaps. When I say 'general' and 'preliminary', I mean that it establishes specific criteria in principle, showing us where to look for specific criteria, perhaps even establishing a criterion for criteriality with respect to the distinction that is our concern.

5. Semantic closure, innocence, and the nature of presupposition.

Now I show that a specifically PRESUPPOSITIONAL system must exhibit the degree of semantic closure exhibited by the CL system described above. In the light of the preceding section, this will have the effect of showing that a presuppositional system must have exactly the same number of truth-values as the classical system outlined in (1)-(7) of the last section (namely two) and that therefore, if it is to give rise to formulae having a third logical status, that status is to be construed, not as a truth-value, but as a logical gap; that a presuppositional system will, by definition, be a system that is "innocent with respect to presupposition-failure" (since

such failure characteristically leads to the third logical status) and as such cannot countenance the possibility of presupposition failure without contradiction.

This can be shown by considering a language that does NOT exhibit the first degree of semantic closure. Herzberger (1970:27) observes

> "the second degree of semantic closure is marked by the emergence of two negation-like connectives, commonly known as choice- and exclusion-negation, which I prefer to have known as negation and complementation respectively:
>
> (8) Negation
>
> | P | ~P |
> |---|---|
> | T | F |
> | F | T |
> | 3 | 3 |
>
> (9) Complementation
>
> | P | ¬P |
> |---|---|
> | T | F |
> | F | T |
> | 3 | T |
>
> The former allows falsity to be defined in terms of truth and the latter allows both non-truth and indeterminacy to be defined in terms of truth as well.... Negation without complementation shields falsity and indeterminacy from one another, purchasing consistency on a note of expressive incompleteness" (Herzberger ibid.)

A brief illustration of the increased expressive capacity of a system exhibiting the second degree of semantic closure is provided by reference to the Liar Paradox, exemplified in (10):

(10) This sentence [(10)] is not true.

As Herzberger observes (1970:27) , under the first degree of closure (that displayed by the system outlined above) the logical status of (10) resists [non-contadictory] formulation. Under such semantic closure, 'not-true' = 'false', with the result that if (10) is true then it is false, and if it is false then it is true. The paradox arises on the presumption (the only presumption that is logically possible under this first degree of semantic closure) that every sentence of the system is either true or false.

Under the second degree of closure, however, the non-truth of (10) is formulable. This is because a language that includes complementation admits and countenances logical statuses other than truth and falsity and would assign sentence (10) just such a status. Since a sentence having the third logical status is not true, it is (by complementation) formulable (and true) that (10) is not true.*

Now, returning to our theme, if (a) presupposition failure characteristically leads to the presupposing sentence having the third logical status, and if (b) a language exhibiting the second degree of semantic closure includes the complementation operator, and if (c) the complementation operator affords an expressive capacity in respect of the third logical status (taking 3 into truth): then (d) a language exhibiting the second degree of semantic closure countenances the possibility of presupposition failure.

That (d) is a contradiction has, in fact, already been shown in Chapter II.3, where we concentrated on the methodological aspects of the matter. There it was shown that an enrichment of the expressive capacity of a language by the addition of a negation operator, one that admits presuppositions within its scope (i.e. a

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*Having mentioned the paradox, we should point out the relevance to the present discussion of the dilemma its presents. Within the language of (10) (call this 'L'), (10) is paradoxical. This would seem to commit us to a choice. We may soldier on with an inconsistent logic of L or, to avoid an inconsistent logic of L, we may eliminate the paradox in L. This may be satisfactory from a formal point of view (treating L as a purely formal language). But if L is taken to be a natural language imposing certain empirical constraints in terms of descriptive adequacy, this will not do. For L is a language in which (10) is paradoxical. The solution that consists in eliminating the paradox, then, cannot be a solution, for the language in which (10) is not paradoxical is not L. What we require is that the logic of L be such as to allow us to formulate (without contradiction) the semantic fact that the logical status of (10) in L resists non-contradictory formulation (is paradoxical) in L. According to Van Fraassen (1970b:59), Kearns (1970) attempts to resolve the problem where it is encountered, i.e. in L. But, as Kearns concedes (58), he can be seen as eliminating the paradox in L. Our problem is isomorphic with this.

"presupposition-cancelling negation") leads to a contradictory concept of presuppositional language. If a presuppositional language is one in which there is no negation expressive of presupposition failure, it cannot include a complementation operator, for that operator is a function from the logical status induced by presupposition-failure to truth; hence complementation affords an expressive capacity in respect of presupposition-failure. We derive a characterisation of presuppositional language as in (11):

> (11) A presuppositional language is such that, in it, there is no negation of S expressive of presupposition-failure in S but there is a negation of S that is expressive of such failure in S.

A presuppositional language is precisely one in which there is no negation of a sentence S in terms of which the falsity of a presupposition of S as such can be expressed. This proposition is clearly entailed by the standard logical definition of presupposition, though that definition goes beyond that.*

Inclusion of complementation (external, wide-scope, or radical, negation) within a (putatively presuppositional) language is only the most obvious illustration of the contradiction inherent in the idea of countenancing the possibility of presupposition failure as such (lack of 'innocence with respect to p-failure'). For example, it seems clear, if only from the fact that this extra negation is itself definable in terms of a truth predicate distinct from the Tarski predicate defined in (3) above, namely (12),

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*. In fact, what the SLDP more precisely entails is this: A presuppositional language is one which exhibits that degree of semantic closure at which the non-truth of certain sentences (those suffering from presupposition failure) is not expressible. This is slightly different from the formulation in the text, but in a way that cannot be elucidated properly until Part Three.

(12)	p	T'p ("T-prime")
	T	T
	F	F
	3	F

that a language that includes (12) rather than or in addition to (3) exhibits semantic closure only of the second degree and as such is not a candidate for being a genuine and noncontradictory presuppositional language. This particular example is of relevance in the next section, but further (and perhaps less obvious) examples will be adduced in due course.

In case this demonstration that a presuppositional language cannot countenance the possibility of presupposition failure without contradiction (equivalently: must be a two-valued logic with gaps or, again equivalently, exhibit the same degree of semantic closure as classical bivalent logic) smacks of sophistry, let me place the result in a broader intuitive context by talking briefly of speakers and the ACT of presupposing.

Not to countenance the possibility that a given proposition may be false, while being committed to the truth of that proposition, is precisely what it is to PRESUPPOSE a proposition. If, as I am suggesting, to presuppose P is to be committed to P while not countenancing the possibility of P's being false, it is a very natural (and significant) result that all necessary truths should be presupposed: it is precisely the necessary truths of a language to which its speakers are committed and whose possible falsity cannot be countenanced (in the language) without contradiction. They are not subject to debate in language; in Chomsky's words, they define "the limits to debate".

Trivial presuppositions apart, though, it is important, in

understanding this concept of not countenancing the possibility of the falsity of a proposition, to bear in mind that it is distinct from the concept of being committed to the truth of a proposition. The assertion of P entails commitment to the truth of P. But the assertion of P does countenance the possibility of the falsity of P. It is precisely this indeed that motivates the assertion of P (makes P worth asserting). In other words, the assertion of P countenances the possibility of the counterassertion, ~P. The assertion of P and the presupposition of P both effect commitment to the truth of P; but assertion and presupposition are distinguished in the fact that the former, but not the latter, countenances the possibility of P's being false.

If to ASSERT P is to be committed to P while COUNTENANCING the possibility of its falsity, and if to PRESUPPOSE P is to be committed to P while NOT COUNTENANCING the possibility of its falsity, it follows that it is impossible simultaneously (by means of one and the same sentence) both to assert and presuppose P. This complementation of (logical) assertion and presupposition is a well-recognised necessary feature of consistent presuppositional systems (cf. Keenan and Hull (1973:450, "Any consequence of a sentence is either an assertion or a presupposition but never both"). It follows from this, incidentally, that it is (logically) impossible to make a genuine assertion in the act of asserting a logically necessary truth. Keenan 1973 in fact has shown, in the light of the fact that necessary truths presuppose themselves, that such putative assertions in fact assert nothing beyond what they presuppose. (This is not of course to deny that some pragmatic utility may attach to such acts of assertion, a matter touched on by Grice 1975.)*

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*For Grice, the pragmatic utility lies in the conversational implicature that arises from the flouting of the Maxim "Be [cont'ed]

In making the above observations, incidentally, I must emphasise that I am not suggesting that a proposition P which is presupposed by some sentence Q, cannot be denied in the language at all. Clearly it can: the denial of P is ~P, and ~P is a sentence of the language. But the assertion of ~P does not constitute the denial of a PRESUPPOSITION P as such, *qua* presupposition: to regard it as such would necessitate the contradiction that P was a presupposition of its own denial (~P). Furthermore, the assertion of ~P countenances the falsity of P because, much more strongly, it effects commitment to ~P. But again, just because P may be presupposed by some other sentence Q, this does not mean that the assertion of ~P countenances the falsity of a presupposition as such. Again, this would necessitate viewing ~P as presupposing its own denial (P). (Since presupposition is a RELATION, the expressive constraint on a presuppositional language is RELATIVE.)

It follows, then, that the assertion of P and the denial of P (the counterassertion, ~P), since they both countenance the falsity of both P and ~P are both incompatible with the presupposition of P, and both incompatible with the presupposition of ~P. In short, you can neither assert nor deny what is presupposed by either the assertion or its denial. (This is what I mean in saying that you can't assert or deny a presupposition AS SUCH.) This all-square picture is connected with the interrelated incompatibility with a

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informative" since the assertion of a necessary truth is logically uninformative. There is a problem here, for the concept of information that is appealed to in the Maxim is not the LOGICAL (in the sense of alethic) concept of information, but is in itself an epistemic and pragmatic concept; it could not strictly be appealed to as a means of characterising the utterance of necessary truth as a flouting of conversational principles. It appears to me that the presuppositional analysis of the assertion of necessary truths provides a pre-condition for the implicaturial explanation of their pragmatic utility, since the presuppositional analysis provides us with independent logical grounds for regarding such assertions as constituting a transgression in the first place.

presuppositional system of both the extended negation (¬) and the non-Tarskian truth predicate T' in terms of which it is defined. A presuppositional language that includes T' and complementation, is precisely a language in which it is possible to assert/deny a proposition while presupposing it. Furthermore, I take it that these remarks rather precisely capture the intuition that, in order to bring a presupposition P of some sentence Q into question "you must do it explicitly" (Kiparský and Kiparsky 1971:351), by issuing the separate explicit denial of P itself, namely ~P; it cannot semantically be done by means of ~Q. The matter is dealt with in some detail in Part Three: Ch X.

In conclusion, and as already noted (Ch. 2.3), in order to demonstrate that a given putatively presuppositional system actually is presuppositional in the sense of evincing innocence with respect to P-failure by exhibiting the first degree of semantic closure, it is not sufficent simply to refrain from defining a negation that countenances P-failure or from defining a truth predicate in terms of which such a negation might be defined. Two further conditions must be satisfied: (i) The absence of such a truth predicate and negation must be compatible with, and indeed implied by, the rest of the system; (ii) An alternative, independently motivated, explicit, and non-semantic description of so-called "presupposition-cancellation" needs to adduced to demonstrate that such a negation (and a semantic ambiguity of NL negation) is not anyway required.

In this chapter, (1) I have attempted to articulate my preformal understanding of the distinction between trivalent and gapped bivalent logic; (2) I have argued that the distinction should be seen as logically reconstructable in terms of criteria deriving from a consideration of the properties of classical bivalent logic itself. Finally, and more strongly, (3) I have argued that we do

not have a choice between gapped presuppositional logic and trivalent presuppositional logic. I have suggested that the latter concept is not only intuitively incoherent but logically contradictory.

CHAPTER IV

CLASSICAL VALIDITY AND THE DISTINCTION.

In this chapter I investigate a more specific implication of the general view that a classically bivalent logic provides the model to which a presuppositional logic, viewed as a necessarily two-valued gapped logic, must conform. In particular, we confront a conceptual complication having to do with the status of classical validity as a criterion of the gapped interpretation of such a logic. I compare the positions of Van Fraassen and Seuren 1984 on the general question in section 1. This will lead to a more detailed consideration both of Seuren's system (S-84) and of Van Fraassen's supervaluational system in later sections.

As mentioned, I regard the general conception of a presuppositional language outlined in the last chapter as deriving in part from Van Fraassen. The technique of supervaluations, however, is criticised on the grounds that it fails properly to reconstruct that general conception.

1. Classical validity and its criterial status.

In the last chapter it was suggested that classical logic (CL) provided the best possible model for a two valued logic with gaps and, therefore, for a presuppositional logic. This led me to enumerate some relevant properties of CL. Clearly, in the search for criteria for the gapped conception of a presuppositional logic (PL), not all of these properties have the same status. Most

obviously, since the property mentioned under (1) - just two truth values - is the property for which we require criteria, it cannot itself be criterial.

Among the CL properties, a set of logical tautologies was alluded to as property (6). We should expect that a system of presuppositional logic (PL) - or any system - possessing the other six properties would automatically possess this property, retaining as valid the CL-valid formulae. In other words, we should expect that, in a specifically GAPPED PL, the CL-valid formulae are PL-valid. We shall see that this observation is radically equivocal.

It might appear that the expectation is entirely consistent with the basis on which Van Fraassen develops the technique of supervaluations. He takes it that the enterprise of developing a specifically two-valued logic with gaps (rather than a trivalent logic) CONSISTS IN the development of a system which, whilst giving rise to formulae with the third logical status, nevertheless retains as valid all the CL-valid formulae. Van Fraassen is also concerned that the classical orthodox connectives be retained, but this is (or should be) anyway implied by the adoption of classical validity as the criterion of a gapped logic. More on this in due course. But there is a general point here. The claim that retention of the orthodox connectives is anyway implied by Van Fraassen's focus on validity as THE relevant property in this context might suggest that such a focussing is merely Van Fraassen's way of rationalising (generalising over) the several criteria made available by the adoption of CL as providing a model for PL. It will become apparent in what follows however that, even if such rationalisation is possible, this is not Van Fraassen's intention.

Now compare Van Fraassen's adoption of CL-validity as THE criterion of the gapped interpretation with the rather different

assumption exhibited by the following remark of Seuren (1984:350):

> "[These tables are strictly bivalent since U is nothing but the absence of a truth value.] If one wishes to keep the whole of classical logic intact, it suffices to stipulate that the logic is limited to valued sentences only so that unvalued sentences play no part in the logic."

As will be apparent from my earlier discussion of analyticity, this line of thought seems eminently coherent and I am sympathetic to it. As indicated there, I do not regard Seuren's limiting stipulation (if it is required at all) as being at all outlandish; it is indeed a perfectly classical stipulation, for CL never has been concerned with anything other than what can be and is assigned a truth value.

Nevertheless, the positions of Van Fraassen and Seuren on the criterial status of CL-validity for a gapped logic are diametrically opposed. This is because Seuren's position depends upon giving criteria for the distinction between a trivalent logic and one with (truthvalueless) gaps INDEPENDENTLY OF AND PRIOR TO the question of whether the classically valid sentences are PL-valid. In sharp contrast, for Van Fraassen, whether the CL-valid sentences are PL-valid IS the criterion. We may schematise the two positions as follows:

Van Fraassen:	PL retains CL-validity	>	PL = 2V + G
Seuren 1984:	PL = 2V + G	>	PL retains CL-validity

Should it appear that I am over-emphasising the polarisation of the two positions, consider that their disparity entails a disparity on the very question of what it is to retain CL-validity in PL. Van Fraassen's position of taking validity as the criterion commits him to admitting as (logically) true EVERY SINGLE SENTENCE that would be logically true in a non-presuppositional classical logic, whether or not it would otherwise be assigned the third logical status in PL.

Only then is his criterion satisfied. I shall call this the INCLUSIVE CONCEPT OF CL-VALIDITY IN PL, and refer to the 'inclusive retention of CL-validity' in connection with it. The position expressed in the above quote from Seuren, on the other hand, commits its proponent to a different idea of what it is to retain CL-validity. On this interpretation, CL-validity is, as we have seen, maintained by defining validity only on the fully-determinate SUB-domain of sentences, with unvalued sentences excluded. Call this the EXCLUSIVE CONCEPT OF CL-VALIDITY IN PL. These disparities represent a fundamental conflict and must be resolved. This will involve deciding which of the two concepts - the inclusive or the exclusive - is desirable, possible, and/or most faithful to classical logic. This is the issue addressed in this chapter.

Departing briefly from the main theme, when we ask (as we must) what independent, prior criterion for the gapped interpretation of a P-logic is envisaged by Seuren, further fundamental disagreement becomes apparent. This involves the connectives (the matter was touched on in passing in Ch. III.1. - see the quotation from Seuren there). Commenting on Van Fraassen's system of connectives - of which I offer just conjunction here, as (1),

(1)

&	T	F	3
T	T	F	3
F	F	F	F
3	3	F	3

Seuren 1984:347 claims that such a conjunction is "really three-valued" since the third logical status (which Seuren confusingly calls a truth gap!) is not "infectious". What Seuren means by this is that '3' in a conjunct is not always inherited by the whole conjunction. For Seuren, the only conjunction in which '3' is legitimately to be seen as counting as a genuine (truthvalueless)

gap is that in (2)

(2)

&	T	F	3
T	T	F	3
F	F	F	3
3	3	3	3

- since there '3' in a conjunct IS "infectious", is invariably inherited by the conjunction.

- No rationale, explanation, or further discussion, of this implied ("infection") criterion is offered. I can only surmise that its rationale is Fregean - as discussed in Chapter I.3 above. Since that rationale was there shown to be problematic, I do not accept it as adequate, nor take that criterion to be valid. In the next section we shall anyway see en passant that, applied to Seuren's own system (which I label S-84), this "infection" criterion is without content for all practical purposes. The point is academic, however, since in the chapters that follow some rather strong considerations, incompatible with Seuren's infection criterion, will be brought to bear in support of Van Frassen's contention that only (1), not (2), can be construed as the proper extrapolation of classical conjunction and hence that only (1) is compatible with the gapped interpretation of a P-logic.

Let us now return to our theme. Two positions on the criterial status of CL-validity in PL have been presented, and both at least appear coherent and plausible. They are, however, incompatible. The plausibility of at least one of them must therefore be merely apparent. The rest of this chapter (though the next is also relevant) is devoted to showing that it is Van Fraassen's position that is untenable and in fact self-defeating, that CL-validity itself cannot, either in principle or practice, be taken as

criterial of the gapped interpretation of a PL system.

It might appear that, in rejecting Van Fraassen's position on the issue, I am working on assumptions shared by Seuren 1984. This is not the case. In fact Seuren's brief discussion of the EXCLUSIVE concept of validity that is implied by NOT taking validity as criterial is peripheral to his aims and interests. We have already noted that Seuren would seem to be unique in that, while acknowledging a distinction between gapped and multivalent systems, he advocates a system with at least THREE VALUES as being the most appropriate in the logical treatment of presupposition. He duly defines a system (here labelled "S-84") which he explicitly presents as being three valued (and, by his and my criterion of univocality vs. ambiguity of negation, it is indeed incompatible with a gapped interpretation).

Now Seuren 1984:362 claims of this trivalent system that it

> "has the property of deviating minimally from classical bivalent logic.... Any formula expressed in terms of [this system] which is classically valid is valid in this logic".

This not only indicates that (notwithstanding the remarks quoted earlier) Seuren is as interested as Van Fraassen in the INCLUSIVE retention of CL validity, but also serves to explain why Seuren should implicitly reject Van Frassen's adoption of CL-validity in PL as the criterion of a gapped logic. Seuren's claim clearly entails that the INCLUSIVE retention of CL validity is quite compatible with trivalence. Furthermore, I believe it is possible to show that Seuren is correct in this (but on grounds that he would either reject or find unwelcome). And if Seuren is correct in this, it follows (contra Van Fraassen) that retention of CL-validity in PL cannot be used as a criterion of the gapped interpretation of that PL. In fact, I will go further and argue that, by the general

criterion for a gapped logic, the INCLUSIVE retention of CL-validity in a PL system should be regarded as not merely compatible with the trivalence of the system but actually indicative of it.

To be more specific, I will show that INCLUSIVE retention of CL-validity in a PL system is in fact attainable only by departing quite radically from the model provided by CL in other respects - to an extent that is incompatible with construing the PL system as a two-valued system with (truthvalueless) gaps. To adopt CL-validity as the criterion of a gapped logic, then, is self-defeating. Related to this, I shall furthermore argue that whether or not the matter of validity is taken to have a bearing on the distinction between trivalent and gapped systems, the attempt to engineer the INCLUSIVE retention of CL-validity in PL is self-defeating in the more general sense that what I have been calling the inclusive concept of CL-validity in PL is anyway far from being recognisable as a classical concept of validity, that such PL-validity bears only an apparent and spurious relation to classical validity.

I am suggesting in short that Seuren's rejection of Van Fraassen's criterion (and therefore the enterprise of supervaluations) is right but for the wrong reasons: the inclusive retention of CL-validity in PL is compatible (and in fact more than merely compatible) with trivalence because (pace both authors) INCLUSIVE retention of CL-validity in PL does not in fact amount to a RETENTION of CL validity as such, but gives rise to a "wonderful new" species of validity. We must look elsewhere in the CL system for the criteria of a gapped logic and (passively) allow CL validity, on the EXCLUSIVE basis explained above, to follow from the fact of the system's satisfying those independent criteria. That I do not regard this as second best should be clear from the discussion of analyticity in the last chapter, but it should become

clearer as we see what is involved in the INCLUSIVE concepts of validity countenanced by Seuren (section 3) and Van Fraassen (sections 4 and 5).

2. Non-classical features of the system S-84.

Here we briefly examine Seuren's claim to have developed a MULTIVALENT system that "has the property of deviating minimally from classical bivalent logic". S-84 is presented (Seuren 1984:362) as follows (where as usual 1 = true and 2 = false):

(3)

¬A	=A	~A	A	& B 1	& B 2	& B 3	V B 1	V B 2	V B 3
2	2	2	1	1	2	3	1	1	1
1	2	1	2	2	2	3	1	2	2
1	1	3	3*	3	3	3	1	2*	3

The claim that S-84 deviates minimally from classical logic is based on the contention (361) that '¬' - which Seuren claims is the union of minimal (internal, '~') and radical (external, '=') negation - represents "the classical bivalent negation". "Any formula expressed in terms of these three operators ['¬', '&', and 'V' of S-84] which is classically valid is valid in this system" (362). (The asterisks are my own and will become relevant in due course.)

First, consider the claim that '¬' as defined is "classical bivalent negation". By Seuren's own "infection" criterion of what constitutes a bivalent operator, '¬' is NOT bivalent and hence not the negation of classical bivalent logic; under '¬', the third logical status is not "infectious" - i.e. when the third logical status is the argument of that function, it does not yield the third

logical status as value: '¬' maps 3 onto 1 (truth). By Seuren's "infection" criterion, the only negation that is a candidate for being the negation of classical bivalent logic is '~'. (In this one respect, incidentally, Seuren's "infection" criterion for bivalence in an operator is consistent with the viewpoint that is being developed in the present work - see the comments of ChapterII.3 above on the ambiguity of NL negation.) Furthermore, in connection with the ambiguity of natural language negation, it needs to be noted more generally that, since classical logic defines only one negation anyway, the possibility of stipulating which of several negation operators is to be taken as relevant for the purposes of establishing CL-validity in a system might reasonably strike one as being, in itself, exoticly non-classical.

Seuren needs to stipulate this, though. It is demonstrable that taking '~' as the relevant operator, little if any of CL is retained. For example, the classically valid [~(P & ~P)] would not be S-84-valid, nor would [P & ~P] be contradictory. And a host of other classically valid sentences. Furthermore, under '~', the connectives are not interdefinable, as they are in CL.* (In connection with the non-interdefinability (under '~') of the connectives, incidentally, note that the '&' of S-84 is "infectious" and hence bivalent and gapped, but that 'V' is not "infectious" and hence trivalent, assuming that we can take "infection" seriously in

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*This would have the consequence that the de Morgan equivalences of CL fail. In addition, since material implication standardly has equivalent definitions in terms of '&' ([~(P & ~Q)]) and in terms of 'V' ([(~P) V Q]) when they are equivalent, and since material equivalence is in turn standardly defined in terms of material implication ([(P>Q) & (Q>P)]), a pervasive duality would result from the non-interdefinability (under '~') of '&' and 'V', with two material implications and two material equivalences. On neither of the implications would such classically valid formulae as [P > PVQ] or [P&Q > PVQ] be valid. I do not demonstrate this here since taking '~' as the relevant negation for deciding such matters has anyway been ruled out by Seuren's stipulation.

assessing whether S-84 as a system is gapped or multivalant, which these results suggest is inadvisable).

If we now abide by the stipulation that classical validity and the general character of S-84 be assessed in terms of '¬', it is true that the system acquires a more orthodox look to it. Interestingly, '&' and 'V' do turn out to be interdefinable when '¬' is used; so the de Morgan equivalences are logical truths of S-84 as they are in CL. There is, though, a problem with the concept of equivalence itself, as we shall see immediately.

While S-84(¬) is more orthodox in appearance, this is I suggest more a matter of appearance than reality. Consider first that, if '¬' is supposed to be the negation of classical bivalent logic, we should expect to find that

(4) ¬¬A ≡ A

since (4) is a logical truth of CL. But, as inspection of the truth table for '¬' in (3) directly shows, (4) is not a logical truth of S-84:

(5) ¬	¬	A	A
t	f	t	t
f	t	f	f
f	t	3	3

That is, A is not false when ¬¬A is false and ¬¬A is not 3 when A is 3. Hence A and ¬¬A are not equivalent. In saying this, I am making a (classical) assumption about equivalence that is entirely reasonable given Seuren's claim that S-84 is specifically a multivalent system, one in which 3 is to be taken as a truth value distinct from true and false, and is furthermore a system that "deviates minimally from classical logic". On this assumption, I take (6) to be the only possible definition of material equivalence

that is consistent with, and coherent in terms of, classical logic. Its intuitive content is spelt out in (7).

(6)

≡	t	f	3
t	t	f	f
f	f	t	f
3	f	f	t

(7) Two formulae are materially equivalent if and only if they have the same truth value (however many truth values there may be).

This is the meaning of the equivalence defined in the review of CL the last Chapter. (See Van Fraassen's 1970b:64-5 reply to Herzberger 1970 in this connection.) (6) then is the equivalence I have appealed to in showing that double negation introduction/elimination is not an S-84 sanctioned inference (Notice that (6) by Seuren's "infection" criterion is strictly trivalent.)

Seuren does not provide the S-84 definition of equivalence. When we come to reconstruct the material equivalence that actually follows from (3), however, we find something rather different from (6). On the CL assumption that [A ≡ B] is to be defined in terms of material implication ([(A>B) & (B>A)]), we first define material implication in terms of [¬(A &¬B)] (or, equivalently in terms of [(¬A) V B]). This yields (8)

(8)

>	t	f	3
t	t	f	f
f	t	t	t
3	t	t	t

(on which, more in due course). Then [(A > B) & (B > A)] in turn gives (9)

(9)

≡	t	f	3
t	T	f	f
f	f	T	T
3	f	T	T

The equivalence defined in (9), incidentally, is odd: while it is throughgoingly trivalent by Seuren's "infection" criterion, this is contradicted by the fact that it actually states that 3 is non-distinct from (equivalent to) falsity. Reconsidering (5) above in the light of (9), we derive (10)

(10)

¬	¬	A	≡	A
t	f	t	T	t
f	t	f	T	f
f	t	T	T	3

namely, the result that, contrary to expectations (i.e. notwithstanding that when $v[A]=3$, $v[\neg\neg A]=F$), [¬¬A ≡ A] is after all a logical truth of S-84, just as it is in CL!

What should we make of this result? It is, I suggest, misleading. I suggest that, while it is true that (4) is a logical truth of both CL and S-84, this cannot be seen as implying that S-84 deviates minimally from CL: the formula [A ≡ B] simply does not mean the same thing in the two systems. Seuren's "material equivalence" (9) does not state what orthodox classical material equivalence states, picked out as (7) above. Furthermore, it is not clear what it does state and hence it is not clear whether or why we should want [¬¬A = A] à la S-84 as a logical truth.

The same general issue arises in connection with other logical

truths of S-84 (and the implication of S-84). All the following are valid in S-84 (I omit the proofs), as "they" are in CL.

(11) $A > A \vee B$

(12) $A \& B > A \vee B$

(13) $((A > B) \& \neg B) > \neg A$

(14) $\neg(A > B) \equiv \neg(\neg B > \neg A)$

But, again, it is a troublesome question as to what bearing this has on the claim that S-84 "has the property of deviating minimally from classical bivalent logic", retaining all the classically valid formulae. For example, in CL [A>B] is held to be false if and only if the falsity of A is NOT inferrable from the falsity of B. Now this is exactly what appears to be expressed in (14). Yet inspection of the truth tables in (3) reveals that, for example, P is not always false when [P V Q] is false: it may be 3. (I have asterisked the relevant cases in (3).) Thus the falsity of P is NOT inferrable from the falsity of [P V Q]. Nevertheless, by the implication in (8), (11) (which states that A implies [A V B]) is a logical truth of S-84! Hence, when we say that (11) (and (14) etc) is S-84-valid, this MEANS something different from what it means to say that (11) (and (14) etc) is CL-valid.

As a further illustration of the general point, consider (15):

(15)

A	&	¬	A
t	F	f	t
f	F	t	f
3	3	t	3

(15) shows that, in S-84, the value of [A & ¬A] is not always false, but can be 3. Since 3 is a third truth value in this system, that formula does not express a contradiction in S-84. In this respect, then, S-84 is straightforwardly non-classical and falsifies Seuren's

general claim. But in this connection S-84 has a more relevant and more surprising property. Given that [A & ¬A] is not an S-84 contradiction, it is surprising to find that the S-84 NEGATION of that formula, turns out to be a logical truth of S-84 (as "it" is of CL):

(16)	¬	(A	&	¬	A)
	T	t	f	f	t
	T	f	f	t	f
	T	3	3	t	3

Now in CL the formula in (16) is used to express the Law of Non-Contradiction. In S-84, however, it cannot be so interpreted, since the formula it negates, (15), is NOT a contradiction! Thus, (16) in S-84 does not mean what we might think it means - and, indeed it is not clear what it does mean, or why it should be valid.

Speaking generally, we must surely insist that validity in a system can only be taken as having a bearing on the relation between that system and classical logic, if validity in the system is interpretable as CL-validity. We must insist, furthermore, that it can only be taken as CL-validity if it is derived by the NORMAL application of the SAME operators that are to be found in CL itself. Not to insist on these points would be equivalent to allowing that someone who had sat on a plank beside a river and someone who had served as a director at a financial institution had done one and the same thing by virtue of the totally irrelevant fact that both could be described as having sat on the board at the bank.

I have shown the basis on which one attempt to maintain classical validity on an inclusive basis must be seen to fail.* I

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* I assume that Seuren 1984 gives an accurate foretaste of Seuren 1985, which I did not get sight of in time to digest and consider in the present work.

am of the opinion that, generally, the engineering involved in the enterprise (however ingenious) renders it self-defeating, in the sense that it transmogrifies what the enterprise seeks to achieve. In the next two sections we shall see how these general remarks apply, in a slightly different way, to the technique of supervaluations.

3. Supervaluations I: Excluded Middle and Bivalence.

We have seen that Van Fraassen adduces classical validity as the criterion of a gapped logic (as against a trivalent logic) and it is on these grounds he recommends the technique of supervaluations. But we have seen that adoption of validity as the criterion entails the same (i.e. inclusive) concept of Cl validity in PL as that countenanced by Seuren in connection with S-84. In this and the next section we consider the problems that the idea presents in the supervaluational framework.

Van Fraassen contends that, in a supervaluational system, all the logical truths of classical logic are (inclusively) retained - but the Principle of Bivalence is abandoned. In particular, some discussion (van Fraassen 1966: section VIII) is devoted to a demonstration that the Law of Excluded Middle (LEM) is retained notwithstanding the loss of the Principle of Bivalence (PB). This entails that LEM and PB are in fact distinct - and Van Fraassen is indeed at pains to show that they are. These interrelated contentions lie at the crux of the supervaluational enterprise; this section deals with the general issues and conceptual difficulties they give rise to and the next deals with the supervaluational mechanics of the matter.

I am of the opinion that Van Fraassen succeeds in showing that LEM and PB are indeed distinct. The difficulty lies, not in this,

but in the fact that classical logic is not and, as I intend to show, cannot be such as to allow of a SEPARATELY FORMULATED Principle of Bivalence, a Principle of Bivalence expressible AS SUCH. (For convenience I shall sometimes refer to a principle of bivalence expressed as such, by a formula distinct from that used to express LEM, as a DISTINCTIVE Principle of Bivalence.) The prima facie rationale of this view might be expressed as follows: CL cannot allow of a distinctive Principle of Bivalence precisely BECAUSE it is bivalent: expression of a Principle of Bivalence AS SUCH requires a degree of expressive capacity beyond that exhibited by a system that is semantically closed under bivalence. This contention that the PB is not expressible either directly or as such in any formula of a bivalent sysytem is what commands my agreement with Van Fraassen that the Principle of Bivalence is indeed NOT expressed by [P V ~P], where [P V ~P] is the standard expression of LEM and IS a (logically true) formula of the bivalent system CL, and hence commands agreement that PB and LEM are indeed distinct.

Instead, I wish to say that classical logic EVINCES the principle in BEING bivalent. And the classical Law of Excluded Middle itself can be used to demonstrate this. LEM evinces the PB so perspiciously, in fact, that it is often taken to express, or be, the PB itself. But, as Van Fraassen 1966:493 argues, LEM simply states that any CL formula of the form [P V ~P] is a logical truth of the system. But in expressing this it evinces the Principle of Bivalence. For why should [P V ~P] be a logical truth of CL? The simple answer is that, given the definitions of the functors that are included in CL, [P V ~P] comes out true for all assignments of truth value to P. BUT: [P V ~P] always comes out true only on the assumption that P is indeed always assigned a truth value and that the truth values assigned are drawn from the set {true, false}.

Since CL is semantically closed with respect to cases where this is NOT so, [P V ~P] is a logical truth of CL. It is this sense that LEM evinces the Principle of Bivalence. It evinces it in depending on it for its (logical) truth.

We may then ask whether a distinction between LEM and a DISTINCTIVE Principle of Bivalence can have any other consequence than to leave the former either false or without logical content. This requires us to ask: What formula, distinct from [P V ~P], would directly express PB? Van Fraassen argues that 'Either P is true or not-P is true' is NOT Excluded Middle but Bivalence (1966:495). Van Fraassen's distinctive Principle of Bivalence, then, is to be expressed by the formula [Tp V T~p] - see Van Fraassen 1969:495.

Excluded Middle	Bivalence
p V ~p	Tp V T~p

The problem is this. This latter formula is only distinct from [P V ~P] under one condition, that p and Tp are not equivalent (Tp $\neq$ p). For if Tp and p are equivalent, for any occurrence of Tp we may substitute p and likewise for T~p and ~p.* This would yield

(1) [Tp V T~p] = [p V ~p]

What truth predicate would then serve Van Fraassen's purpose of making a semantic distinction between the two formulae? No one is suggesting that the definition of the Truth predicate should be other than (2) when just truth and falsity are taken into account:

(2)

p	Tp
T	T
F	F

---

* See Kneale & Kneale 1961:46-8 for a useful discussion. van Fraassen is in fact replying to the Kneale's here. Their discussion is particularly good on the error underlying Aristotle's attempt to apply non-standard logic to statements of future contingency.

But in (2) p and Tp are equivalent. The only circumstance in which we may entertain the idea of the non-equivalence of p and Tp, then, is by taking explicit account of logical statuses other than truth and falsity. Two apparent possibilities present themselves:

(3)	p	Tp
	T	T
	F	F
	3	3

(4)	p	Tp
	T	T
	F	F
	3	F

Since Van Fraassen seeks to maintain a semantic distinction between [p V ~p] and [Tp V T~p], only (4) serves the purpose. This is because whatever interpretation we give to the third logical status (be it a third truth value or a logical gap) Tp and p remain resolutely equivalent in (3). Under a TRIVALENT interpretation, there are just three circumstances in which [Tp ≡ p] could be true and in (3) it is true in all those circumstances (see (3') below); under a TWO-VALUED GAP interpretation of (3), [Tp ≡ p] is again true in all (admissible) circumstances, for on this interpretation the third logical status is not an admissible status, lying outside the domain within which the interpretation of the operator is defined, with the result that the interpretation of the operator remains unchanged from that which it has in (2) itself (see (3'') below). Only in (4), then, are p and Tp demonstrably not equivalent (see (4') below).

(3')	p	≡	Tp
	T	T	T
	F	T	F
	3	T	3

(3'')	p	≡	Tp
	T	T	T
	F	T	F
	3	3	3

(4')	p	≡	Tp
	T	T	T
	F	T	F
	3	F	F

(4), then, is the Truth operator that Van Fraassen needs in order to express a Principle of Bivalence as such and separately

from LEM. It is in fact the (Bochvar) operator T' ('T-prime') defined in Chapter III.5; see (12) there. We have seen that it has an obvious but crucial property: it is, inter alia, a function from the third logical status to falsity. As such, it countenances the third logical status (permitting the definition of an additional ("presupposition cancelling") negation). I have suggested that a system that includes this truth operator, rather than the Tarskian Truth operator of classical logic, exhibits an expressive capacity in excess of that exhibited by a system semantically closed under bivalence - and thereby does not constitute a possible model for a two-valued logic with gaps or, therefore, for a coherent presuppositional logic.

It would thus appear that, within the conceptual framework developing in this dissertation at least, the Principle of Bivalence has a rather special status. It is not distinctively expressible in respect of any system of which it is a valid principle; conversely, it is not a valid principle of any system in which it is expressible distinctively and as such, independently of LEM. In short, a Principle of Bivalence is distinctively formulable only in a system that is at least trivalent. This result might appear paradoxical. However, we have seen in connection with The Liar that self-reference leads to paradox in a system that is semantically closed under bivalence. A bivalent system affording the distinctive means of expressing its own bivalence might be regarded as comparably self-referential.

The paradox that we have been led to contemplate here is related to a matter that arises in connection with the SLDP considered in more detail in Chapter V.4. As Wilson (1975:12) observes, under the SLDP, presupposition is conceived of, not merely as a truth condition, but as a CLASSICAL TRUTH-VALUE CONDITION (a

necessary condition of a sentence having a classical truth-value), as a TRUTH-OR-FALSITY CONDITION; in other words (cf. Karttunen 1973:169) as a BIVALENCE CONDITION. We may thus expect that definition of presupposition to prove problematic in much the same terms as the direct and distinctive expression of a Principle of Bivalence does. This at least is one way of viewing the problems that the SLDP anyway presents.

The discussion suggests that, since Fraassen's system is such as to precipitate a formulable distinction between LEM and PB, apparently allowing him to maintain the one without the other, it is not a system that is semantically closed under bivalence and hence not construable as a two-valued gapped logic. It is in part on these grounds that I view as self-defeating the (of necessity, inclusive) retention of CL-validity as criterial of the gapped interpretation. And I regard it as self-defeating on these grounds independently of my contention that the inclusive concept of validity is in itself problematic. I turn to this matter (in the section that follows) by examining the question of how LEM is maintained without PB in the supervaluational context.

I close this section by sounding a leitmotif of the general discussion. In (3'), (3''), and (4') we compared respectively a trivalent equivalence, a two-valued-gapped equivalence, and a trivalent non-equivalence between [Tp] and p. By Herzberger's definition of the first degree of semantic closure, the exclusion of any but the Tarskian truth operator (such that [Tp] $\equiv$ p) in CL meant that CL meets a necessary condition for such closure, as must any putative two-valued gapped logic. But as Herzberger's further comments suggest, and as (3') shows, this necessary condition is not sufficient. The inclusion of a Tarskian equivalence between [Tp] and p is still compatible with semantic closure of the second degree

and hence compatible with trivalence. In the search for criteria of the gapped interpretation, the inclusion of a Tarskian truth-equivalence is significant only if it is implied by the generally bivalent character of the system as a whole.

4. Supervaluations II: validity and truth-functionality.

> "Clearly the Law of Bivalence fails for supervaluations.... But all our interpretations agree that [p V ~p] is logically true"
>
> (Van Fraassen 1966:493)

How is this possible? I have argued that [p V ~p] evinces the PB in depending on it for its (logical) truth. To repeat our question: Should we not expect loss of the PB to leave LEM either false or without logical content? Generalising the question, for LEM is only an example, we may ask how it is possible that CL validity, which is precipitated as a consequence of the general CL property of semantic closure under bivalence, should be retained in a system that does NOT exhibit that degree of semantic closure?

There is a short simple answer to this question and an (equivalent) long and roundabout one. I shall take the latter first - because it provides an opportunity to give an overview of the technique of supervaluations.

Van Fraassen opens with a proposal that "the troublesome truth gaps be eliminated by simply assigning truth values to the offending statements in some arbitrary manner" (1966: 486). The precedent indirectly invoked for this move, strangely enough, is Russell:

> "Thus, IF IN A GIVEN LANGUAGE, THE KING OF FRANCE IS BALD MEANS WHAT RUSSELL SAID IT MEANT, then it has a truth value. And even if Strawson is correct concerning ordinary discourse, sentences that in his view are neither true nor false are "don't cares" for all ordinary purposes and there is therefore

no reason why we should not arbitrarily assign them some truth value."

(Van Fraassen 1966: 482. My caps)

It is not clear to me what Russell has to do with this: as Van Fraassen's own comment (in my caps) implies, the assignment of truth value in such cases was not, for Russell, arbitrary.

Van Fraassen does not specify how such sentences get assigned their arbitrary truth values, but since they ARE arbitrary, this presumably is arbitrary and not susceptible to formal explication. Now a CLASSICAL VALUATION is characterised as in (1):

(1) A classical valuation over a model is a function v that assigns T or F to each statement, subject to:

a. if A is an ATOMIC statement containing no nonreferring names, then $v(A)$ is determined by the model, in the indicated manner, and

b. If A is a COMPLEX statement, then $v(A)$ is determined by what v assigns to the simpler statements, in the usual manner.

This does not cover cases of atomic statements that do contain nonreferring names (i.e. suffer from p-failure) but, by the opening proposal, if A is such a statement, A is assigned T or F but this is not determined by the model.

What distinguishes atomic sentences with no nonreferring name from those with nonreferring names is this: since the truth (falsity) of the former is determined by the model (i.e. non-arbitrarily), and on the assumption that the model is consistent, all classical valuations over the model will agree, assigning the SAME truth value to each such sentence. In the case of sentences with non-referring names, by contrast, since in a "classical valuation" each such atomic sentence is assigned a truth value in an arbitrary manner (i.e. not determined by the model) it follows that there will be more than one possible "classical valuation" in such

cases, one arbitrarily assigning truth and another arbitrarily assigning falsity. Thus a sentence with NO non-referring name will be assigned the SAME truth value in each classical valuation over the model, while a sentence WITH a nonreferring name will be assigned DIFFERENT truth values in each "classical valuation".

My scare quotes are intended to draw attention to the question of whether a valuation that assigns truth (falsity) in an arbitrary manner can properly be termed a 'classical' valuation - and even whether it IS a valuation. The question seems reasonable in itself, but notice anyway that the characterisation of 'classical valuation' given in (1) above only admits of assignments to atomic sentences of truth value DETERMINED BY THE MODEL i.e. non-arbitrary assignments of truth value. By Van Frassen's own characterisation of 'classical valuation', then, a 'valuation over a model' that does not agree with (i.e. is not identical with) every other possible 'valuation over that model' is not a classical valuation. It follows from this that there can only be one genuinely classical valuation over a model anyway. This is not mere pedantry; for it is clear that DIFFERENCE in the truth value assigned to a particular atomic sentence by 'different classical valuations' (resulting from the arbitrariness of each such assignment) is simply an encoding of the arbitrariness of the truth value assigned, which is in turn an encoding of what would otherwise have been the assignment of a third logical status.

The DECODING is achieved by supervaluation over the 'classical valuations' over the model:

(2) A SUPERVALUATION OVER A MODEL is a function that assigns T (F) exactly to those statements assigned T(F) by ALL the classical valuations over that model.

[my emphasis on 'all' - NBR]

The supervaluation fails to assign truth or falsity to a sentence if and only if the sentence is not assigned the same truth value by all classical valuations. Under supervaluation, then, arbitrary truth (encoded in the form of difference in truth value across 'classical valuations) shows up (again?) in its true colours, as the third logical status. The point of the encoding is that, at the stage where questions of logical truth arise, every atomic sentence and hence every complex sentence has, in one way or another (classically or arbitrarily) been assigned one of the values {true, false}.

For illustrative purposes consider Van Frassen's own example language and model. Let the language contain the names a and b and consist of just one predicate F. Let the model define a referent for a but NOT b and let a be in the extension of F. Then there are two 'classical valuations' (cv1 and cv2) and a supervaluation (s), partially represented in (3a) - but continued in (3b) and (3c) below:

(3a)	cv1	cv2	s
Fa	T	T	T
Fb	T	F	-

From (1b) we gathered that if A is not atomic, then σ(A) is determined by what σ assigns to the simpler statements "in the usual manner". We gathered, in other words, that all operators have their standard CL interpretations. So, to continue:

(3b)	cv1	cv2	s
~Fa	F	F	F
~Fb	F	T	-

On this basis, furthermore, although the values assigned to Fb and to ~Fb are arbitrary (though not, of course, with respect to each other), and hence differ in each 'classical valuation', we find that

there is no 'classical valuation' in which one or other of Fb and ~Fb is not assigned truth; with the result that [Fb V ~Fb] will be true in each classical valuation over that model and hence true in the supervaluation over the model:

(3c)	cv1	cv2	s
Fb V ~Fb	T	T	T

Now validity in CL is defined by (4):

(4) A statement is CL-TRUE(FALSE) if and only if it is assigned T(F) by all classical valuations over ALL models.

and validity in SL is defined by (5):

(5) A statement is SL-TRUE if and only if it is assigned T by ALL supervaluations.

i.e. a statement is SL-true iff it is assigned T by the supervaluations over all classical valuations over all models. Clearly, since the supervaluation assigns truth to [Fb V ~Fb] in this model, all supervaluations will do so. Under such treatment, then, "the set of CL-truths and the set of SL-truths are exactly the same!" (Van Fraassen 1966: 487). In particular, of course, as we saw in (3c), any formula of the form [A V ~A] comes out as a logical truth of SL. Hence the Law of Excluded Middle is (inclusively) retained.

The technique of supervaluations is generally regarded as ingenious and elegant and I have no wish to play the ghost at the feast in this. But I have some conceptual problems here and I am, as indicated, sceptical. The main problem can be expressed by considering the short simple answer to the question posed earlier: how come LEM and classical validity in general are (inclusively) retained in SL notwithstanding the loss of Bivalence? The short

answer may have been obscured in the long one.

It is intriguing that Van Fraassen should allude to the truth value assignment of complex sentences as being derived "in the usual way" from that assigned to their atomic constituents. What Van Fraassen rather coyly calls "the usual way" is: truth-functionally. In CL [A V ~A] derives its logical truth as a compositional function of the value assigned to A, on the assumption that A is assigned a truth value. But it is precisely truth-functionality that is abandoned in SL.

This is clearest at the supervaluational level, since there [A V ~A] is true even where neither A nor ~A is true. Furthermore, once arbitrary truth is recognised for what it is, as an encoding of the third logical status, even at the level of classical valuation we find ourselves in an interpretative dilemma: EITHER (1) we must, contrary to appearances, view truth-functionality as in fact abandoned - on the grounds that the derivation of logical truths from ARBITRARILY ASSIGNED truth values is not a legitimate and genuine application of the principle of truth-functionality (Thomason (1972: fn 13) very relevantly observes "Arbitrary truth isn't truth, any more than dry ice is ice"); OR (2) if we allow that this is a genuine application of truth-functionality, we must view any 'logical truth' truthfunctionally derived from arbitrarily assigned truth values as arbitrary itself. Either way, it seems to me, validity in SL (and its putatively CL subsystem) does not mean at all the same thing, does not have the same rationale, as it does in a genuinely classical logic. The point has been made by Herzberger (1970: 28) "The number of connectives is not increased but THEIR INTERPRETATION IS ALTERED. Connectives are no longer truthfunctional in the usual sense" (my caps).

I suggested earlier that loss of Bivalence should leave LEM either false or, for all purposes of its inclusive retention, without logical content. Van Fraassen has, I suggest, chosen the latter option, retaining LEM at the cost of emptying it of its (classical) content. In illustration of this, consider that it is by virtue of truth-functionality that, from the truth of [A V B] we may infer B from ~A and A from ~B (cf. the classical inference of Modus Tollendo Ponens); that is, the truth of [A V B] guarantees (truthfunctionally) that at least one of A and B is true. With the loss of truth-functionality this is not guaranteed and hence the inference is not valid, for, when A is P and B is ~P, [A V B] may be true without either A or B being true. More strangely yet, the validity of that inference is a function of the fact that (6)

$$(6) \quad (A \vee B) > ((\sim A > B) \ \& \ (\sim B > A))$$

is a logical truth of CL. We have been asked to accept that any logical truth of CL is a logical truth of SL. So (6) is a logical truth of SL. But the inference sanctioned by the logical truth of (6) is not a valid inference in SL!

It appears to me that Van Fraassen's approach to CL-validity in PL, while not identical, is comparable to Seuren's. Whereas Seuren simply changes the meaning of the relevant formulae, Van Fraassen treats them as idioms (where the meaning of an idiom is not a compositional function of those of its parts). But it is more complex than this. For in the context of idiomaticity, an abandonment of compositionality is forced by the distinct non-compositional meaning of the idiom. But Van Fraassen treats the relevant formulae as idioms while committed to maintaining that his idiomatic use of the expression means exactly what it means on its non-idiomatic interpretation!

How important is truth-functionality (a) in itself and (b) in the present context? On (a), Thomason 1972: 231 has this to say:

> "There is very little evidence, however, that truth functionality is anything but a superficial feature of two-valued logic. All the interesting generalisations of this logic (those taking tense into account for instance, or various modalities, or even quantification over individuals) are non truth-functional. On the other hand, the set of valid formulas of two valued logic is hardly a superficial feature. To me this suggests that a theory of truth value gaps that preserves the valid formulas is a more faithful generalisation [of two-valued logic] than one preserving truth functionality. Van Fraassen's method supervaluations provides just such a method."

It will be clear by now that I disagree with this - to an extent that makes it appear to me almost incoherent. No enumeration of non truthfunctional aspects of two-valued logic can serve to show that truthfunctionality, where it shows up, is superficial. Furthermore, Thomason's own concession that validity is a "far from superficial" feature of two-valued logic and in fact, as he later observes, is "crucial", simply contradicts his assertion that all the interesting generalisations of two-valued logic are non truth-functional, since validity in a two valued logic IS, as a simple matter of fact, truthfunctional. In addition, in his listing of non truthfunctional generalisations of two valued logic, Thomason appears to ignore certain well-established systematic correlations between the truthfunctional connectives, the quantifiers, and the modalities (this is touched on again in Chapter VIII). Finally, it seems to me that Thomason's complaisance in the loss of truth-functionality is inconsistent with his earlier repudiation of arbitrary truth (alluded to above); for, as noted, the logical truth of [P V ~P] in SL can be no less arbitrary than the arbitrary truth from which (by spurious truthfunctionality) it "derives".

Now (b). How important is this loss of truth-functionality in the context of a consideration of the criteria for a gapped bivalent logic? At the outset of this chapter I suggested that Van

Fraassen's adoption of validity as the criterion might prima facie be construed as a rationalisation of the several criteria suggested by the properties of CL enumerated in the last chapter. The suggestion has been shown to be rather wide of the mark. Validity appears to offer itself for this role because CL validity is NOT STIPULATED, BUT OBSERVED as a consequence of the general character of the CL system and its bivalence. By contrast, in SL, validity is not observed, it is stipulated (it does not ARISE, it is IMPOSED). From the point of view being developed in this work, the stipulation is self-defeating on at least two counts: (a) it precipitates a species of validity that is only doubtfully construable as classical validity; (b) it represents, not a rationalisation of the other possible criteria, but a by-passing of them. In the next chapter we shall see the relevance of this latter point to the criterial status of the definition of presupposition itself. For the definition of presupposition that Van Fraassen adopts is the SLDP and the next chapter is devoted to the demonstration that the SLDP induces, not a gapped bivalent logic, but a trivalent logic.

POSTSCRIPT. Consider briefly the intuitive natural language implications of SL validity.

(7) Either the king of France is bald or he isn't.

If a speaker of this sentence is committed to anything, it is to the truth of the false presupposition that there is a king of France. I cannot think of a more manifest means of committing oneself just to that presupposition. Yet in SL (7) is (logically) true. In SL therefore the speaker is not committed to the existence of a French king (while nevetheless being committed to "his" being bald or otherwise!). And indeed the truth of (7) is, by the SLDP (which Van Fraassen takes to be the definition of presupposition), incompatible

with its having a false presupposition. This is the kind of thing we are obliged to countenance in the attempted inclusive retention of CL validity. By contrast, on the EXCLUSIVE approach to CL validity in PL that is favoured here, not only is (7) (exclusively) retained as a logical tautology (if it had a truth value, it would be necessarily true) but the speaker is made to stick to his guns in the matter of the failed presupposition. I return to the example (and its negation) in Chapter X.

CHAPTER V

STANDARD PRESUPPOSITION AND THE DISTINCTION

This chapter presents the argument that the Standard Logical Definition of Presupposition (SLDP) is not compatible with interpreting the third logical status to which it gives rise as a logical gap and must therefore be regarded as inducing the trivalence of any system that includes it. In terms of the general conception of presupposition developed here, then, a system incorporating standard presupposition is only inappropriately to be regarded as a specifically PRESUPPOSITIONAL system. The argument is introduced by way of a review of how matters now stand with regard to the criteria for the gapped interpretation of the third logical status.

1. A review of the criteria.

Seven properties of classical logic have been enumerated as providing potential criteria for the gapped interpretation of the third logical status in systems that give rise to it. I repeat them here in abbreviated form:

I. Just two truth values.

II. A unique truth predicate (T) such that [Tp] if and only if [p].

III. A unique negation taking just truth into falsity and vice versa.

IV. A certain set of binary connectives (specifically as defined in Ch. III.4.) whose interdefinability gives rise to

V. A certain set of logical equivalences.

VI. A relation of entailment that supports modus tollens (i.e. strong entailment).

VII. A certain set of logical tautologies (valid formulae) - whose interpretation and truth is wholly determined by the operation of the truthfunctional connectives that constitute the set in IV.

Here I review the status of each of these properties of CL as potential criteria for our distinction. Since I and VII are to be dismissed as criteria, I consider them first.

I. As noted, this has no potential as a criterion. To demonstrate that a system giving rise to formulae with the third logical status is in fact two-valued with gaps is to demonstrate that it has this very property, and hence presupposes criteria that are independent of it.

VII. In the last chapter it was argued that CL validity could only be maintained AS SUCH on an exclusive basis. As already noted, the retention of CL validity on this basis presupposes independent and logically prior criteria for the system to be interpreted as gapped rather than three-valued. On this basis, then, VII cannot be employed as a criterion, for the same reason as property I cannot.

II and III need to be taken together. In itself II, the inclusion of a unique truth predicate T such that [Tp] iff [p], is equivocal in respect of the distinction. Truth as in

Tp	p
T	T
F	F
3	3

is compatible with satisfaction of the criterion but (depending on the definition of equivalence) is also compatible with trivalence. Rather II has to be seen in terms of III, the inclusion of a unique negation taking just truth into falsity and vice versa. It is in the light of III that II is seen to be criterial, for the unique inclusion of such a truth predicate has the consequence that there can only be one negation, which, in taking just truth (falsity) into falsity (truth), does not countenance the third logical status nor, therefore, presupposition-failure (and is thus "presupposition-preserving"). Now III is centrally criterial - and so is II, but derivatively from III.

However, while III (and by implication II) is central, it provides a negative and external criterion in a sense already explained. A demonstration that III is satisfied is provided, not simply by refraining from the definition of a negation that countenances what would otherwise be presupposition-failure, but by showing, (a) that the absence of such a negation is implied by the general bivalence of the system as a whole and (b), in terms external to the system, that no such negation is required on empirical grounds anyway. This must take the form of an independently motivated non-semantic account of the phenomena that such a negation is supposed to handle. This takes us beyond the system itself and I postpone discussion of the matter until Part Three.

This leaves IV, V, and VI. V itself is implied by IV (when it is not implied by IV, as in Seuren's system, it is indeed compatible

with trivalence - a further demonstration of this is given below).* I shall therefore say little more about V here (it becomes important in Part Three). The connection between IV and VI is perhaps less obvious. In fact they can be shown to imply each other, as we shall see immediately in examining what might constitute genuine classical orthodoxy in a connective.

I thus propose IV and VI as the (mutually implied) positive, internally demonstrable, criteria of the gapped interpretation of a system giving rise to sentences having the third logical status. That is, a logical system that includes a relation of presupposition, where presupposition failure is to be construed as resulting in the LACK of truth value in the presupposing sentence, must be one that is compatible with the retention of the classical connectives (strictly interpreted) and retention of a relation of strong entailment. I discuss the significance of these interrelated criteria in the section that follows.

2. The inheritance of falsity in (classical) logic.

I seem to remember having read somewhere that logic is about the inheritance of truth. Although this can be interpreted more generally to mean the inheritance of truth VALUE, it suits my purpose better to take it in the narrower sense, and point up the sense in which logic - orthodox classical logic, that is - is much more about the inheritance of falsity.

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* In saying that V is not implied by IV in S-84, I mean that Seuren retains an apparently classical interdefinability of the connectives but the connectives involved are not the classical connectives. This has already been shown in part, but it will become more apparent by implication from what follows in this and succeeding chapters.

I shall illustrate this, and much else that I have to say, by reference to the conjunction of classical logic given above in Ch. III.4. Consider the truth table in (1)

(1)

&	T	F
T	T	F
F	F	F

Since classical orthodoxy in a connective is at issue, I should say that I do not regard the truth table in (1) as being in itself the actual definition of classical conjunction. This is of relevance in the present context because we may stare at a truth table as long as we like and still not agree on its proper extrapolation to cover the third logical status. This can only be decided in the light of the principle underlying the truth table, and it is THIS which I take to be the definition. The table merely plots the implications for particular cases of that definition, which I informally repeat here:

(2) A conjunction C is true if and only if ALL the conjuncts of C are true, and false if and only if ANY of the conjuncts of C are false.

If we insist that a system include only classical connectives, we are insisting that it include only a conjunction satisfying the definition in (2) and only other connectives derived in the usual way in terms of that conjunction and standard negation.

Now from (1)/(2) it is readily seen that the truth of a conjunct is not sufficient to guarantee the truth of the conjunction. By contrast the FALSITY of a conjunct IS sufficient to guarantee the FALSITY of the conjunction. Only the falsity of a conjunct is invariably inherited by the conjunction as a whole. As my opening remark implies, when we insist on conjunction as in (2) we are doing more than insisting on a specific technical point. We

are admitting (and making criterial) a general principle of (classical) logic - the primacy of the inheritance of falsity. That this is so is seen immediately when we acknowledge that the relation between a conjunction and its conjuncts is an example of the relation of strong entailment, where

(3) S1 STRONGLY ENTAILS S2 iff

(a) wherever S1 is true, S2 is true

and (b) wherever S2 is false, S1 is false.

(3a), which by itself is the definition of WEAK entailment, sanctions the classical <u>modus ponens</u>. (3b), which is what makes it specifically one of STRONG entailment, sanctions the classical <u>modus tollens</u>. The classical conjunction of P and Q, then, strongly entails P and strongly entails Q.

The centrality of the semantic relation between a conjunction and its conjuncts thus lies in the fact that it constitutes a perspicuous paradigm of the standard notion of truth condition - one that is appealed to in the semantics of ATOMIC sentences (cf. eg Kempson 1979). The non-presuppositional classically based proposals of say Wilson 1975 and Kempson 1975 actually incorporate the claim that this is the only semantic relation. If this means that all other semantic relations are definable in terms of it, this is true (I am again thinking, for example, of the relation between a disjunction and its disjuncts, which is not one of strong entailment, but is definable in terms of negation and the strong entailment holding between a conjunction and its conjuncts).

In the final analysis, then, we could take just the retention of a relation of strong entailment as the positive, internally demonstrable criterion of the gapped interpretation - strong entailment both in the compound and the atomic context. Ignoring

the externally demonstrated criterion of the number and character of negation operators and truth operators, then, we may propose:

(4) A system giving rise to sentences having the third logical status is A TWO-VALUED GAPPED SYSTEM (and hence a candidate for being a genuinely presuppositional system) if, whatever other semantic relations it defines, it defines the relation of strong entailment (and thereby validates *modus tollens*).

The discussion so far will, I hope, pre-empt any suggestion that (positive) criteriality for the gapped interpretation has here been reduced to a rather fine point. Its significance will become more apparent in due course. In the meantime, it is perhaps worth considering that strong entailment must be at the crux of the matter because in a strictly bivalent system - a system with just the two values, True and False - all entailments will be strong entailments. That is, in a strictly bivalent system, (3b) follows automatically from (3a).

The criterion spelt out in (4) has a very direct internal implication for presuppositional theories, in that it can only be implemented by ensuring that, in a system that includes a relation of presupposition, presupposition is defined so as to be consistent with the retention in that system of a relation of strong entailment. This is perhaps THE central thesis of the present work. It derives its importance from the fact that presupposition as defined by the SLDP is demonstrably NOT consistent with the retention of strong entailment. This is demonstrated in the section that follows.

3. The trivalence of standard presupposition.

I shall illustrate the discussion by reference to the question of how the truth table for classical conjunction is to be computed when we admit conjuncts having false presuppositions as defined by the SLDP.

With one important type of exception to be discussed in due course, it is empirically the case that

(5) A conjunction inherits all the presuppositions of its conjuncts.

For example, empirically (6a) presupposes what its conjuncts presuppose. In particular (6a) presupposes what its second conjunct (6b) presupposes, namely (6c).

(6) a. He is married and the Queen of England is married.
b. The Queen of England is married.
c. There is a Queen of England.

Now, under the SLDP, to say that A presupposes B is equivalent to saying that A has the third logical status whenever B is false. That is, presupposition is actually defined IN TERMS OF A THIRD LOGICAL STATUS (more on this due course). As regards the truth table for '&', then, the only way of expressing this fact about conjunction in terms of the Standard theory is given in (7):

(7) A conjunction inherits any third logical status that is assigned to its conjuncts.

Under the SLDP (5) and (7) are equivalent. It follows that empirically there can only be one truth table for conjunction, namely that given (in two forms) in (8).

(8)

	p	q	[p & q]
(a)	T	T	T
(b)	T	F	F
(c)	F	T	F
(d)	F	F	F
(e)	T	3	3
(f)	3	T	3
(g)	F	3	3
(h)	3	F	3
(i)	3	3	3

&	T	F	3
T	T	F	3
F	F	F	3
3	3	3	3

The property of (8) to which I wish to draw attention is this: the conjunction it represents is determined, NOT by the classical definition of conjunction, but by the the concept of presupposition embodied in the SLDP. (8) is not a valid extrapolation of classical '&'. In saying this, I mean that the principle by which the values in cases (e)-(i) are assigned is not consistent with the principle (given as (2) above) by which the values in cases (a)-(d) are assigned. Consider (g) and (h). By the definition in (2), which implies and is implied by the retention of strong entailment, we should expect to find the whole conjunction false in those two cases. But, by (8), it is not false. We can no longer say, then, that a conjunction STRONGLY ENTAILS its conjuncts. If it did then (9a) would strongly entail (9b).

(9) a. Saumur is the capital of France and the King of France is bald.

b. Saumur is the capital of France.

c. The King of France is bald.

d. There is a King of France.

And, since (9b) is false, (9a) would be false. But, by (8), it is not false. Instead it has inherited the third logical status of its

second conjunct (9c), which is the SLDP's means of expressing the fact that it inherits the (false) presupposition (9d) of that conjunct. (8) thus represents a standard presuppositional, rather than classical, conjunction.

The one valid and genuine extrapolation of classical conjunction is not (8) but (10):

(10)

	p	q	[p & q]
(a)	T	T	T
(b)	T	F	F
(c)	F	T	F
(d)	F	F	F
(e)	T	3	3
(f)	3	T	3
(g)	F	3	F
(h)	3	F	F
(i)	3	3	3

&	T	F	3
T	T	F	3
F	F	F	F
3	3	F	3

When I say that (10) is the only genuine extrapolation of classical conjunction, I mean that when you apply, without modification, the principle expressed in (2) - which is the definition of that conjunction - to cover the cases (e)-(i), (10) is what you get. Consistent with the discussion of Ch. III above, when applied beyond the fully determinate domain on which classical conjunction is defined, as it is in cases (e)-(i), such a conjunction is to be seen as a PARTIAL TRUTH FUNCTION. It is partial because in (2) a truth value for the conjunction as a whole is specified under just TWO conditions: (i) when both conjuncts are true - case (a) - and (ii) when at least one conjunct is false - cases (b)-(d) and (g)-(h). Cases (e), (f), and (i), and only those cases, meet neither of the stated conditions and hence, by classical conjunction, no truth

value is assigned in those cases. Here the third logical status cannot be construed as a truth value. In (10) '3' simply represents the FAILURE of classical conjunction to assign a truth value. (More on this in due course.)

I am not of course alone in proposing (10) as the only genuine extrapolation of the truth table for conjunction. It is adopted by Van Fraassen in all his relevant papers, and by Kleene 1938 in his 'strong'-type system. But I draw from (10) a general implication which Van Fraassen, who (by contrast with Kleene) was specifically concerned with presupposition, does not. We have seen that, by the Standard definition of presupposition, we are committed to the conjunction in (8) rather than that in (10). (10) is empirically incompatible with the SLDP, since under that definition, (10) would commit us to saying that not all presuppositions of conjuncts are inherited in their conjunction - since not all third logical statuses are inherited. This would, from an empirical point of view, be bad enough in itself. But look at the totally irrelevant conditions under which (10) à la SLDP allows for a presupposition to be filtered out: it is filtered out just in case the OTHER conjunct happens to be false! Illustrating this by reference to our example (9): were the standard theory of presupposition to include the desired classical conjunction represented in (10), it would follow that (9a) presupposes that there is a king of France only if Saumur is the French capital and that it does not presuppose any such thing if some town other than Saumur is the capital! (This very salient point about (10) under the conception of presupposition embodied in the SLDP is noted in Karttunen 1973; and on that basis he rejected not the Standard definition of presupposition, but that definition of conjunction.)

Since (8) is determined, not by the definition of classical

conjunction, but by the conception of presupposition embodied in the SLDP, it is determined in complete disregard of the classical principle of the primacy of the inheritance of falsity adumbrated earlier and illustrated by means of classical conjunction. Of necessity, under the SLDP, concern with the inheritance of presupposition and its failure (in the form of the third logical status) overrides the classical concern with the inheritance of falsity. This has a more general consequence that has not in my view been sufficiently, if at all, appreciated: that presupposition à la SLDP is not compatible with the retention of strong entailment and hence not compatible with the associated classical inference of modus tollens. I have the impression that it is generally assumed that the logical approach to presupposition embodied in the SLDP consists in the positing of a relation of presupposition IN ADDITION TO the standard relation of strong entailment as ordinarily understood. I have shown here that this cannot be the case. At the risk of offering up a candidate for Pseuds Corner: Standard presupposition is the cuckoo in the nest of strong entailment. This is illustrated particularly by the remarks on Keenan's system below, but notice in passing that Wilson's Formal Points (No. 1 particularly) 1975:24 seems to be based on the assumption brought into question here.* Before drawing the obvious conclusion about the Standard Logical Definition of Presupposition, a word on the systems of Seuren and Van Fraassen.

It is on these grounds that Seuren's cursorily presented "infection" criterion for the gapped interpretation of the

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* Formal Point No. 1 assumes that in a Standard theory presuppositional logic a sentence can have both Standard presuppositions and classical strong entailments because it more specifically concerns the putative case where some sentence B is both strongly entailed AND presupposed by some other sentence A. The above discussion shows that this will never be the case: B would only be presupposed, not strongly entailed, by A - under the Standard theory.

connective must be rejected. By that criterion, it is (8) that is bivalent-but-gapped and (10) that is trivalent. Yet clearly it is (10) that is in strict conformity with the classical definition of conjunction given as (2), and only (10) that is consistent with the retention of an undistorted relation of strong entailment. It is (8) which, in departing from (2), must be regarded as the "wonderful new (presuppositional) connective". And we have adopted, as one criterion of the gapped interpretation, adherence to the classical connective-definitions. In the absence of a more coherent criterion that conflicts with this, we must conclude that the inclusion of (8) is incompatible with such an interpretation of a presuppositional system. Furthermore, while Seuren restricts his attention to the connective in itself, we have considered that connective in a more general context and shown what general principles hinge on taking (10) rather than (8) to be the conjunction of classical logic.

As regards my agreement with Van Fraassen (and others) that (10) is indeed more standard than (8) (matters of truthfunctionality in the context of valid formulae apart), it should be noted that Van Fraassen nonetheless subscribes to and retains presupposition as defined in the SLDP - with all the unacceptable consequences noted above. In this, I suggest, we may find an explanation of why Van Fraassen's concern with the distinction between a gapped and a trivalent system and his attempts to develop the former have either been disregarded or regarded as peripheral. Van Fraassen appears either not to notice, or to regard as irrelevant, any connection between the concept of presupposition embodied in the (standard) definition he subcribes to and other properties of the system. But clearly, in the context of Standard Presupposition, the most notable property of the classical conjunction in (10) is its empirical incompatibility with the Standard definition. The distinction

between trivalence and gaps that emerges from within a supervaluational framework, however, is presented as not impinging on the Standard definition of presupposition. Either way, the conclusion that the supervaluational distinction between trivalence and gaps is a peripheral matter, of merely technical import, is perhaps a valid assessment of the matter. The differentiating force of the criteria proposed here have quite direct implications for the very definition of presupposition itself. This surely is as it should be, and any distinction between trivalence and The Gap which purports to apply independently of the presupposition-definition itself must be rejected on those grounds if on no other.

In summary, the discussion has sought to show that our fundamental conception of presupposition is very directly implicated in the distinction between trivalence and gaps. In terms of that discussion, the SLDP induces a system that is incompatible with the interrelated criteria IV and VI above. A system that includes a relation of standard presupposition cannot then be regarded as a two valued system with logical gaps and hence must be regarded as trivalent. Within the conceptual framework developed in previous chapters, this means that the SLDP should be seen as failing to reconstruct a proper or coherent concept of presupposition, and is therefore to be rejected.

I am concerned that it may yet seem that the criterial cluster constituted by strong entailment and the classical connectives (esp. conjunction) might appear a small hook on which to hang the rejection of a concept of logical presupposition which is almost universally accepted as the most appropriate possible logical concept. The remaining sections of this chapter place this result in a wider context, justifying the centrality of strong entailment as a criterion of the gapped interpretation. But in the final

analysis the most perspicuous means of showing that the SLDP is to be rejected on these grounds is by the presentation of the alternative that is suggested by the considerations brought forward here and by the demonstration that this alternative avoids/solves the problems encountered by the SLDP. The alternative is presented in Part Three.

4. The paradox of presupposition as '(bi)valence condition'.

The suggestions made in this section are tentative. At the end of Chapter II in Part One, I noted that the SLDP embodies DIRECT EXPRESSION of the Salient Presuppositional Intuition (that of a presupposition being implied both by A and its negation) and, equivalently, DIRECT EXPRESSION of a TRUTH GAP INTUITION (that presupposition failure leads to the third logical status of the presupposing sentence).* I questioned the assumption that a definition of presupposition should display these properties. Consider these issues now in the light of the distinction between trivalence and gaps as it has developed in the present work. A definition of presupposition that displays these properties of direct expression is, as observed in Ch. IV, a definition that reconstructs presupposition as a BIVALENCE CONDITION, as a necessary condition for a sentence to have a classical truth value, true or false. In the light of the last section, this concept of 'bivalence condition' is paradoxical.

If the SLDP is taken to express directly anything about logical

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*The particular Truth Gap Intuition that the SLDP purports to express directly is that the third logical status is the INEVITABLE consequence of presupposition failure. I am not concerned here with whether that is the empirically correct TGI. I am concerned with the matter of its direct expression.

GAPS strictly interpreted as such, then it is to be construed as a bivalence condition in the sense of representing a necesary condition for the presupposing sentence TO HAVE A TRUTH VALUE AT ALL i.e. as a classical VALENCE condition. Yet we have seen that in order to give direct expression of this condition in the form of a presupposition-definition entails a concept of presupposition that is in fact trivalent rather than two-valued with gaps. It would seem that this bivalence condition is only expressible within a trivalent system. Put another way, it would seem that a condition on bivalence is not directly definable in a system that is semantically closed under bivalence. This precipitates the following contradiction in the concept of direct expression of a truth gap intuition: since the direct expression of a putative Truth Gap Intuition in a definition of presupposition necessitates a TRIVALENT p-definition, it cannot in fact, directly or indirectly, express a GAP intuition at all. The circumstance under which a gap intuition would be directly expressible actually requires the third logical status to be construed not as a gap but as a third truth value!

In reconciling the reader to this suggestion of paradox, and to make sense of it as a paradox, I offer three brief comments. First, it would seem to be connected with our earlier result concerning Van Fraassen's formulation of a directly expressed and distinctive Principle of Bivalence - also shown not to be formulable in a system that is semantically closed under bivalence.

Secondly, recall our earlier observation that the SLDP defines presupposition IN TERMS OF THE THIRD LOGICAL STATUS. This logical status, then, actually figures in the system, plays a role in the definition of one of the kinds of truth condition admitted in the system. It seems reasonable to suggest that a system in which this

is so cannot be semantically closed under bivalence; such a system countenances the third logical status (and hence failure of presupposition) to the extent that one of the semantic relations it defines is defined in terms of that status.

Thirdly and more generally, it does not seem implausible to suggest that the statement of a CONDITION of any sort entails an expressive capacity both in respect of satisfaction of the condition and in respect of its non-satisfaction. It is uncontroversial, for example, that the statement of a TRUTH CONDITION entails at least a bivalent system, with one value (true) in terms of which satisfaction is expressible and the other (false) in terms of which non-satisfaction is expressible. In such terms, the inclusion of a superordinate BIVALENCE CONDITION entails an increment in expressive capacity - in respect of non-satisfaction of bivalence - in the form of a third value. This need not in itself be paradoxical. But it becomes paradoxical when such a condition is thought of as expressing a Truth Gap Intuition. For then it is to be thought of as a VALENCE CONDITION. And this, strictly interpreted, IS paradoxical. A valence condition, I suggest, is not a possible kind of condition: it entails an expressive capacity in respect of non-satisfaction of valence, yet this must take the form of a value, a value that purports to be expressive of non-valence.

It has been observed that a BIVALENCE condition is not in itself paradoxical. However, to the extent that such a condition purports to stand as the definition of presupposition, and to the extent that presupposition-failure is held to result in statement-failure, modelled logically by the truth gap, to that extent presupposition as a bivalence condition is paradoxical.

From this discussion it follows, that no genuine gap-inducing definition of presupposition can take the form of a bivalence

condition (let alone a valence condition); or purport to embody direct expression of any Truth Gap Intuition; or, since this is equivalent, embody direct expression of the Salient Presuppositional Intuition that a presupposition is implied equally by a sentence and its negation. In Part Three we show what a presupposition definition that satisfies these (negative) criteria must look like.

5. Strong entailment and standard presupposition in Keenan's system.

I conclude the chapter with a general consideration of the interaction between strong entailment and presupposition, conducted partly in terms of an examination of the presuppositional system of Keenan - especially as presented in Keenan and Hull 1973 (KH-73). The relevance of that system is that it is the only one known to me which explicitly addresses itself to the definition of other semantic relations in addition to presupposition.

The difference between the trivalent conjunction of (8) and the gapped conjunction of (10) may be expressed as follows. In the trivalent (8), the consequence of a false presupposition (i.e. the third logical status) takes precedence over the consequence of a false strong entailment.* In fact, however, this is wrongly expressed. What we should have said in connection with (8) is: "... takes precedence over the consequence of the falsity of WHAT WOULD OTHERWISE BE a strong entailment". In connection with (10) we should have said: "...takes precedence over the consequence of the

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* One might, and I will, express this by saying that, by the criteria, in a trivalent system, presupposition is STRONGER than the standard relation of strong entailment, while in a gapped system presupposition is WEAKER than strong entailment. This, as we shall see in due course, is a particularly appropriate way of expressing the matter.

falsity of WHAT WOULD OTHERWISE BE a standard presupposition".

The point is that, where (as with the SLDP) presupposition is stronger than strong entailment, there can BE no relation of strong entailment as such. The greater strength of the former contradicts the definition of the latter. Conversely, where strong entailment is stronger than presupposition, there can BE no STANDARD THEORY relation of presupposition, for the same reason. In short no system can purport to define both strong entailment AND standard presupposition without contradiction. One of them must go. By the criteria for the distinction between trivalence and gaps, trivalence consists in its being strong entailment that goes. The two-valued gapped interpretation depends in part on retaining strong entailment and therefore abandoning standard presupposition.

We have seen that Van Fraassen apparently fails to note, or does not sufficently appreciate, this interconnection and hence the true cost of incorporating standard presupposition. This failure is quite general in treatments of presupposition, I believe. Only Keenan and Hull 1973 concern themselves with the issue of what other semantic relations there might be in a system that includes a relation of standard presupposition. That system, however, makes the same default assumption as other discussions that do not directly address the issue: that everything else for all purposes remains the same. In particular they assume (and embody the assumption in the formal presentation of the system) that strong entailment is retained. We should therefore expect that system to be contradictory. This I now show.

Consider the definitions in (11) - given by Keenan and Hull 1973:450.

(11) a. S2 is a LOGICAL CONSEQUENCE of S1 just in case S2 is true in every state of affairs in which S1 is true.

b. S2 is a LOGICAL PRESUPPOSITION of S1 just in case S2 is true in every state of affairs in which S1 is either true or false (so S1 is neither true nor false, but vacuous, whenever S2 is not true).

c. S2 is a LOGICAL ASSERTION of S1 just in case
(a) S2 is a logical consequence of S1 but
(b) is not a logical presupposition of S1.

The definitions of CONSEQUENCE and PRESUPPOSITION are clear enough. Consequence (as observed in Ch. I) is weak entailment (equivalent to Van Fraassen's necessitation). And presupposition is standard presupposition. The definition of logical ASSERTION, on the other hand, is not very perspicuous. In the form presented, its definition in parasitic on those of consequence and presupposition. I believe the intention behind this apparent ORDERING of the definitions is to promote the idea that logical assertion is in some sense SUBORDINATE to presupposition. As it were, logical assertions are those consequences left over after you have decided what consequences are presuppositions. There is a concomitant suggestion that the question of whether the presuppositions of S1 are true is logically prior to the question of whether the logical assertions of S1 (and hence S1 itself) are true or false. Notice that this would seem anyway to be implied by the definition of presupposition (as a condition on (bi)valence).

But it does not work, as we see when we come to unpack the definition of logical assertion (11c). This is best done in stages. First we unpack 'logical consequence' and 'logical presupposition' in (11c). This yields (12).

(12) S2 is a LOGICAL ASSERTION of S1 just in case

(a) S2 is true in every state of affairs in which S1 is true, but

(b) it is not the case that S1 is neither true nor false wherever S2 is not true.

From (12) it is more clearly seen to follow that, where S2 is a logical assertion of S1, if S2 is not true then S1 is not true, by (12a), and that, by (12b), if S2 is not true, then S1 IS either true or false. So, where S2 as a logical assertion of S1 is not true, S1 itself is both [not true] AND [either true or false]. Hence (by Modus Tollendo Ponens) where S2, as a logical assertion of S1, is false, S1 is simply false. (12), then, is in turn equivalent to (13):

(13) S2 is a LOGICAL ASSERTION of S1 just in case

(a) S2 is true in every state of affairs in which S1 is true, and

(b) S1 is false in every state of affairs in which S2 is not true.

The reader will recognise (13) as being the definition of STRONG ENTAILMENT. This system, then, purports to include BOTH standard presupposition AND strong entailment. The ordering of the definitions in (11) is actually immaterial. The intention behind the ordering is ineffectual because it is a response to two conflicting impulses. On the one hand we have the very reasonable desire on Keenan and Hull's part to RETAIN the relation of strong entailment (as 'logical assertion') but, on the other hand, to SUBORDINATE it to (make it weaker than) the relation of standard presupposition, which they also wish to retain. The attempt to reconcile the two aims fails (as it must), for it has the following

contradictory consequence. Consider again (9) above, repeated here as (14):

(14) a. Saumur is the capital of France and the King of France is bald.

b. Saumur is the capital of France.

c. The King of France is bald.

d. There is a king of France.

By the standard definition of presupposition (11b), (14a) inherits the third logical status of its second conjunct (14c). This is the standard definition's way of capturing the fact that the conjunction as a whole shares the false presupposition (14d) of its second conjunct (14c). But by the definition of logical assertion/strong entailment, the conjunction as a whole also inherits the falsity of the false strong entailment constituted by its first conjunct (14b). The conjunction as a whole is thus both false and neither true nor false by the definitions in (11) - and this is a contradiction. Notice, incidentally, that the contradiction will arise not only in overtly conjunctive (compound) cases but in simplex cases. Consider (15).

(15) The king of France is standing next to me.

(15) presupposes (16) but independently strongly entails (logically asserts) (17):

(16) There is a king of France

(17) Someone is standing next to me.

Given the definition of presupposition in (11c) and the fact that (16) is false, (15) is neither true nor false. But now suppose in addition that (17) is also false. Then by the definition in (11c), (15) is false. But then (15) is both false and neither true nor

false.

The remainder of the dissertation presents the alternative concept and definition of presupposition that seems to be indicated by the discussion of this and the preceding chapters.

PART THREE

PRESUPPOSITION IN A TWO-VALUED LOGIC WITH GAPS.

This third Part presents an alternative to the Standard theory of presupposition, the "revised" theory, which it is claimed, induces a presuppositional logic that is more easily construed as a two-valued logic with truth-value gaps.

CHAPTER VI.

THE BASE DEFINITION AND ITS PROJECTIVE IMPLICATIONS.

This chapter first reviews the conditions to be met by a definition of presupposition suggested by the foregoing discussion (sections 1 and 2) and then (section 3) presents the proposed definition - the Revised Logical Definition of Presupposition (RLDP). The immediate consequences of that definition are then illustrated by reference to the logical status of conjunctive propositions with presuppositions (section 4) and by reference to the filtering of presuppositions in conjunctions (section 5). The result obtained in section 5 can be expected to ramify through the connective system by virtue of the interdefinability of the connectives. But before demonstrating that this is the case, I need to explain the relation between the RLDP itself and the general theory of presupposition that follows from it. That is the subject of Chapter VII.

1. Conditions to be met by the definition.

We saw in Part One that the concept of presupposition embodied in the SLDP is empirically problematic in its application to both simple sentences and compound sentences. Furthermore, by the criteria of the distinction between a trivalent system and a two-valued system with logical gaps here proposed, that definition has been shown to induce a trivalent system. This latter issue is not to be viewed as yet another independent problem for the SLDP: the empirical problems of the SLDP, I suggest, stem from its trivalence. This can be shown by showing the extent to which the formulation of

a definition of presupposition that conforms to the criteria for the inclusion of presupposition with a two-valued system with gaps resolves of itself the empirical problems encountered by the SLDP.

Since our fundamental conception of presupposition entails the concept of LACK of truth value (rather than a third truth value), the alternative must satisfy the criteria for the inclusion of presupposition within a two-valued system in which truth gaps arise. Furthermore, since we are claiming that the empirical problems of the SLDP stem from its trivalence, if the distinction between a trivalent system and a gapped system has reality (and has it on the terms suggested here) our definition must be genuinely and demonstrably distinct from the SLDP. I shall briefly review the implications of these remarks and show the connection between them.

Since the definition must be consistent with the retention of strong entailment and all that that implies, it must embody a conception of presupposition weaker than strong entailment, one that allows the consequences of a false presupposition to be limited by the definition of strong entailment. The most salient implication of this is that the tie between (the falsity of) presupposition and the third logical status must be weakened. The definition must allow that a sentence suffering from presupposition failure may actually have a truth value. It must allow that the third logical status is not the INEVITABLE consequence of such failure. Under the SLDP concern with the inheritance of presupposition (failure) perforce takes the form of concern with the inheritance of the third logical status. We have seen that concern with the inheritance of the third logical status conflicts with the classical principle of the inheritance of falsity (which is also a logical status). Since, under the SLDP, concern with '3' constitutes concern with presupposition-failure, and since presuppositions are more often

inherited than not, concern with the inheritance of '3' willy-nilly overrides the principle of the inheritance of falsity which, it seems to me, is at the heart of what it is to be a specifically LOGICAL system. In circumscribing the consequence of presupposition-failure, then, we effect a logical separation between presupposition-failure and the third logical status. The theoretical arguments for doing this have been presented. The empirical advantages of doing so will become apparent as we proceed.

It is clear that a definition that satisfies these requirements will indeed be genuinely and demonstrably distinct from the SLDP. The SLDP, as we have seen, formulates presupposition as a bivalence condition; it is a definition IN TERMS OF the third logical status; it DIRECTLY expresses a putative truth gap intuition. We have shown the interconnections between these properties of the SLDP and the connections between them as a set and the view of that definition as being trivalent. Now a definition of presupposition in which the consequence of a false presupposition is limited by the definition of strong entailment reconciles presupposition failure with the bivalence of the presupposing sentence - to an appreciable degree. Such a definition then cannot take the form of or be construed as a bivalence condition. It cannot be expressed IN TERMS OF the third logical status. Nor can it DIRECTLY express a truth gap intuition. Nor can it DIRECTLY express the SPI that a presupposition is implied both by a sentence and its negation.

In my efforts to emphasise the necessity of the demonstrable distinctness of the required definition and the SLDP, it may seem that I am playing down the other side of the coin. If the definition to be presented is as distinct as the discussion suggests it should be, do we in fact want it? It might be asked how far removed from the SLDP can a putative presupposition-definition be

and remain, in any intuitive sense, a logical definition of PRESUPPOSITION? These are matters to which I now turn.

2. The nature of presupposition again.

In Chapter III, I suggested that the essence of the logical concept of presupposition lay rather precisely in a notion of "innocence with respect to presupposition failure". A presupposition S2 of some sentence S1 is such that a speaker of S1, while committing himself to the truth of S2, does not and cannot countenance the possibility of S2 being false, and therefore cannot countenance the possibility that S1 might be not-true on the specific grounds of the non-truth of S2. More generally, a presuppositional language is such that, where the non-truth of a sentence is attributible to the non-truth of its presuppositions, the non-truth of that sentence is not expressible in the language.

It might appear that exactly this is expressed by the SLDP. That definition of presupposition effectively commits us to the view that a presuppositional language is one which exhibits that degree of semantic closure at which the nontruth of certain sentences (namely those suffering from presupposition failure) is not under any circumstances expressible.

What the SLDP expresses is certainly very close to what is expressed in the first paragraph. But it is not the same. It is, in fact, much stronger. For it follows from the SLDP - but NOT from the contents of the first paragraph - that there is, in a presuppositional language, no true negation of any sentence suffering from presupposition failure. But we are not required to express THIS in order to express what is at the core of the concept of presupposition: that presupposition-failure cannot of itself

induce the truth of the negation (the falsity) of the presupposing sentence. And this is a distinct idea because it allows that, while the negation of a sentence suffering from presupposition-failure may be true, its truth is not compatible JUST with the falsity of the presuppositions. This idea merely requires us to insist that, if there is a true negation of a sentence suffering from presupposition-failure, then that negation is not expressive of that failure.

In summary of these remarks, consider the principles expressed in (1), (2), and (3):

(1) A presupposing sentence cannot be false (solely) by virtue of the falsity of its presuppositions.

(2) The truth of a presupposition is a necessary condition of the falsity (and the truth) of the presupposing sentence.

(3) A sentence may be false when associated with a false presupposition.

The principle expressed in (1) is an integral and important part of the Standard concept of presupposition and indeed of any conceivable logical concept of presupposition. But the SLDP achieves the statement of (1) by means of the much stronger principle given as (2). (2) indeed is the SLDP itself. And (2) entails (1). But they are not equivalent. For while (2) and (3) are mutually inconsistent, (1) and (3) are mutually consistent. (1) allows that a sentence suffering from P-failure may be false just in case the grounds of its falsity are INDEPENDENT of the falsity of its presuppositions, i.e. on the grounds that, independently of whether its presuppositions are true or not, it has false strong entailments. In other words again, and this seems important, just in case it would anyway be false even WERE its presuppositions true.

The alternative definition of presupposition that is indicated, then, will be one which retains (and indeed consists in) the principle given as (1) - which I maintain is the logical essence of presupposition - but disembarrasses itself of the much stronger (standard) principle given as (2). This will induce a logic consistent with (3), a logic in which strong entailment and the associated inference of Modus tollens are retained and hence classical conjunction and the connective system defined in terms of it.

My answer to the question of how much of the essential conception of presupposition can be retained on the terms here demanded, then, is: as much as and NO MORE than is required.

3. The Revised Logical Definition of Presupposition (RLDP).

I shall initially present the RLDP in the form in which it first suggested itself to me, that is, in the form of a reversal of the definitions of Keenan & Hull quoted above. Oddly enough, the hierarchy of semantic relations (or rather the reverse of it) that Keenan & Hull sought to achieve by means of their ordering of the definitions is actually achieved under this reversal. We shall see immediately, however, that this has the result that the definition can be expressed much more simply.

Corresponding to Keenan & Hull's logical consequence (= Van Fraassen's necessitation) we define a general relation of weak entailment - (4a). Corresponding to Keenan & Hull's logical assertion, we define the standard relation of strong entailment - (4b). Then we define (revised) presupposition - (4c).

(4) a. S2 is a WEAK ENTAILMENT of S1 if and only if wherever S1 is true S2 is true.

b. S2 is a STRONG ENTAILMENT of S1 if and only if

(i) S2 is a weak entailment of S1

and (ii) wherever S2 is false, S1 is false.

c. S2 is a PRESUPPOSITION of S1 if and only if

(i) S2 is a weak entailment of S1

but (ii) S2 is NOT a strong entailment of S1.

Under (4) the set of truth conditions of a sentence are its weak entailments (supporting modus ponens). A subset of these weak entailments are strong entailments (supporting modus tollens). Presuppositions are weak entailments that form a subset complementing the subset consisting of the strong entailments. In fact the relation between weak entailment and strong entailment is a privative opposition: all strong entailments are weak entailments but not all weak entailments are strong entailments; those weak entailments that are not strong entailments are presuppositions. Note that since no truth condition can both be AND not be a strong entailment, it follows that no truth condition can be both a presupposition and a strong entailment. This, incidentally, has the standard consequence that necessary truths do not (strongly) entail, but presuppose, themselves.

It will be clear that the net effect of the definitions in (4) can be expressed very simply indeed: presupposition is non-distinct from weak entailment itself. This indeed constitutes the basic Revised Logical Definition of Presupposition, and the Revised theory of presupposition that follows from it is a theory of weak entailment.

The sole distinction between strong entailment and revised presupposition, then, is that the former does, while the latter does not, support *modus tollens*. In this, revised presupposition differs from standard presupposition, which, though definable in terms of weak entailment (from both A and its negation - more on this in due course) is not equivalent to weak entailment itself. While neither standard presupposition nor revised presupposition supports *modus tollens*, the definition of revised presupposition CONSISTS in this negative property - while being compatible with the inclusion in the system of a semantic relation that does support *modus tollens* (namely strong entailment). The definition of standard presupposition, by contrast, does not consist in this negative property in itself, though it entails that property because, as we have seen, it more strongly entails that there can BE no relation of strong entailment as such, for modus tollens is held subject to the satisfaction of presupposition.

Under (4) no relation is defined in terms of the third logical status. By (4) a sentence is true if and only if ALL of its truth conditions (weak entailments) are true; and a sentence is false if and only if ANY of its strong entailments are false. So far, so standard. The only non-standard feature is the distinction between strong and weak entailment induced by the fact that not all weak entailments are strong entailments. But since weak entailment = presupposition, it is non-standard JUST to the extent of including a relation of presupposition.

We have seen that the definitions define the conditions under which a sentence is true and the conditions under which a sentence is false. But they give rise a circumstance in which neither of these conditions are met, that in which none of the strong entailments is false but some weak entailment (presupposition) is.

In this circumstance, the system fails to assign truth and fails to assign falsity. The system is a PARTIAL logic in the sense that the third logical status to which it gives rise, and the manner in which it arises, does not intrude on the normal operation of the classical system, but arises negatively and by default, as a consequence of a classical assignment of the actual truth values, true and false. I suggest that, by contrast with the third logical status of the SLDP - which is highly intrusive, vying on an equal footing with the classical truth values and overriding them, the third logical status of the RLDP much more closely approximates to the concept of LACK OF TRUTH VALUE. In the next section I shall provide a rather vivid illustration of these observations.

In (5) I summarise these observations by outlining the necessary and sufficient conditions for a sentence to be true, false and neither true nor false by the definitions in (4) - expressed in terms of strong entailment (SE) and weak entailment (WE) - taking negation to be nothing other than a function from truth (falsity) into falsity (truth), a function that thereby FAILS to map anything OTHER than a truth-value into a truth value.

(5)

(i) a. S is TRUE (and not-S FALSE) iff all WE's of S are true.

- by (4a). Hence:

b. S is NOT TRUE (and not-S NOT FALSE) iff any WE of S is false.

(ii) a. S is FALSE (and not-S TRUE) iff any SE of S is false.

- by (4b). Hence:

b. S is NOT FALSE (and not-S NOT TRUE) iff no SE of S is false.

Hence by (5-(i)b) and (5-(ii)b):

(iii) a. S (and not-S) is NOT TRUE and S (and not-S) is NOT FALSE iff some WE of S is false but no SE of S is false.

In the absence of any other proposals for criteria of the distinction between a third truth value and a logical gap, I shall assume henceforth that the distinction consists in what I have said it consists in and, therefore, that the RLDP does indeed induce a gapped system rather than a trivalent one. I shall therefore allow myself to refer to the third logical status to which it gives rise as a 'gap' and as the LACK of a truth value.

The general theory of presupposition that is implied by the Revised Definition of Presupposition will not be immediately apparent just from this presentation of it. But before discussing the relation between the definition and the general theory (in the chapters that follow), I devote the next two sections of this chapter to a discussion of one central feature of the general theory that follows immediately from the definition - the handling of the presuppositions of conjunctive propositions.

4. The Revised definition and conjunction.

I again use conjunction, this time as a means of illustrating the general character of the system induced by the RLDP, but also as a way into the general issue of the presuppositions of compound sentences in the context of such a definition. In particular, I demonstrate that the RLDP is empirically consistent with the extrapolated truth table for classical conjunction, here repeated as (6):

(6)

&	T	F	3
T	T	F	3
F	F	F	F
3	3	F	3

Consider now, for the third time, the conjunction discussed as (9a)

and as (14a) in Chapter V - repeated here as (7) - and compare it with the conjunction in (8).

(7) Saumur is the capital of France and the King of France is bald.

(8) Paris is the capital of France and the King of France is bald.

(9) There is a king of France.

Empirically/intuitively, both (7) and (8) presuppose (9). But under the RLDP, only in (8) does the failure of presupposition manifest itself in lack of truth value for the whole conjunction. This is because only in (8) is the strong entailment constituted by the first conjunct true. Consistent with the classical definition of conjunction - in which the truth of a conjunct guarantees nothing specific in the way of a truth value for the conjunction* - the full force and characteristic consequence of the presupposition failure associated with the other conjunct manifests itself in (8). But in (7) the falsity of the strong entailment constituted by its first conjunct is sufficient in itself to guarantee the falsity of the conjunction, independently of the p-failure induced by the second.

A reader still in the thrall of the SLDP will find this perverse: why should the truth value of the totally irrelevant first conjunct determine whether (7) and (8) should be gapped or not? As indicated, the query is based on the standard assumption of an indissoluble equivalence between p-failure and the third logical status, in terms of which the falsity of (7) would entail that (7)

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* I say 'nothing SPECIFIC' because the truth of a conjunct guarantees that the conjunction will have the SAME logical status as the OTHER conjunct. It is worth considering the following discussion in the light of this less specific guarantee, for this feature of classical conjunction - (p) > ((p & q) = q) - is preserved under the RLDP. It is under the SLDP, too, but see the next footnote.

did NOT presuppose (9). But under the RLDP lack of truth value in the presupposing sentence is not the INEVITABLE consequence of p-failure, it is only the CHARACTERISTIC consequence, all other things being equal (i.e. all independent strong entailments being true).

Indeed, it is precisely in terms of the irrelevance - the independence - of the first conjunct that this can be made sense of. The point is that (7) is false for a reason that is independent of the falsity of the presupposition. It is important to note in this connection that (7) would still be false even were the presupposition true and there were a king of France.

The matter is not epistemological but it may be regarded from an epistemological point of view. Whether or not you know whether there is a king of France, (7) is readily assessable in classical terms given the independent knowledge that Saumur is not the capital of France. That is, it is possible strictly to KNOW that (7) is false without knowing whether or not there is a king of France.*

It is important to note how the RLDP shifts the focus of attention in this respect. The empirical INconsistency of the SLDP with the conjunction plotted in (6) focuses our attention on the irrelevance of the truth value of the first conjunct of (7) to the fact that the conjunction inherits the false presupposition of the second. Under the RLDP, which is empirically consistent with (6), our attention is instead focussed on the irrelevance of the false presupposition (inherited from the second conjunct) to the assessment of (7) as being false.

The observation that (7), as much as (8), suffers from

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* In classical logic it is the case that a conjunction has the same truth value as any false conjunct: (~p) > ((p & q) = p) is a logical truth of CL. This is preserved under the RLDP but not the SLDP.

presupposition-failure and the observation that lack of truth value is only the characteristic not the inevitable consequence of such failure come together in the observation that, WERE the first conjunct of (7) in fact true (as it is in (8)), then (7) itself would indeed lack a truth value by virtue of the falsity of (9). And thereby the empirical fact that (7) does presuppose what its second conjunct presupposes is captured by the revised logical definition of presupposition.

To repeat, under the SLDP, the third logical status is a necessary and sufficient condition of presupposition failure. Under the RLDP the third logical status (in the form of a truth gap) is not a necessary condition of presupposition-failure.

There is an aspect of the foregoing discussion which rather clearly illustrates the significance of strong entailment in establishing criteria for the distinction between a third truth value and lack of truth value. Let me explain this. Under the RLDP the second conjunct of (7) is gapped by virtue of the falsity of (9). Although the conjunction strongly entails its second conjunct, the conjunction thus inherits neither truth nor falsity from that conjunct. What concerns me here is the locution "lack of truth value". One MIGHT express the fact that (7) inherits neither truth nor falsity from its second conjunct by saying that (7) inherits "lack of truth value" from that conjunct. But, as usually understood in such discussions, this would be wrong. For, AS USUALLY UNDERSTOOD, this would be taken to entail that (7) itself should "lack a truth value" - as it is generally supposed to do under the SLDP. Yet under the RLDP there is a quite precise sense in which (7) does INVARIABLY inherit lack of truth value from the second conjunct - as long as this is understood in a conspicuously

negative sense to mean "inherits neither truth nor falsity" from that conjunct; in the sense, that is, of not inheriting anything in the way of a truth value from it. Indeed, this negative way of understanding "inherits lack of truth value" is the only way of understanding it under the revised definition of presupposition, because it is under that definition (and only under that definition) that (7) is still left free to inherit a truth value (namely falsity) from some other conjunctive source.

It might appear that I am actually allowing that the expression "(inherit) lack of truth value" may have both a positive and a negative understanding. Under Standard Presupposition, (7) is rather clearly seen to inherit "lack of truth value" in the positive sense. It is positive under that theory because the "lack of truth value" that is inherited vies on an equal footing with the classical truth values. It is positive enough, indeed, to supplant falsity in the matter of truth-functional inheritance. In fact, I am suggesting that this positive sense of "lack of truth value" is not legitimate - that it does not in fact consist in a lack of truth value at all. I suggest that what it really means on this positive sense is "lack of a CLASSICAL truth value". The difference between "lack of truth value" and "lack of classical truth value" is that inheritance of the latter, but not of the former, is consistent with the (positive) inheritance of a NON-CLASSICAL THIRD TRUTH VALUE. Lack of (classical) truth value in this context is just the negative obverse of a very positive non-classical coin.

The point is illustrated by the contradiction noted earlier in connection with Keenan's system. When you effectively define BOTH standard presupposition AND strong entailment, you derive a contradiction in the case of (7): the falsity inherited from the first conjunct and whatever it is that is inherited from the second

conjunct POSITIVELY CONTRADICT EACH OTHER. This contradiction would be bewildering were it really the case that Standard presuppositional logic indeed gave rise to a logical gap rather than a third truth value. By contrast, no contradiction results from defining both revised presupposition AND strong entailment. That is, no contradiction arises from the idea that (7) inherits both falsity from its first conjunct AND, in its negative sense, lack of truth value from its second. For this simply means that, while (7) inherits NO TRUTH VALUE (= does not inherit any truth value) from the second conjunct, it can with perfect consistency still inherit falsity from the first. With the result that (7) is simply false (while nevertheless presupposing what its second conjunct presupposes).

5. Automatic conjunctive filtering.

Compare the conjunction in (7) above with that in (10):

(7) Saumur is the capital of France and the king of France is bald.

(10) There is a king of France and $\begin{matrix}\text{the king of France}\\ \text{he}\end{matrix}$ is bald

What (7) and (10) have IN COMMON is the fact that they are both conjunctions of a false conjunct and a gapped conjunct, and hence under the RLDP both are false. What DISTINGUISHES them is the intuitive fact that (7) does presuppose the existence of a French king while (10) does not. In other words, the presupposition of the second conjunct is inherited as such by the conjunction in (7) but not in (10). Instead of presupposing that there is a king of France, (10) logically asserts it.

This simple, obvious, and important distinction between (7) and (10) has proved problematic not only for the SLDP but for other theories. For example, a crucial (though unmentioned) feature of Gazdar's 1979 treatment of the cancellation of presuppositions as such is that, since the "pre-suppositions" of a sentence are cancelled (fail to become actual presuppositions - of an utterance) only if they are NOT consistent with the context with which the sentence is paired, that proposal fails to predict that the presupposition of the second conjunct of (10) is not presupposed by (10) itself. In this central case, the filtering of the presupposition has nothing whatever to do with inconsistency. The presupposition of the second conjunct is not only consistent with (10) but is actually equivalent to that subpart of (10) that constitutes the second conjunct's immediate context. Yet it is this very fact that constitutes the explanation of why, empirically, it DOES get filtered out as a presupposition. In terms of Gazdar's system, this presupposition could only be filtered out in an explicitly self-contradicting discourse.

As regards the problem posed for the SLDP by the fact that (10) does not presuppose what its second conjunct presupposes, this is of course one aspect of the issue addressed by Karttunen 1973 in his exposition of the projection problem for (standard!) presupposition. We have seen that, under the SLDP and given the falsity of (9), to say that (7) presupposes (9) is to say that (7) has the third logical status; to say that (10) does NOT presuppose (9), but logically asserts it, is to say that (10) is false. The problem is that Karttunen (or rather the SLDP) has to make very special arrangements for this:

(11) Let S stand for any sentence of the form "A and B";

a. If A presupposes C, then S presupposes C;

b. If B presupposes C, then S presupposes C UNLESS A (strongly) entails C.

(11) states that a conjunction inherits all the presuppositions of its conjuncts unless the presupposition is strongly entailed by the other conjunct, in which case it doesn't. (Actually, Karttunen allows only the presupposition of the second conjunct to be filtered in this way, thus making a distinction between (10) and (12):

(12) the King of France is bald and there is a king of France.

I disregard this distinction, treating (10) and (12) as identical for all logical purposes. The very real distinction between them is pragmatic, and the oddity of (12) is easily captured by either of the Gricean injunctions to orderliness or appropriate informativeness or both.)

In showing just how special this arrangement is, we shall see why it is required. We have seen that, under standard presupposition, it is normal (indeed, definitional) for the consequence of a false presupposition to take precedence over the consequence of a false strong entailment (ignoring the fact that under this arrangement there can't strictly be strong entailments).* IN THIS ONE CASE, though, where the presupposition is also strongly entailed, (11) has the effect of contradicting the standard definition of presupposition by turning the whole system on its head. That is, in this one case, strong entailment is re-instated as a semantic relation of the system: in this one case, the consequence

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* That is, given a sentence B which might be regarded as a candidate for being both a presupposition and a strong entailment of A, it follows from the SLDP that it will be a presupposition, not a strong entailment of A (from the RLDP, on the other hand, it follows that B will be a strong entailment, not a presupposition, of A).

of a false strong entailment now takes precedence over that of presupposition-failure.

We have already seen that the Standard definition already implies, not a classical conjunction, but a 'wonderful new' 'presuppositional' conjunction, that plotted in (8) in Chapter V. Now we see, in addition, that under that definition we need a wonderful new ad hoc conjunction. Its ad-hocery consists in the fact that it is non-truth-functional:

(13)

&	T	F	3
T	T	F	3
F	F	F	3/F
3	3	3/F*	3

(In fact, as noted, Karttunen's conjunction is as metric (in Schmerling's 1975 sense); that is, where I have '3/F*' he would have just '3'.) The SLDP empirically thus takes us even further from classical conjunction than the earlier discussion of conjunction might suggest.

Consider now the treatment that conjunctions like (10) receive under revised presupposition. Under the RLDP, no special ad hoc arrangement is needed to capture the facts of the matter: that (10) does not PRESUPPOSE existence of a French king follows automatically. In this connection the part played by the relevance or otherwise of the first conjunct in (7) and (10) is at a premium. We have seen that, under the RLDP, the consequence of a false strong entailment ALWAYS takes precedence over that of a false presupposition anyway. This is so in (10) as elswhere. So both (7) and (10) are false by virtue of the falsity of their strongly entailed (first) conjuncts. But the falsity of (7) is compatible with the fact that (7) has a false presupposition BECAUSE its

falsity is independent of the falsity of that presupposition. As noted, (7) would still be false even were the presupposition true.

(10), we have seen, is also false on the grounds of the falsity of its strongly entailed first conjunct. But in (10) this first conjunct is IDENTICAL to the presupposition. (10) is thus false on grounds that are NOT INDEPENDENT of (what would otherwise have been) a false presupposition. Notice that, in contrast to what is the case with (7), it is NOT necessarily the case that (10) would still be false even were there a king of France. But the salient point to note is that, since (9) is a strong entailment of (10), it is NOT a weak entailment that is not a strong entailment of (10). And this, by the revised definition of presupposition, means that (10) does not presuppose, but strongly entails (or logically asserts) the existence of a French king.

This satisfactory result is achieved automatically, without special stipulation, maintaining the strictest possible classical conjunction, maintaining truthfunctionality, the standard relation of strong entailment, and the associated inference of <u>modus tollens</u>.

The result here obtained reveals, rather clearly in my view, the basis of my earlier contention that putative projection problems arise from, and can only be resolved in terms of, the actual logical definition of presupposition itself. The reader may have noticed that I have been careful, in my discussion of Karttunen's work on the presuppositions of compound sentences, to describe that work as an EXPOSITION of the projection problem for standard presupposition rather than as a SOLUTION to it. I am of course aware that, whatever Karttunen's intentions in this regard, that work is generally interpreted as an attempt to provide a solution (see eg Gazdar 1979b). How this interpretation of Karttunen 1973 arises is beyond my comprehension. (11), for example, is nothing other than

the particularised observation of the conditions under which a conjunction intuitively inherits or fails to inherit the presuppositions of its conjuncts. This particular observation is required because, not only are the facts observed not predicted by the SLDP, they are actually inconsistent with the SLDP. And THAT is the problem: it consists in the fact that if you wish to state what the presuppositions of a conjunctive proposition are under the SLDP, then you are obliged to make an ad hoc stipulation, in the form of a statement such as (11), a statement that is required precisely because it is not in fact consistent with the basic definition of presupposition assumed. But to observe this problem, however precisely and accurately, is not to solve it.

The result obtained here is important in two respects. In the first place, it needs to be noted that, by virtue of the interdefinability of the classical connectives upon which we are insisting, we may expect the automatic filtering here demonstrated to ramify through the connective system as a whole. It does. But, as mentioned, before I can demonstrate that this is the case, I need to discuss the more general theory of presupposition that is implied by the RLDP. In particular, I need to discuss how the presuppositions of negative sentences are treated under the RLDP. This matter needs to be discussed first since the interdefinability of the connectives crucially involves negation.

Secondly, and more generally, from the point of view of our pre-theoretical conception of presupposition (and the reader can take this or leave it), the result is important because it relates to the idea of presuppositions as being IMPLICIT commitments which, because they ARE implicit, are not (presented as) subject to debate. In this they contrast with the EXPLICIT commitments one enters into in making assertions, which are (presented as) subject to debate.

It follows from this that a presupposition ceases to be a presupposition as soon as it is made EXPLICIT in the form of an assertion. It is this pre-formal idea that I take to be reconstructed by the result obtained here. Since it is so central to our pretheoretical concept of presupposition, it is right and necessary that the result should be immanent in (follow from) the very definition of presupposition itself.

h 15.

CHAPTER VII

THE GENERALISED DEFINITION.

This chapter is an exposition of the GENERAL THEORY of presupposition that is entailed by the RLDP presented in the last chapter. In particular we are concerned with how the presuppositions of negative sentences are handled under the revised theory. The RLDP throws up a relation of GENERALISED PRESUPPOSITION which I define in this chapter. It is in terms of this generalised relation that the empirical adequacy of the theory is to be assessed. In particular, it is in terms of generalised presupposition that the revised theory here presented captures the intuitive datum that the presuppositions of any S1 are implied by its negation (~S1).

1. Introductory: Logical presupposition and intuitive presuppositions again.

In Part One it was noted that the Salient Presuppositional Intuition (SPI) is that of a proposition being implied both by a sentence and its negation. It was noted that the SLDP consists in the direct expression of the SPI, as in (1)

(1) A presupposes B iff A (weakly) entails B and ~A (weakly) entails B.

Thereby the SLDP was shown to amount to (2):

(2) A presupposes B iff ~A presupposes B.

It is not my purpose to deny that the SPI is a central intuitive datum to be accounted for by any theory of presupposition. Yet direct expression of that intuition in the form of a logical definition (that is, the identification of defined presupposition and intuitive presupposition) leads by the criteria here proposed to a TRIVALENT logic of presupposition which, furthermore, makes a COUNTERintuitive blanket prediction of third logical statuses.

As noted at the beginning of the last chapter, it might appear that the requirements on any intuitively adequate alternative logical theory of presupposition are mutually incompatible. On the one hand, if it is to count as genuinely distinct from the SLDP, it cannot embody direct expression of the SPI nor amount in itself to (2). On the other hand, intuitive adequacy demands that the definition capture the intuitive datum on which (1)/(2) is based. I suggested in Part One, however, that a theory of presupposition may capture the relevant intuitive facts without incorporating a definition that CONSISTS DIRECTLY in the logical characterisation of the intuitive facts - provided those facts can be predicted in terms of the definition such as it is.

I take it that the intuitive datum directly expressed in (1) is that given in (3a) from which (3b) follows (by the proof in Chapter II):

(3a) A INTUITIVELY PRESUPPOSES B iff A intuitively implies B and ~A intuitively implies B.

(3b) A intuitively presupposes B iff ~A intuitively presupposes B.

Under the (trivalent) SLDP, B is predicted to be an INTUITIVE presupposition of A if and only if B satisfies the definition of

logical presupposition with respect to A. This cannot be under the (gapped) RLDP; nevertheless (3) must follow from the RLDP.

(3a) is of course the more perspicuous characterisation of the intuitive datum. Before proceeding, let us spell out explicitly what it tells us about the conditions to be met by a theory that claims to predict intuitive presuppositions as such. There are two individually necessary and jointly sufficient conditions on the prediction of intuitive presuppositions:

(a) What is predicted must be predicted of S if and only if it is predicted of ~S.

(b) It must be an intuited IMPLICATION that is predicted.

In the two sections that follow I shall do three things:

I. I shall show that the RLDP is not equivalent to (1). This entails showing that a sentence S2 satisfying the RLDP with respect to S1 does not satisfy that definition with respect to ~S1 (Section 2.)

II. Then I define the relation of GENERALISED PRESUPPOSITION. This definition has two crucial properties: (i) it follows directly from the revised logical definition of presupposition, and (ii) it is a generalised relation in the sense that it applies without distinction to positive sentences and their negations, thus satisfying condition (a) above (also section 2).

III. Then (in Section 3, at greater length) I show that it follows from the RLDP that any sentence B satisfying the definition of generalised presupposition with respect to A is characterised as being intuitively IMPLIED by A, thus satisfying condition (b) above. I discuss the nature and status of the intuited implication when A is negative as this is characterised by the theory.

I-III will effectively show that, where S2 satisfies the RLDP with respect to S1, ~S1 is characterised as INTUITIVELY IMPLYING S2. Since a sentence S2 satisfying the RLDP with respect to S1 is a weak entailment of S1, and on the uncontroversial assumption that a logical entailment of S1 is intuitively implied by S1, it follows that, when S2 satisfies the RLDP with respect to S1, S2 is INTUITIVELY IMPLIED both by S1 and ~S1. It will then be the case that, while it is never the case that S2 satisfies the RLDP with respect to both S1 and ~S1, it nevertheless follows from the RLDP that S and ~S do share their INTUITIVE presuppositions as defined in (3).

It is thus in terms of GENERALISED PRESUPPOSITION that we show that the logical theory of presupposition embodied in the RLDP does indeed reconstruct the intuitive relation of presupposition and predicts the intuited range of its instantiations. That is, I am using the notion of generalised presupposition as a means of explicitly spelling out the consequences of the RLDP itself, to facilitate the demonstration of how we may extrapolate from the RLDP itself to a more general range of intuitive presuppositions. Generalised presupposition is not an independent concept laid on top of the theory constituted by the RLDP to mop up its inadequacies. It cannot be so regarded because the concept of generalised presupposition as it is defined here follows from, is thrown up by, the RLDP itself.

Finally, a point of terminology. It has just been noted that the generalised theory of presupposition is entailed in its entirety by the RLDP itself with the result that, if S2 satisfies the RLDP with respect to S1, then S2 is a generalised presupposition of both S1 and ~S1. On these grounds I am allowing myself to call any

sentence S2 that satisifies the RLDP with respect to S1, a PRESUPPOSITION of S1. As indicated, though, there are (predicted to be) more instantiations of generalised presupposition than there are sentences satisfying the RLDP with respect to some other sentence. I need a convenient label, then, for those (generalised) presuppositions that do satisfy the RLDP itself. I shall, where necessary, call such presuppositions BASE-PRESUPPOSITIONS or simply WEAK ENTAILMENTS.

2. The RLDP and generalised presupposition.

This section is devoted to the demonstration of I and II of the foregoing section. III is dealt with in the next section.

I. It is a trivial matter to show that, under the RLDP, S and ~S do not share their base-presuppositions. Under the RLDP a base-presupposition S2 of S1 is a weak entailment of S1 that is not a strong entailment of S1. This, we have seen, does not preclude there being strong entailments of S1. It follows from this that, while a sentence S1 with a false base-presupposition S2 cannot be false solely by virtue of the falsity of S2, it may nevertheless be false. The falsity of S1 is thus compatible with the falsity of its base-presuppositions (eg S2).

Now, by the definition of negation, ~S1 is true if and only if S1 is false. If the falsity of S1 is compatible with the falsity of its base-presuppositions, then the TRUTH of ~S1 is compatible with the falsity of S2 where S2 is a base-presupposition of S1. Hence S2 cannot be a (weak) entailment of ~S1 - and hence cannot be a base-presupposition of ~S1. Thus, by the RLDP, S and ~S do not share their base-presuppositions, and the RLDP is thereby shown not to be equivalent to (2) and to be a genuine alternative to the SLDP.

Although the demonstration of this fact has been brief and simple the reader will need to bear it in mind in what follows.

II. We have just seen that under the RLDP where S1 base-presupposes S2, ~S1 does NOT base-presuppose S2 because ~S1 does not (even) weakly entail S2. It is, nevertheless, equally easy to show that, where S1 base-presupposes S2, S2 plays a role in whether or not ~S1 gets assigned a truth value which is identical to the role it plays in whether S1 itself gets assigned a truth value. The facts are displayed in (5) of Chapter VI, repeated here.

(i) a. S is TRUE (and ~S FALSE) iff all WE's of S are true.

b. S is NOT TRUE (and ~S NOT FALSE) iff any WE of S is false.

(ii) a. S is FALSE (and ~S TRUE) iff any SE of S is false.

b. S is NOT FALSE (and ~S NOT TRUE) iff no SE of S is false.

(iii) S (and ~S) is NOT TRUE and S (and ~S) is NOT FALSE iff some WE of S is false but no SE of S is false.

There it is seen that S and ~S lack a truth value under the same condition, namely: if and only if the only false entailments of S are base-presuppositions of S (in other words, if and only if there is no false strong entailment of S but there is a false weak entailment of S). Thus, by the RLDP, it is the case that

(4) S lacks a truth value iff ~S lacks a truth value.

(For convenience, I shall occasionally refer to what is expressed in (4) as 'the shared property' of S and ~S.)

(4), incidentally, is consistent with our criterion that only classical negation - which is nothing other than a function mapping truth onto falsity and vice versa - be included in a two-valued gapped logic. Thus negation is as in (5):

(5)

A	~A
T	F
F	T
3	3

(5) appears to be the familiar negation of the SLDP. However, this is more a matter of appearance than anything else. Under the SLDP (5) means that a negative sentence shares the presuppositions of the sentence it negates. But we have just shown (in I) that, as far as BASE presupposition is concerned, (5) does not have this interpretation under the RLDP. Whereas under the SLDP the third logical status is a necessary and sufficient condition of presupposition failure, under the RLDP it is neither a necessary nor a sufficient condition of base-presupposition-failure. Under the RLDP, both positive and negative sentences may lack a truth value; but lack of truth value in a POSITIVE sentence is not a necessary condition of base-presupposition-failure in that sentence, and lack of truth value in a NEGATIVE sentence is not even a sufficient condition of base-presupposition-failure in that sentence, since negative sentences do not have base-presuppositions as defined. I return to the matter shortly.

I now define a relation of GENERALISED PRESUPPOSITION in terms of the shared property precipitated by the RLDP. As mentioned, it is in terms of the notion of generalised presupposition that the RLDP is seen to predict the full range and character of intuitively attested presuppositions. Since we are insisting that an INTUITIVE PRESUPPOSITION of S be an INTUITIVE IMPLICATION of S, and since the property utilised in the definition of generalised presupposition is indeed shared between S and ~S, the definition commits us to the prediction that ~S, as much as S itself, INTUITIVELY IMPLIES the BASE-PRESUPPOSITIONS of S. As mentioned, III is devoted to the

discussion of how this commitment is met by the theory; in the meantime (in advance of that discussion) however, the reader is going to have to take the 'generalised presupposition' defined in (6) as a purely theoretical entity.

(6) S2 is a GENERALISED PRESUPPOSITION OF S1 if and only if the falsity of S2 renders S1 liable to lack of truth value.

The expression "renders...liable (to lack of truth value)" sounds vague and imprecise. Out of context of the RLDP, (6) in itself is indeed vague. This is because it presupposes an independent statement of the necessary and sufficient conditions for a sentence to lack a truth value. These are explicitly provided by the RLDP itself; that expression is provided with a precise interpretation by reference to the consequences of the RLDP as these are spelt out in (5) of the last chapter, repeated above. It is precisely because (6) does depend on an independent logical specification of the conditions under which a truth value gap is induced, that (6) cannot itself serve as the base definition of presupposition under the theory. Inspection of that table shows that, if S1 base-presupposes S2 then both S1 and ~S1 have S2 as a generalised presupposition.

Before demonstrating that generalised presupposition as defined in (6) is characterised by the theory as being systematically correlated with an intuitive IMPLICATION from ~S1 to S2, it is worth considering what (6) in itself tells us about the general theory of presupposition induced by the RLDP, in particular about the relation between lack of truth value and base presupposition-failure.

In aid of this, I shall introduce some special terminology. I noted earlier that, under the RLDP, lack of truth value in a

sentence (~)S is neither a necessary nor sufficient condition of BASE presupposition-failure in (~)S. The RLDP may thus be described as a LOGICALLY DIVERGENT theory of the relation between the third logical status and presupposition-failure. (This is why it is empirically consistent with a system of connectives (adopted by Van Fraassen) in which the third logical status is what Seuren would call "non-infectious".) Nevertheless, I am of course accepting the existence of an empirically attested Truth Gap Intuition (TGI). Furthermore, I concede that it is, in some sense, a CONVERGENT INTUITION (i.e. that there is a convergence between intuitions of presupposition-failure and intuitions about truth-value gaps).

In contrast to the RLDP, the SLDP may be described as a LOGICALLY CONVERGENT theory of that relation. Indeed, a logical theory of presupposition in which S1 is predicted to INTUITIVELY presuppose S2 if and only if S1 presupposes S2 by the logical definition, such as the SLDP, must be LOGICALLY convergent if it is to be INTUITIVELY convergent. We have seen, in effect, that the particular form of intuitive convergence predicted by the logically convergent SLDP is strict and absolute: S actually has the third logical status if and only if S suffers from (standard) presupposition-failure. (I shall call this 'STRONG' convergence.) Thereby the SLDP models one particular Truth Gap Intuition.* This particular TGI, however, is not the only possible one, nor is it the only possible CONVERGENT one. In other words, strong convergence is not the only possible kind of convergence. In point of fact, that particular TGI appears NOT to be the empirically attested Truth Gap Intuition. This, I will suggest, provides the source of the kind of intuitive counter-examples to the SLDP cited by Kempson 1975, among

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*The earlier demonstration that, under the SLDP, it cannot in fact be construed as a truth-value GAP (but must be construed as a third truth value) is beside the point in the present context.

others. And Strawson 1964 concedes as much in respect of simple sentences. (Chapter IX is devoted to the issue.) To be more specific, while the empirically attested TGI is convergent, it is not strongly convergent, as it is predicted to be by the SLDP (by means of its blanket prediction). These observations rather strongly suggest it is empirically NOT DESIRABLE for a logical theory to predict INTUITIVE convergence by way of LOGICAL convergence, for it precipitates too strong a convergence.

(6) shows that, in addition, it is NOT NECESSARY for a theory to predict intuitive convergence by means of logical convergence. (6) characterises a distinct, but nevertheless convergent, Truth Gap Intuition. But the convergence it characterises is more general (less absolute, weaker, more subtle). I shall call it just 'convergence' or, where necessary, 'weak convergence'. On the one hand, it is convergent in the sense of tying lack of truth value to the failure of intuitive presupposition. On the other hand, the convergence is 'weaker' (and more subtle) because it is a convergence, not between intuitive presupposition-failure and ACTUAL lack of truth value, but between intuitive presupposition-failure and LIABILITY to lack of truth value.

Strong convergence asymmetrically entails (weak) convergence - which is why I have used those terms. In this respect, then, the TGI predicted by the SLDP is a special (much stronger) case of the TGI predicted by the RLDP. (Actual lack of truth value asymmetrically entails liability to lack of truth value.)

In summary, the RLDP is a LOGICALLY DIVERGENT theory of the relation between truth value gaps and presupposition-failure, but it is an INTUITIVELY CONVERGENT theory of that relation (it is CONVERGENT in its predictions about the relation between truth value gaps and INTUITIVE presupposition-failure). This reconciliation

between logical divergence and intuitive convergence is made POSSIBLE by dropping the (unnecessary) Standard assumption that an intuitive presupposition is predicted to hold from S1 to S2 if and only if S2 directly satisfies the logical definition of presupposition with respect to S1. And this particular means of achieving intuitive convergence is, I suggest, PREFERABLE because the weaker kind of intuitive convergence that it predicts is empirically a more accurate modelling of speaker's truth gap intuitions than the strong convergence modelled by the logical definition of the SLDP.

3. Generalised presupposition and the implication from ~S.

I now discuss (III) the intuitive implication that is characterised by the RLDP as holding from ~S1 to S2 when S1 base-presupposes S2.

What do we already know about the logical relation between ~S1 and S2 when S1 base-presupposes S2? On the one hand, we know that S2 is not a logical entailment of ~S1. On the other, we have seen that the falsity of S2 may render ~S1, as much as S1 itself, truthvalueless (whereas the falsity of a strong entailment of S1 renders ~S1 true). That is, while the truth of S2 is a necessary condition of the truth of S1, the falsity of S2 is NOT a SUFFICIENT condition of the truth of the negation of S1.

From this it follows that the negation of S1 is expressive of and only of the falsity of the conjunct set of the strong entailments of S1. I mean by this that ~S1 is true if and only if the conjunct set of strong entailments (that is, the entailments excluding the base-presuppositions) of S1 is false. Since, by the RLDP, ~S1 cannot be true by virtue of the falsity of just the presuppositions of S1, ~S1 is NOT expressive of base presupposition-

failure in S1. This means that there are entailments of S1 which are not, and by definition cannot be, AT ISSUE in what is nevertheless the negation of S1.

In this respect at least, the RLDP and the SLDP are exactly the same: neither standard nor revised presuppositions of S are subject to the negation in ~S. Let us pursue this comparison of the RLDP and the SLDP.

Under the SLDP, a negative sentence ~S is not expressive of (cannot be true by virtue of) failure of presupposition in S. This means to say that standard presuppositions of S by definition do not come within the scope of negation in ~S. This fact is part and parcel of the idea that standard presuppositions are preserved as such under negation, and thereby of the idea that S and ~S share their standard logical presuppositions.

Under the RLDP, presuppositions of S by definition equally do not come within the scope of negation in ~S. I confess that at one time I was under the impression that it was sufficient, in the light of the contents of the preceding paragraph, to show just this in order to demonstrate that what is base-presupposed under the RLDP by S will be implied by ~S. (Russell 1905, for example, took it that, when S1 logically entails S2, an implication from ~S1 to S2 is modelled simply by excluding S2 from the scope of negation in ~S1). This is not the case, though; indeed it could not be the case since, if it were, it would indicate that the relation between ~S1 and S2 was one of logical entailment. But we have conclusively shown that base presuppositions (weak entailments) of S are NOT logically preserved as such under negation (i.e. are not preserved as weak entailments of ~S).

I suggest that we need to distinguish here between (a) not

being expressive of presupposition-failure and (b) being expressive of presupposition-satisfaction. Under the SLDP, ~S is not expressive of presupposition-failure in S BECAUSE, more strongly, it is expressive of presupposition-satisfaction, rather than conversely. And the standard theory consists in the expression by ~S of presupposition-satisfaction in S. By contrast, the RLDP simply (and more weakly) consists in the non-expression by ~S of presupposition-failure in S.

Methodologically, then, it is not enough in itself to demonstrate that a base-presupposition S2 of S1 falls by definition outside the scope of negation in ~S1 in order to demonstrate that S2 will in some way or another be implied by ~S1. Methodologically, more is required. This is not to say that it is irrelevant that the base-presuppositions of S by definition do not come within the scope of negation in ~S. On the contrary, this exclusion from the scope of negation is fundamental to the further demonstration that ~S1 intuitively implies S2 when S2 is a base-presupposition of S1. I shall now show in what way the existence of an intuitive implication from ~S1 to S2 follows from the fact that a base-presupposition S2 of S1 is excluded from the scope of negation in ~S1.

Up to this point I have been fairly vague about the implication, calling it an 'intuitive implication' or an 'implication of one sort or another'. It is in fact a DEFAULT IMPLICATION. I can best explain what I mean by this by discussing a familiar default implication that arises in the pragmatic domain of conversation. Having done that, I shall discuss the similarity and the difference between this conversational default implication and the presuppositional default implication which is our concern.

Consider the following conversational exchange:

(7) Q: Has Max changed the oil and mended the brakes?

R: He hasn't mended the brakes.

It is uncontroversially the case that (7R), in its context of (7Q), carries the strong intuitive implication that Max HAS changed the oil. This of course is not a semantic implication. Semantically the simple answer "No" is compatible with (a), (b) and (c):

(a) Max has done neither

(b) Max has done the first but not the second

(c) Max has done the second but not the first.

The response given in (7) rules out (c), strongly suggests (b), but is still logically compatible with (a) even though (a) and (b) are mutually incompatible. Since (a) is compatible with the answer given, the suggestion-that-(b) is cancellable, for example by "...and in fact I don't think he's changed the oil either".

This intuitive implication to (b) is a clear case of conversational implicature - with special reference to the Maxim of Quantity. And, like most if not all quantity implicatures, it is a default implication. A simple "No" by way of response, if it conveys anything beyond its semantics (which consists in the disjunction of the negations of the conjuncts specified in the context (7Q)) would implicate that BOTH conjuncts are false (this too is explicable by reference to the Maxim of Quantity). The actual responder has gone beyond a simple "No", taking the trouble to specify the negation of the second conjunct while not mentioning the first. Thereby he implies that the whole conjunction is false specifically (and solely) by virtue of the falsity of the second conjunct. The intuitive implication to the truth of the first

conjunct thus arises by default, by virtue of the fact that the answer actually given is expressive just of the falsity of the second conjunct (is true if and only if Max has not mended the brakes).

The conversational default implication just discussed and the implication which I am claiming holds from ~S1 to S2 when S1 base presupposes S2 are IDENTICAL IN ALL RESPECTS EXCEPT ONE: under the RLDP the latter implication is NOT conversational. The RLDP, in other words, invites us to entertain the idea that, in addition to conversationally driven default implications, there are semantically (truth-conditionally) driven default implications. I shall now justify these remarks. (In reading what follows, the reader may find it helpful mentally to schematise a positive sentence with base -presuppositions as a conjunction of a single such presupposition and a single strong entailment.)

We have seen that the conversational default implication of (7R) in the context of (7Q) arises because (7R) is true if and only if Max has not mended the brakes. That response, in other words, is expressive of and only of Max' failure to mend the brakes. A speaker uttering that sentence in the context of (7Q) implies by default the truth of the first conjunct (that Max has changed the oil) by specifically excluding the first conjunct from the scope of the negation in the response that he does offer. Exactly the same may be said of ~S1 and S2 when S1 base presupposes S2 under the RLDP. ~S1, to repeat, is true if and ONLY if some strong entailment of S1 is false: it is expressive of and ONLY of the falsity of the conjunct set of strong entailments of S1. The weak entailments (presuppositions) are specifically and by definition excluded from the negation.

Now, in the case of (7R) the default implication to Max' having changed the oil arises because of the context in which (7R) is uttered - namely (7Q). And that context includes an allusion to the proposition that Max has changed the oil. Now this context (7Q) is a genuine context - it is constituted independently of what it contextualises, namely (7R). And the implication arises only by virtue of that independent context: discount that context and the conversational default implication disappears leaving just the semantic implication that Max has not mended the brakes. By contrast, under the RLDP, by virtue of the fact that it is THE negation of S1, ~S1 constitutes IN AND OF ITSELF the "context" in which S2 is seen to be specifically excluded from the scope of negation. The default implication to S2 arises not from an independent context but from the semantics of the very sentence (~S1) itself, from the fact that ~S1 (and only ~S1) is nothing other than the negation of S1 (where S2 is a (weak) entailment of S1). Were we to attempt to discount whatever it is in ~S1 that is the parallel of (7R)'s context and is thereby responsible for the default implication from (7R), we would effectively have to discount the very semantics of ~S1 under the RLDP: that is, we would have to discount the fact that ~S1 is the negation of S1. In that case there would be nothing left over to talk about. The "context" that drives this default implication is constituted in the very semantics of ~S1 itself. Since ~S1 constitutes its own "context" in this respect and, since the notion of something constituting its own context is neither a legitimate nor coherent application of the concept of context, we are entitled to conclude that, in contrast to the conversational default implication discussed earlier, this particular default implication is NOT context-dependent.

We have seen that, in addition to being context-dependent, the conversational default implication from (7R) is cancelable (in fact

this can be seen as a matter of context-dependence also - see Gazdar 1979). In other words, there is no semantic obligation on the utterer of (7R) to implicate that Max has changed the oil. More generally, and very obviously, there is no semantic obligation on any responder to (7Q) who wishes to give an answer that negates or entails the negation of the conjunction to imply that Max has changed the oil. The implication that arises from the actual response given arises from the responder's intentional CHOICE in specifically excluding the first conjunct from the scope of his negative response. By contrast, under the RLDP, the exclusion and hence the default implication are NOT AT CHOICE. There is no negation of S1 but ~S1 and, in ~S1, S2 (as a base presupposition of S1) is semantically (not conversationally) excluded from the scope of the negation. The default implication is thus semantically driven, is not subject to utterer's decision, is not subject to cancellation.

I am satisfied that the discussion has established that it does indeed follow directly from the RLDP that, where S1 base-presupposes S2, it is quite clearly predicted that ~S1 intuitively implies S2. Let me now summarise what we know about this intuitive implication as it is characterised under the the revised theory of presupposition.

(a) it is directly correlated with S2 being a generalised presupposition of ~S1. That is, it is semantic. It is even truth-conditional to the extent that the falsity of S2 renders ~S1 liable to lack of truth-value, and hence actually lacking in truth-value in some circumstances.

(b) Yet, as an implication, it is NOT truth-conditional; i.e. it is not (even) a weak entailment of ~S1 (since ~S1 may be true

when S2 is false).

(c) It is a default implication of a kind already familiar to us from the study of pragmatic, conversational implication.

(d) Yet it is not conversational.

This is as much as I know about it. If we were to summarise these points by saying that the implication is semantic but non-truth-conditional, this would invite comparison of the implication with conventional implicature. Leaving aside any question of the accuracy of that summary, there would seem little reason not to characterise the implication as a conventional implcature, since not much is known about conventional implicature other than that it is semantic and non truth-conditional. By the same token, however, the observation is of little explanatory value in this context since it seems to me that we know more about this particular implication than we know about conventional implicature. For example, we know that it is a default implication; furthermore, we are in a position to give a quite precise account of how it arises and how it meshes with the truth conditional semantics of S and ~S as these are characterised by the revised theory of presupposition. Assigning the implication to the non truth-conditional, non-conversational waste-paper basket of semantic convention does not, for example, explain how, if it is not truth-conditional, it is not cancellable without contradiction (Karttunen & Peters 1979:2) - for contradiction is a logical, and hence truth-conditional, concept. What is a semantic but non-truth-conditional contradiction? Concomitantly, Karttunen & Peters 1979:12 also assert that a speaker asserting A, where A conventionally implicates B, is COMMITTED to B, failing to note that commitment to B is commitment to the TRUTH of B; commitment is thus, at least in part, a logical, and hence truth-conditional, concept. This is the general conceptual problem that

is raised (in my mind at least) by the concept of conventional implicature.

Karttunen & Peters, of course, propose that some central cases of presupposition (including those induced by referring expressions) be treated as conventional implicatures (1979:48). Wilson and Sperber's 1979:301 remarks on this idea are very much to the point, in particular their contention that this proposal results in no clarification of their status. It should be noted, incidentally, that in order to characterise the implication from ~S1 to S2 as a conventional implicature, Karttunen & Peters are obliged to characterise the implication from S1 to S2 as conventional as well. This is a very radical move indeed, at variance both with presuppositional and counter-presuppositional theories, but one that might be justified if it had any explanatory power. But, in this context, the appeal to conventional implicature as such constitutes, in my opinion, a very positive RETREAT from explanation. It appears to me that, to the extent that the implication from ~S1 to S2 as characterised by the Revised theory is accurately summarised as a semantic but non-truth-conditional implication, then the Revised theory provides a much more clearly delineated explanation of the implication from ~S1 to S2 than Karttunen & Peters' theory; it is furthermore a theory that retains the basic assumption of truth-conditional theories (be they presuppositional or counter-presuppositional) that the implication from S1 to S2 at least is a logical, and hence truth-conditional, implication.

The questions posed here require answers of course, but it seems to me that, in the present context, they may be left to stand. I do not have the answers; besides, what was required to be established for the purposes of the revised theory of presupposition has been established. At the risk of repetitiveness, I now

summarise this.

Two things follow most perspicuously from the basic revised logical definition of presupposition as weak entailment: **(i)** If S1 base-presupposes S2, then S1 is predicted to intuitively imply S2; **(ii)** S1 and ~S1 do not share their base-presuppositions. We have nevertheless established **(iii)** that it also follows from the RLDP that, where S1 base-presupposes S2, there is predicted to be an intuitively discernible semantic default implication from the negation of S1 to S2. From (i)-(iii) it follows **(iv)** that although ~S1 does not base-presuppose what S1 base-presupposes, S2 is intuitively implied both by S1 and ~S1 when S1 base-presupposes S2. **(v)** To this extent, the RLDP characterises and predicts the character of intuitive presuppositions but without directly embodying a description of it. **(vi)** The RLDP concomitantly makes directly available the definition of a relation of Generalised Presupposition such that (a) if S2 is a base-presupposition of S1 then S2 is a generalised presupposition of S1 but not conversely (i.e. it is not (necessarily) the case that if S2 is a generalised presupposition of S1 then S2 is a base-presupposition of S1); and (b) nevertheless, S2 is a generalised presupposition of S1 if and only if S2 is a generalised presupposition of ~S1. The relation between base-presupposition and generalised presupposition is thus identical to that between base-presuppositions and the character and range of intuitive presuppositions that are to be predicted. We may thus formulate the predictions of the RLDP in terms of generalised presupposition, as follows:

> B is predicted to be an intuitive presupposition of A if and only if B is a generalised presupposition of A.

It should be emphasised that my use of the term "generalised presupposition" is not theoretically necessary (and hence neither is

the term "BASE (presupposition)"). The RLDP would make exactly the same intuitive predictions even if, in presenting the theory, we did not explicitly avail ourselves of the relation of generalised presupposition that it makes available. However, this notion of generalised presupposition is of great perceptual help since it is in terms of that relation that the salient implications of the RLDP (in particular for negative sentences) are embodied. The notion of generalised presupposition is thus a convenient way of packaging the theory for the purposes of presentation. Most of the ensuing discussion is presented in terms of it.

CHAPTER VIII

PROJECTIVE PROPERTIES OF GENERALISED PRESUPPOSITION

In this chapter I examine the projective properties of generalised presupposition. I show how the distribution of presuppositions in compound sentences and the resolution of presuppositional conflict in compound sentences follow automatically from the definition of generalised presupposition and hence from the RLDP itself. The main point of the discussion is to show that an adequate theory of presupposition should characterise projective properties as following from the concept of presupposition itself rather than attributing them as properties of the connectives. In later sections I show how a theory of presupposition that correctly predicts the presuppositions of compound sentences handles the presuppositions of modal sentences.

1. Conjunction again.

The (revised) base presuppositions of conjunctive sentences were discussed in Chapter VI. In the final analysis, however, it is in terms of the relation of GENERALISED presupposition thrown up by the RLDP that the empirical predictive capacity of the revised theory is to be assessed. Every base-presupposition of S is also a generalised presupposition of S (and of ~S). But, as noted, not every generalised presupposition of S is a base-presupposition of S. (In

particular, if S is negative then it has generalised presuppositions but not base-presuppositions.) Here I briefly show that the results obtained in Chapter VI in connection with the BASE-presuppositions of conjunctive sentences carry over to GENERALISED presuppositions.

Consider the sentences in (1):

(1)

a. There is a king of France.

b. The king of France is bald.

c. The king of France isn't bald.

d. {Saumur / Paris} is the French capital & the king of France is bald

e. {Saumur / Paris} is the French capital & the king of France isn't bald

f. There is a king of France {& / but} {the king of France is / (n't)} bald.

It follows from the fact that (a) is a base-presupposition of (b) that (a) is a generalised presupposition both of (b) and of its negation (c). That is, (c) exhibits the liability to lack of truth value that (b) does.

The second conjuncts of both (d) and (e) thus have generalised presuppositions. The truth table for conjunction indicates that in both (d) and (e) - regardless of the polarity of the presupposition-inducing conjunct - the conjunction as a whole is rendered liable to lack of truth value by virtue of the liability to lack of truth value of their second conjunct, which is turn is due to the falsity of (a). Thus (d) and (e) inherit the generalised presupposition (a) via (b) and (c) respectively.

A conjunction then inherits all the generalised presuppositions of its conjuncts. This, with the exception of conjunctions such as

that in (f). There the falsity of (a) straightforwardly renders (f) false since (a) is the first conjunct of (f) and is therefore strongly entailed by (f). The falsity of (a) does not, therefore, render (f) liable to lack of truth value, but renders it false. As a strong entailment of (f), (a) can neither be a base nor a generalised presupposition of (f).

This establishes that, in terms of generalised presupposition, which is a function of the definition of base-presupposition, the revised theory of presupposition correctly predicts, without special stipulation, the intuitive presuppositions of conjunctive propositions.

2. Disjunction.

It was observed in Chapter III that in CL

(2) A disjunction is TRUE iff at least one disjunct is true and FALSE iff all disjuncts are false.

Assuming (i) the classical propositional equivalences presented in Chapter III, in this case that in (3) below, (ii) the conjunction defined in (6) of Chapter VI, repeated as (4) below, and (iii) the negation defined in (5) of chapter VII, repeated here as (5):

(3) $(A \vee B) \equiv \sim(\sim A \,\&\, \sim B)$

(4)

&	T	F	3
T	T	F	3
F	F	F	F
3	3	F	3

(5)

A	~A
T	F
F	T
3	3

we derive a truth table for disjunction as in (6):

(6)

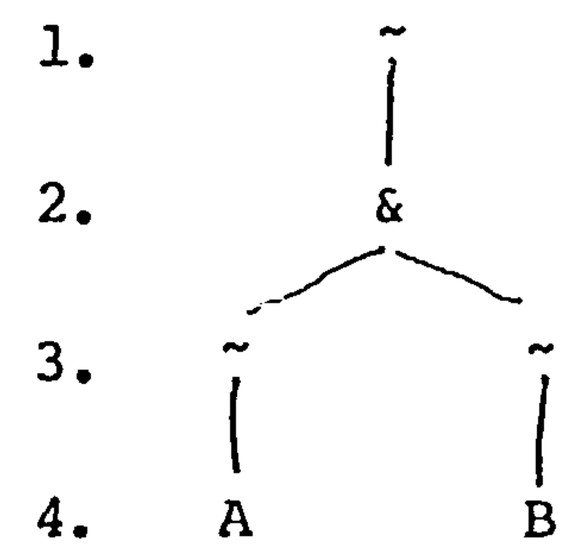
V	T	F	3
T	T	T	T
F	T	F	3
3	T	3	3

Since both the conjunction in (4) and the negation in (5) conform to the classical definitions, it is inevitable that the disjunction in (6) should do so too. The reader may confirm for himself that (2) still holds in (6). A (revised) presuppositional language gives rise to a circumstance in which neither of the conditions defined in (2) is met. This is the circumstance in which there is no true disjunct (and hence the disjunction is not true) and in which it is not the case that all disjuncts are false (and hence the disjunction is not false). In this circumstance, then, the functor defined in (2) fails to yield a truth value. (It is a classical functor but partial with respect to logical statuses other than the truth values.) Thus liability to lack of truth value - and thereby generalised presupposition - is truthfunctionally inherited by a disjunction. This is what is plotted in (6).

For illustrative purposes, I will plot the derivation of this result in terms of the equivalent conjunctive sentence made available by (3) above, namely (7a), which it is convenient to represent as (7b):

(7a) ~(~A & ~B)

(7b)



If C is a base-presupposition of A then C is a generalised presupp-

osition of A (Level 4) and of ~A (Level 3). Likewise for B (L.4) and ~B (L.3). It has just been shown that a conjunction inherits the generalised presuppositions of its conjuncts (L.2). Inheritance from L.2 to L.1 is effected by the application of the same principle as that which effected the inheritance from L.4 to L.3, since L.1 is the negation of L.2. Hence (7a) and any sentence equivalent to (7a) shares the generalised presuppositions of A and of B. [A V B] is equivalent to (7a), hence, in general, disjunctions inherit the generalised presuppositions of their disjuncts.

That there should be an exception to this generalisation about disjunction is predictable from the fact that there is an exception in the conjunctive context. Presuppositions may be filtered in disjunctions as in conjunctions. Since, under the RLDP, the filtering is automatic in conjunction, we may expect the filtering effect of disjunction to follow automatically.

The intuitive datum to be predicted here is the fact that neither (8a) nor (8b) presuppose the presupposition of their second conjunct, namely (8c).

(8)a. Either there's no king of France or he's bald.

b. Either there's no king of France or he isn't bald.

c. There is a king of France.

See also (d):

d. Either the KF is(n't) bald or there's no KF.

There is of course a more natural way of expressing exactly what is expressed by (8a-b and d) in terms of a conditional. This is dealt with shortly. The same filtering phenomenon is exhibited, slightly more naturally, in (9a), which equally does not presuppose what its

second conjunct presupposes, namely (9b):

(9)a Either Max hasn't written a letter of acceptance or it has got lost in the post.

b. Max wrote a letter of acceptance.

In what follows I abbreviate "There is a king of France" as "Exkf(x)", and "The king of France is bald" as "kfb". We saw above that, under the RLDP, neither (10a) nor (10b) inherit the generalised presupposition of its second conjunct, namely (10c):

(10)a. Exkf(x) & kfb

b. Exkf(x) & ~kfb

c. Exkf(x).

Since S2 is a generalised presupposition of S1 if and only if S2 is a generalised presupposition of ~S1, it follows that the negations of (10a) and (10b) - (11a) and (11b) respectively - do not inherit that generalised presupposition either.

(11)a. ~(Exkf(x) & kfb)

b. ~(Exkf(x) & ~kfb)

By de Morgan's law, (11a) and (11b) are respectively equivalent to (12a) and (12b):

(12)a. ~~(~Exkf(x) V ~kfb)

b. ~~(~Exkf(x) V ~~kfb)

By double negation - once in (12a), twice in (12b) - (12a) and (12b) are respectively equivalent to (13a) and (13b):

(13)a. ~Exkf(x) V ~kfb

b. ~Exkf(x) V kfb.

But (13a) is the abbreviation of (8b) and (13b) is the abbreviation

of (8a). In short, the disjunctions in (8) are predicted not to inherit the generalised presupposition (8c) by virtue of the fact that they are logically equivalent to conjunctions already characterised by the RLDP as not inheriting that generalised presupposition.

An alternative and more summary way of presenting this result is by noting that the disjunctions in (8) are TRUE by virtue of the truth of their first disjunct. But the first disjunct is the negation of (8c), where (8c) is the base presupposition of the second disjunct. Since (8a) and (8b) are thus actually TRUE by virtue of the falsity of (8c), they are not rendered liable to lack of truth value by virtue of the falsity of (8c). Hence (8a) and (8b) do not exhibit (8c) as a generalised presupposition.

The fact that has been captured here, without ad hoc post-definitional stipulation or a concomitant loss of truth-functionality, is that all presuppositions of disjuncts are inherited by their disjunction EXCEPT where the negation of the presupposition is strongly entailed by another disjunct. This fact cannot be captured by the SLDP without special stipulation and loss of truth-functionality. In order to capture the fact that all presuppositions of disjuncts are inherited by their disjunction the SLDP is committed to an "infectious" disjunction (in which '3' in a disjunct invariably precipitates '3' for the disjunction). But then special, non-truth-functional account must be taken of the exception.

What is achieved under the Revised theory is achieved by virtue of compatibility between the definition of generalised presupposition and the classical disjunction plotted in the truth table (6) above. That truth table is familiar from the work of Kleene 1938 and Van Fraassen ef 1970 (see Herzberger 1970, Karttunen 1973). Hausser employs it too. In contrast to Kleene, who was not

concerned with presupposition, Van Fraassen 1970 and Hausser 1976 explicitly employ (6) IN CONJUNCTION WITH THE SLDP. This is curious. The SLDP is, as noted, not empirically compatible with that disjunction. In the context of a logically convergent theory such as the SLDP, (6) entails that no disjunction EVER inherits the presuppositions of its disjuncts (the point is noted but very much en passant in Gazdar 1979: 94). This is so because, under the SLDP, presupposition inheritance is to be tracked by and only by the inheritance of the third logical status '3'; but in (6) the disjunction may not be '3' when any disjunct is.

In the disjunctive context particularly, there is a yet more serious aspect of the inadequacy of a theory that includes both the SLDP and a connective in which '3' is, in Seuren's terms, "non-infectious" (i.e. a theory that attempts to reconcile the standard definition of presupposition with the classical disjunction defined in (2)). Under the SLDP, intuitive presuppositions are predicted wholly in terms of weak entailment. It cannot be the case, then, that S1 standardly presupposes S2 if S1 may be true when S2 is false. Now let S1 be a disjunctive proposition and S2 the false presupposition of one of its disjuncts. That disjunct will be assigned '3' by the SLDP, but (6) shows that a disjunction that includes a disjunct assigned '3' may not only have a truth value but may in fact be TRUE. Hence by (6) no disjunction ever weakly entails (and hence never standardly presupposes or (revised) base-presupposes) the presuppositions of its disjuncts.

As noted, Van Fraassen simply ignores this incompatibility of Standard Presupposition and classical disjunction (more generally, the classical connective system). Hausser 1976, on the other hand, appears to be aware of the incompatibility. He informally attempts to reconcile his retention of the strongly convergent Standard

theory of Presupposition with his retention of the non-infectious classical connective system. We have seen that they are not empirically reconcilable. However, it is the overriding thesis of the present work that a logical theory of presupposition can (and, to conform with the criteria for a gapped logic, must) be reconciled with classical logic, but that this can be achieved only by ABANDONING the SLDP in favour of a weaker definition of presupposition in which the third logical status is more genuinely construable as a truth-value gap, precipitated by a classical system that includes that weaker relation of presupposition. I suggest that what Hausser, in effect, sought to achieve is logically achievable, but not without abandoning the SLDP. Hausser's evident reluctance even to entertain this idea (despite its being so clearly indicated by the enterprise upon which he was engaged) provides a rather clear example of the general commitment to Standard Assumption 1, the assumption that the SLDP is necessary component in a logically based theory of presupposition.

Weak entailment provides the basis of both the Standard and the Revised theory of presupposition. Yet we have seen that, given the disjunction in (6), the fact that no disjunction weakly entails the weak entailments of its disjuncts renders the SLDP empirically inadequate but not the RLDP. The crucial difference is that, under the SLDP, S1 is predicted to intuitively presuppose S2 if and only if S2 is a weak entailment of S1. While the revised theory of presupposition is based on weak entailment (the RLDP consists in the contention that there are weak entailments that are not strong entailments), the RLDP precipitates a more general relation of presupposition (generalised presupposition) which is not directly characterisable in terms of weak entailment. It is in terms of this generalised relation of presupposition that intuitive

presuppositions are predicted. And generalised presupposition operates in terms not of actual lack of truth value but in terms of LIABILITY to lack of truth value.

3. Conditionals.

As observed in Chapter III, in CL

(14) A conditional is TRUE if and only if either the consequent is true or the antecedent is false, and FALSE if and only if the antecedent is true and the consequent is false.

Assuming the classical equivalence in (15):

(15) $(A > B) \equiv \sim(A \& \sim B)$

and classical conjunction and negation as before (see (4) and (5) above), a familiar (cf Kleene, Van Fraassen, Hausser) truth table for conditionals is derived as in (16):

(16)

>	T	F	3
T	T	F	3
F	T	T	T
3	T	3	3

(14) still holds in (16) as the reader may confirm. As with the other connectives, a (revised) presuppositional language gives rise to a circumstance in which neither of the conditions defined in (14) is met, namely that in which the consequent is not true nor the antecedent false (hence the conditional is not true) and in which it is not the case that the antecedent is true and the consequent false (hence the conditional is not false). In this circumstance, then, the functor defined in (14) fails to yield a truth value. This is what is plotted in (16). Thus liability to lack of truth value -

and thereby generalised presupposition - is truth-functionally inherited by a conditional.

Conditionals of the kind exemplified in (17), however, do NOT inherit the generalised presupposition (c) of the consequent:

(17) If there is a king of France, $\begin{cases} \text{he's bald (a)} \\ \text{he's not bald (b)} \end{cases}$

c. There is a king of France.

Again, this fact is predictable (i.e. predicted) since, by virtue of the logical equivalences in (18),

(18) a. $(A > B) \equiv (\sim A) \vee B$

b. $(A > \sim B) \equiv (\sim A) \vee (\sim B)$

(17a) and (17b) are logically equivalent to the disjunctions in (8a) and (8b) respectively, which have already been shown not to inherit (17c) (=8c) as a generalised presuppposition.

And again, it should anyway be noted that, by the classical definition of conditionality, both (17a) and (17b) are TRUE by virtue of the falsity of their antecedents. But the antecedent is (17c) itself, the generalised presupposition that is our concern. Since (17a) and (17b) are actually true by virtue of the falsity of (17c), they are not rendered liable to lack of truth-value by virtue of the falsity of (17c). Hence neither (17a) nor (17b) have (17c) as a generalised presupposition.

As with most discussions of the presuppositions of conditionals, this discussion has proceeded on the assumption that the material implication of the standard propositional calculus adequately characterises the semantics of the natural language correlative expression *if...then*. This is a contentious issue, of course, but one which lies beyond the scope of the present

discussion. Two comments seem worth making, though. (a) In a context in which we wish to claim that the semantics of natural language conjunction, negation, and disjunction ARE adequately characterised by the appropriate operators of the standard propositional calculus, it is not clear that we are at liberty to pick and choose among the connectives of that system. (b) In the context of presuppositional logic, I am impressed by the fact that the classical system of connectives that includes material implication, when allowed to operate in conjunction with a more appropriate definition of presupposition (one that does not override or distort the inherent features of that system), does of itself make the correct predictions as to the presuppositions of logically compound sentences, including conditionals. We should be chary of abandoning it.

4. McCawley on multiple compounding.

In this section I briefly rebut a suggestion made by McCawley 1979:372. McCawley effectively contends that, from the fact that a theory captures the filtering of presuppositions in conjunctions and in conditionals, it does not of necessity follow that it captures such filtering in more complex cases, for example cases involving BOTH conjunctions AND conditionals. The example he cites is (19a):

(19a) If Nixon is Jewish, then he loves his mother and regrets that he's Jewish and loves his mother.

This particular example does not appeal to me so I'll change it, in non-relevant ways, to (19b):

(19b) If Jim is a semanticist, then he knows something about logic and regrets that he's a semanticist and knows something about logic.

The facts of the matter are that, while the second conjunct of the consequent of the conditional presupposes that Jim is a semanticist and knows something about logic, the whole conditional (19b) itself does not.

McCawley's contention is expressed in terms of Karttunen's filtering conditions on connectives. He maintains that those conditions "do not account for the filtering in [(19b)] (that is, they incorrectly imply that [(19b)] presupposes that [Jim is a semanticist and knows something about logic]" (p.373). Apparently they

> "provide no way for the antecedent of the conditional and the first conjunct of the conjunction to join forces: ... [Jim is a semanticist and regrets that he's a semanticist and knows something about logic] presupposes that [Jim is a semanticist and knows something about logic] since [Jim is a semanticist] does not entail [Jim is a semanticist and knows something about logic].... [(19b)] will then presuppose that [Jim is a semanticist and knows something about logic] since the antecedent ([Jim is a semanticist]) does not entail the presupposition of the consequent ([Jim is a semanticist and knows something about logic])." (McCawley 1979: 373)

This argument is premissed on what appears to me to be an almost wilful disregard of the fact that if a sentence presupposes a conjunction, it presupposes the conjuncts of that conjunction. I see no reason not to assume that (20) presupposes (21) if and only if (20) presupposes (22) and presupposes (23):

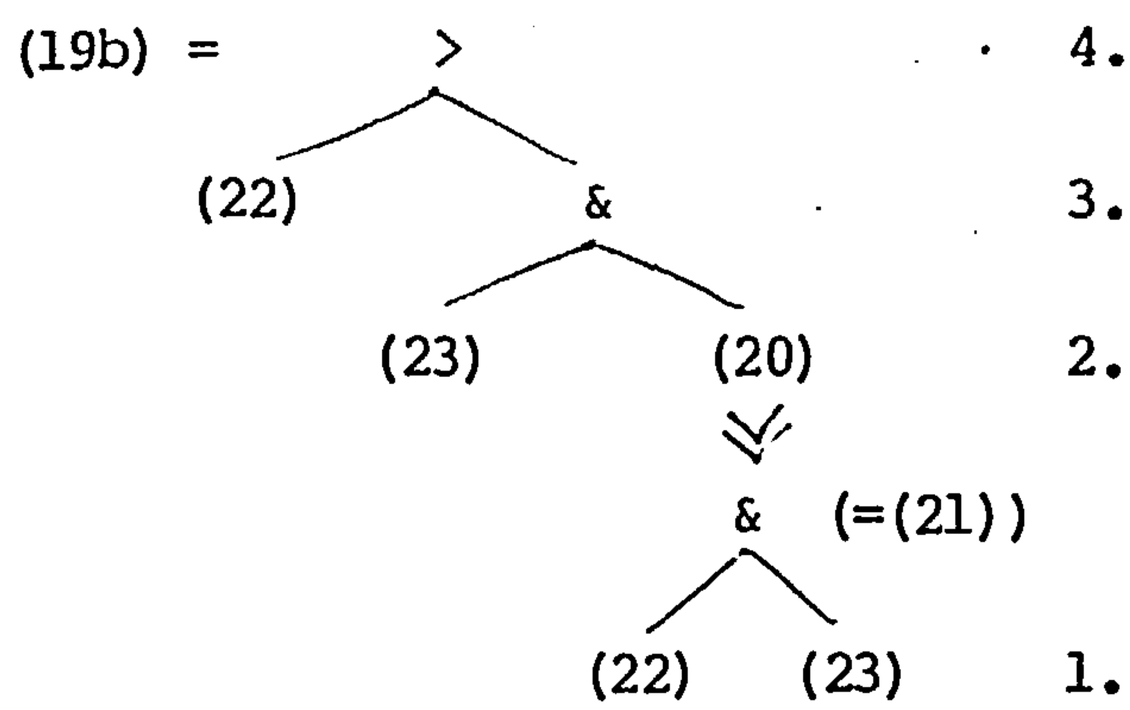
(20) Jim regrets that he's a semanticist and knows something about logic.

(21) Jim is a semanticist and knows something about logic.

(22) Jim is a semanticist.

(23) Jim knows something about logic.

The relevant features of (19b) may be displayed as follows, where '$\Rightarrow$' means "presupposes".



At level 2, since (20) exhibits (21) as a presupposition, it exhibits (22) and (23) as presuppositions. But at level 3, (23) is a strong entailment of the conjunction and hence not a presupposition of that conjunction, by reasoning already presented. Since the conjunction at level 3 does not presuppose (23), it cannot presuppose any conjunction (such as (21)) having (23) as a conjunct. But the conjunction at level 3 does still presuppose (22). Moving up to the conditional at level 4, (22) is the antecedent of that conditional: (22) is thus filtered out as a presupposition of the conditional by reasoning already presented. (19b) is thus predicted not to presuppose either (22) or (23) and this filtering is predicted directly on the basis of the filtering predicted in conjunctions in combination with the filtering predicted in conditionals.

5. Conflicting presuppositions.

One of the more intriguing (and, for the standard theory, problematic) projective properties of presupposition is that when the presuppositions of different atomic sentences conflict with one another, all such presuppositions are filtered out of compound sentences containing those atomic sentences, with a consequent resolution of the conflict. This was first noted by Liberman 1973, and almost en passant by Wilson 1975:81. In particular, it is

discussed by Hausser 1976 and, at great length, by Soames 1979. The phenomenon is illustrated in (24), adapted from Wilson, (25) and (26) from Soames, and (27) from Hausser:

(24) Either John is regretting that he went to the party or he is regretting that he stayed away.

(25) Either the loan company repossessed Bill's only car or they repossessed his second car.

(26) Either Bill spoke to the King of Slobovia or he spoke to the president of Slobovia.

(27) The liquid in the tank has either stopped fermenting or it has not yet begun to ferment.

These disjunctions are truth-functionally transformable into conditionals in which the same phenomenon is observable. For example, (24) is equivalent to (24') and to (24"):

(24') If John's not regretting he went to the party, he's regretting he stayed away.

(24") If John's not regretting he stayed away from the party, he's regretting he went to it.

A logical theory of presupposition that is empirically compatible with the classical connective system, such as that induced by the RLDP, captures these facts automatically and beautifully. I owe my perception of this to the discussion in Hausser 1976. Recall that Hausser there attempts to reconcile the standard theory of presupposition with the classical connective system. The reconciliation, perforce, is non-logical, extra-theoretical and notional, since in terms of the logic of the standard theory itself, the standard definition of presupposition and the classical connective system are NOT empirically compatible.

Nevertheless, it is Hausser's insight that, WERE it somehow or other possible to effect a logically consistent reconciliation between SOME logical definition of presupposition and the classical connective system, it would provide the means of capturing these facts. I shall therefore explain how the revised theory of presupposition captures the facts of the matter by reference to Hausser's example, (27) above. In what follows I have used a pronoun instead of "the liquid in the tank".

Let us assume, with Hausser, that (28) presupposes (28a) and logically asserts/strongly entails (30):

(28) It has stopped fermenting.

(28a) In the past, it was fermenting

(30) It is not fermenting now.

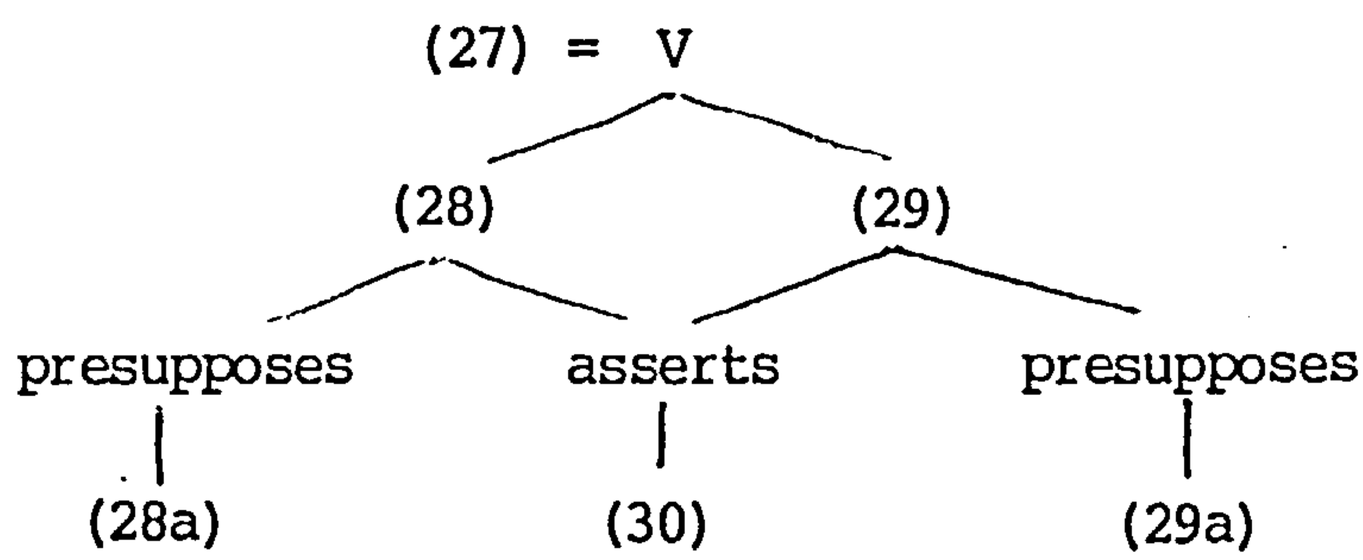
And again, with Hausser, let us assume that (29) presupposes (29a) and logically asserts/strongly entails (30):

(29) It has not begun to ferment.

(29a) In the past it was not fermenting.

(30) It is not fermenting now.

These empirical assumptions (especially that associated with (29)) may be open to question, but that is beside the point in the present context. If the relevant facts are as we are assuming, (27) may be represented schematically as:



where (28a) and (29a) are contradictory.

Clearly, if the strong entailment (30) is false (i.e. if the liquid IS fermenting) then both disjuncts (28) and (29) are false and the whole disjunction (27) is false, for reasons that are independent of the presuppositional status of (27). But let us assume that the liquid is indeed NOT fermenting (i.e. that (30) is true). Now: the liquid either (A) WAS or (B) WAS NOT fermenting in the past. Therefore:

A. If the liquid WAS fermenting in the past, then:

(i) the presupposition (28a) is TRUE, and therefore **(ii)** (28) is TRUE	AND	the presupposition (29a) is FALSE, and therefore (29) LACKS TRUTH VALUE	

and **(iii)** the disjunction (27) is TRUE by virtue of $\sigma[(28)] = T$.

B. If the liquid was NOT fermenting in the past, then:

(i) the presupposition (28a) is FALSE, and therefore **(ii)** (28) LACKS TRUTH VALUE	AND	the presupposition (29a) is TRUE, and therefore (29) is TRUE	

and **(iii)** the disjunction (27) is TRUE by virtue of $\sigma[(29)] = T$.

What this demonstrates is that, in all possible states of affairs (that are relevant to our concern), (27) is either true or false, never lacks a truth value. If the liquid is fermenting, then the whole disjunction is FALSE. But where the liquid is not fermenting (ie. where (30) is true), the falsity of the presupposition of the second disjunct renders the first disjunct, and hence the whole disjunction, TRUE - while the falsity of the presupposition of the first disjunct renders the second disjunct, and hence the whole disjunction, TRUE.

In summary, under the circumstances considered, (27) is not

rendered liable to lack of truth value by virtue of either the falsity of (28a) or the falsity of (29a). Hence neither (28a) nor (29a) satisfy the definition of generalised presupposition with respect to (27), and thereby the filtering of conflicting presuppositions in compound sentences is captured automatically. I am not aware of any simpler internally consistent treatment of this phenomenon.

In the above exposition I have assumed that all other presuppositions are satisfied, since they are irrelevant to the matter of presuppositional conflict. (27) of course is still liable to lack of truth value by virtue of presupposing (31), for example, and this is as it should be.

(31) There is liquid in the tank.

6. Modality: the basic case.

In this and the next section I deal with aspects of the logic of presupposition which, with one important exception, do not differentiate the Standard Theory and the Revised Theory presented here. They may thus be seen as a general defence of the logically based (semantic) approach to presupposition.

In the general criticism that a semantic approach to presupposition has attracted, the following fact has received more than its fair share of attention (see eg Karttunen 1971, 1973).

(32) Sentences of the form <u>possible</u> <u>A</u> intuitively inherit the presuppositions of A notwithstanding the fact that <u>possible</u> <u>A</u> does not (even weakly) entail A.

That is, a theory of presupposition must be capable of giving an

explanation of the intuitive validity of (33) (taken from Karttunen 1973)

(33) a. A presupposes B

b. A is possible.

c. Therefore B.

Karttunen comments:

"By defining presupposition in terms of entailment...one can only justify a weaker conclusion, namely (c')

c'. Therefore B is possible.

...Contrary to what is claimed in Karttunen 1971 I do not think that the intuitive validity of [(33)] can be accounted for by giving a more adequate semantic definition of presupposition." (1973:171)*

This putative problem for truth-conditional definitions of presupposition led Karttunen 1973 to assign possible (and other modal expressions that might be taken to be equivalent to it eg may, might, maybe, perhaps) to an ad hoc (non-semantic) category of 'holes' (presupposition-inheriting predicates). And generally (32) has been taken to demonstrate the impossibility of any theory of presupposition based on entailment.

Even on methodological and prima facie grounds, this suggestion strikes me as misconceived. We have seen that the definition and resulting truth table for disjunction, for example, constitutes a logically coherent algorithm capturing the fact that a disjunction inherits the presuppositions of its disjuncts and it does this notwithstanding the fact that a disjunction does not (even weakly) entail its disjuncts. Yet the issue that has received most

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* The "more adequate semantic definition" alluded to here is: A presupposes B iff possible-A implies B and possible-not-A implies B (Karttunen 1971). This definition of presupposition simply describes that phenomenon which Karttunen regards as constituting a problem for the SLDP itself. Why this should count as giving a more adequate definition is not clear to me.

attention in connection with the Standard theory's treatment of the presuppositional behaviour of disjunction is not this, but the fact that the standard definition makes the wrong predictions as to the CONDITIONS under which presuppositions are inherited by a disjunction.

That particular problem does not arise under the revised theory presented here. But, independently of this distinction between the SLDP and RLDP, we know that there is at least one case (namely disjunction) in which it is not incompatible with a logically based theory of presupposition that a sentence A should inherit the presuppositions of a sentence that is A's constituent but which A does not entail. I conclude from this that no prima facie case against a logically based theory of presupposition can be constructed on the basis of the phenomenon described in (32).

My use of disjunction to illustrate this point is advised. In fact my present purpose is to argue that any theory that captures the presuppositions of logically compound sentences thereby captures the fact that possible A inherits the presuppositions of A. In this section I establish that this is so in the basic case before turning (in the section that follows) to the issues raised by more complicated cases involving possible.

It is well recognised (see, for example, Horn 1972:Ch.2, 1973:208, Burton-Roberts 1984:III) that necessity ($\Box$) is the modal analogue of conjunction, and possibility ($\Diamond$) the modal analogue of disjunction. We have seen that conjunction is definable in terms of universal quantification over constituent sentences: necessity is definable in terms of universal quantification over possible worlds ($\Box$ A = 'A is true in all possible worlds). Disjunction, we have seen, is definable in terms of existential quantification over

constituent sentences: possibility is definable in terms of existential quantification over possible worlds ($\Diamond$A = there is at least one possible world in which A is true). Thus the following hold:

(34) a. $\Box$A entails $\Diamond$A.

b. &(...A...) entails V(...A...).

(35) a. $\Box$A entails A but $\Diamond$A does not entail A.

b. &(...A...) entails A but V(...A...) does not entail A.

(34)-(35), *inter alia*, are a function of the fact that the semantic relations between $\Box$ and $\Diamond$, and between & and V are merely examples of a very general de Morgan's equivalence, expressible as in (36), where O_1 and O_2 are variables over the relevant operators:

(36) $O_{1(2)} \ldots \quad = \quad \sim(O_{2(1)} \ldots (\sim \ldots))$

For example, just as conjunction (disjunction) is definable in terms of a negation within the scope of disjunction (conjunction) which is in turn in the scope of negation, as in

(37) (A & B) = ~(~A V ~B)

(38) (A V B) = ~(~A & ~B)

so $\Box$ ($\Diamond$) is definable in terms of a negation within the scope of $\Diamond$ ($\Box$) which is in turn in the scope of negation:

(39) $\Box$A = ~$\Diamond$~A

(40) $\Diamond$A = ~$\Box$~A

We have seen that the inheritance of generalised presupposition in disjunctions is predictable - at least from the base (and hence generalised) presuppositions of conjunctions. That $\Box$A should inherit the presuppositions of A is unproblematic both in itself

(because it entails A) and by virtue of being the modal analogue of conjunction. $\Diamond A$ bears the same relation to $\Box A$ as V(...A...) bears to &(...A...), and the same relation to V(...A...) as $\Box A$ bears to &(...A...).

Given these well-established facts it would, from the point of view of a logically based theory of presupposition, be extraordinary and highly problematic were it not the case that $\Diamond A$ empirically (intuitively) inherits the presuppositions of A. This, then, is the general prima facie argument to the effect that the presuppositional behaviour of possible is not only compatible with a theory of presupposition based on entailment but naturally predicted by such a theory.

As to the actual mechanics of the prediction, these are readily apparent as being constituted in the equivalence expressed in (40) above, repeated here. In (41) the left-hand side of the equivalence is factored out into 'levels':

(40) $\Diamond P = \sim \Box \sim P$

(41)

~	4.
|	
$\Box$	3.
|	
~	2.
|	
P	1.

At level L1 let P exhibit a base-presupposition Q. Then P exhibits Q as a generalised presupposition. As discussed above, for any A, the negation of A shares the generalised presuppositions of A. L2 is the negation of L1; hence L2 inherits the generalised presupposition Q. Inheritance by L3 of the generalised presupposition exhibited at L2 is effected by virtue of the axiom of necessity ($\Box A > A$); i.e. L3 semantically entails L2. Inheritance by L4 of the generalised presupposition exhibited at L3 is effected

by the same principle as that invoked for the inheritance by L2. Hence, at 4, $\sim\Box\sim P$ inherits the generalised presuppositions of P. But $\sim\Box\sim P$ is the definition of $\Diamond P$. Hence $\Diamond P$ is predicted to inherit the generalised presuppositions of P.

Given the standard definition of possibility in terms of necessity and negation, it is inevitable that any property of P that is shared by its negation will also be shared by $\Diamond P$.

This observation applies both to standard presuppositions and to the generalised presuppositions of the revised theory. However, we shall shortly see that it has a general implication in the context of the standard theory which it does not have in the context of the revised theory. A proper examination of this implication lies beyond the scope of the present discussion. In what follows I shall do no more than outline what seem to me to be the bare essentials of the matter.

Gazdar (1979b: 92) observes "Proof that [(possible A)] cannot semantically presuppose [the presuppositions of (A)] if the possibility operator is taken to be that of S5 can be found in Thomason 1973." (In referring to semantic presupposition here, Gazdar is referring to a (standard) concept of semantic presupposition in which if A does not weakly entail B then A cannot semantically presuppose B.) Now Thomason does indeed provide such a proof (pp 12-3). The implication of the above result, then, is that the appropriacy of S5 is brought into question by the standard theory. Since S5 is commonly regarded (though not universally - cf Hughes and Cresswell 1968: Chs. 3,4) as the simplest and most intuitive modal system, this implication is of some importance.

The crucial feature of S5 is this. In S5 the accessibility relation between possible worlds is universal and absolute. By this

I mean that it is transitive, symmetric, and reflexive. Each and every possible world is accessible to each and every world including itself. Thus what is true in one possible world is at least possible in EVERY other world. With the result that the characteristic thesis of S5 is:

(42) $\Diamond p = \Box\Diamond p$.

(What is possible is necessarily possible - and of course conversely).

In presenting Thomason's proof, I will take (43)-(45) as my examples:

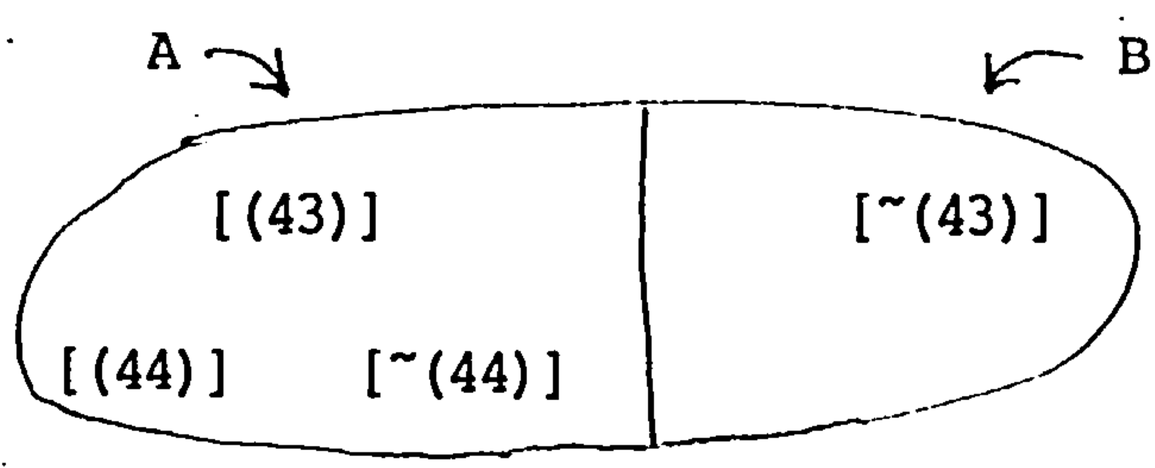
(43) There is a king of France.

(44) The king of France is bald.

(45) It's possible that the king of France is bald.

(43) effects an exhaustive and non-intersecting division of the set of all possible worlds into a (sub)set A in which (43) is true and a (sub)set B in which it is not. The set of worlds in which (43) is true is a set consisting of worlds in which (44) is either true or false. In a logical system admitting of truth value gaps, the set in which (43) is false is a set consisting of worlds in which (44) is undefined. Picture this as in (46):

(46)



Since the set of all possible worlds is one constituted by the union of A and B and, since in S5 each world in that set is accessible to every other world including itself, it follows that

the worlds in which (43) is true are accessible to those in which it is not (A and B are mutually accessible). But every world in which (43) is true is a world in which either (44) or ~(44) is true. From this it follows that the possible worlds in which (44) is true are accessible to the worlds in which (43), as the presupposition of (44), is false. This means that, even in worlds in which (43) is false, (44) is possible (true in some accessible possible world). Hence the truth of (45) is compatible with the falsity of (43). In an ordinary S5 system, then, Possible-A does not weakly entail the presuppositions of A and hence cannot standardly presuppose them.

Standard presupposition thus implies a modal system that is at least a modification of S5. Revised presupposition does not have this implication. Under the revised theory, the presuppositions that possible-A inherits from A are GENERALISED presuppositions, and generalised presuppositions need not be (and, in the case of possible, are not) weak entailments. Given the intuitive centrality of S5, the fact that the Revised theory succeeds in capturing the presuppositional behaviour of possible WITHOUT bringing S5 into question might appear to count rather strongly in favour of the revised theory as against the standard theory. However, it is not clear to me, as it appears to be to Thomason, that S5 should be taken for granted, particularly in a context in which presupposition (of any kind) is taken into account. I will explain this remark by means of a brief examination of the modification of S5 that is implied by the standard theory.

The standard theory implies, in particular, that the accessibility relation between worlds be defined and constrained in terms of the relation of presupposition. This would amount to establishing presuppositionally-bounded subsets of worlds (A and B in the above example) which are mutually INaccessible. (There is

incidentally no reason not to assume that each such subset is an S5 system.)

This would have the effect of making those worlds in which either (44) or its negation is true accessible only to those worlds in which (43) is true. Thus (44) and its negation are only (seen to be) possible (true in some accessible possible world) for worlds in which (43) is true. This does not seem totally implausible.

Concomitantly, the worlds in which (43) as a presupposition of (44) is true would ALL be accessible ONLY to each other (i.e. each in A to all and only those in A). This has the result that (43) acquires the status of a necessary truth in A (i.e. in those worlds in which it is possible).

Furthermore, as already been observed in Ch. IV: in a gapped logic maintaining truth-functionality, [(44) V ~(44)] is true (logically so) only on the assumption that the presuppositions of (44) - eg (43) - are true. That is to say, [(44) V ~(44)] is true only in that presupposition-bounded set of mutually accessible worlds defined by (43). And [(44) V ~(44)] is true in ALL those worlds. This, combined with our earlier observation that (43) is necessary in A, would yield the satisfactory result that [(44) V ~(44)] is necessary in and only in a set of worlds in which its presuppositions are necessary!

By this modification, we derive a modal reconstruction of the distinction between a (strong) entailment, q of p, and a standard presupposition, r of p, such that, while p is true only in those worlds in which both q and r are true, r as a presupposition of p renders worlds in which ~r is true INACCESSIBLE to the worlds in which p is true. But q, as an entailment of p, does not have a comparable effect: the worlds in which ~q is true remain accessible

to those in which p is true.

It appears to me that the driving force, the rationale, of this modification of S5 is not entirely lacking in plausibility. It amounts to the not unreasonable idea that one's powers of conceiving of alternative states of affairs is circumscribed by what one presupposes/takes for granted. This perhaps rather bland observation, and the observed properties of the modified S5 system here envisaged, are in fact entirely consistent with the (independent) pretheoretical account of the nature of presupposition offered in Chapter III.5. Recall that it was suggested there that to ASSERT P is to be committed to P while COUNTENANCING the possibility that P might be false, but to PRESUPPOSE P is to be committed to P while NOT COUNTENANCING the possibility that P might be false. This idea is rather closely reconstructed in the modification here considered.

It should anyway be noted that there nothing extraordinary in the general idea of modal presupposition-bounding. The unmodified S5 system that is taken for granted by Thomason is itself a presupposition-bounded modal system. That system is defined and circumscribed by the set of valid propositions. In an unmodified S5 system, a world i is in the system if and only if all the valid propositions are true in i and in all the worlds accessible to i. A world in which a valid proposition is false is to not accessible to i and hence, from the viewpoint of i and its mutually accessible co-worlds, is not a possible world. But, as already noted, all valid propositions satisfy the definition of presupposition with respect to every proposition (i.e. they are trivial presuppositions). Hence an unmodified S5 system is "trivially" a presupposition-bounded modal system. In the present context, though, this is no trivial matter.

The difference between this "trivial" presupposition-bounding and the "non-trivial" presupposition-bounding envisaged above is that the former defines a UNIQUE set of possible worlds: all the valid propositions satisfy the definition of presupposition with respect to the same single (universal) set of propositions. Non-trivial presupposition, on the other hand, is a proposition-specific and hence variable relation. Each proposition defines, in terms of its own particular non-trivial presuppositions, its own particular presupposition-bounded set of accessible worlds. And each such presupposition-bounded set may or may not overlap and/or be consistent with any other such set.

This is merely the roughest of sketches of the S5 modification that seems to be implied by standard presupposition, and I shall not pursue its ramfications further here - in part because they are not relevant to the revised theory of presupposition. I confess to being somewhat relieved that the revised theory of presupposition does not commit us to such modal complications. On the other hand, as my latter remarks may have indicated, I am not sure that these complications of modality should not be implied by ANY properly worked-out theory of presupposition. In this connection, a suggestion of Rescher's is relevant: "a correct understanding of the nature of presupposition requires the use of modal concepts" (1960:527).

7. Compound modal cases.

The foregoing section established, inter alia, that under both the standard and revised theories of presupposition, the presuppositions but not the strong entailments of A are correctly predicted to be inherited by <u>possible A</u>, at least in the basic case considered. In

this section I deal with two types of example (first noted by Liberman 1973) which have been viewed as posing a particular projection problem for certain theories of presupposition. They are represented by (47) and (48):

(47) It's possible that John has children and it's possible that they are away.

(48) It's possible that John doesn't have children but it's possible that they are away.

The significance of (47) is that intuitively it does not presuppose the presupposition of its second conjunct, namely (49):

(49) John has children.

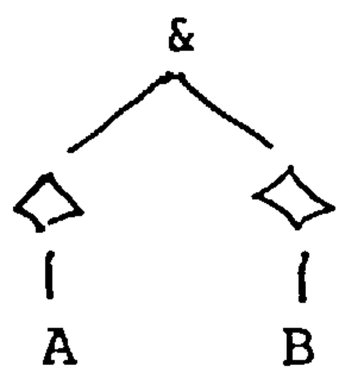
This datum might be taken to be problematic for the revised theory because the filtering exhibited in (47) is reminiscent of the filtering exhibited in non-modal conjunctions such as (50):

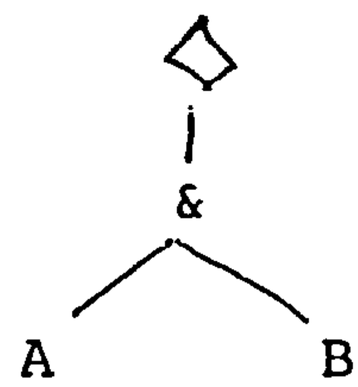
(50) John has children and his children are away.

Recall that the filtering in (50) is straightforwardly explained by the fact that (50) strongly entails (49) and, in doing so, cannot presuppose it under the revised theory. In (47), however, since the conjuncts are modal, (49) is not a strong entailment of the first conjunct: [possible A] does not entail A. It might appear, then, that the revised theory fails to predict the intuitive filtering in (47).

The most natural move to make in explanation of this filtering is to analyse (47) - with the two possible's inside the scope of the conjunction - as being equivalent to (51), where the relative scopes of modality and conjunction are reversed:

(51) It's possible that John has children and they are away.

(47') 

(51') 

Then the filtering of the presupposition (49) is captured at the (lower) level of the conjunction, just as it is in (50), and, since on this analysis the (conjunctive) complement of possible does not exhibit (49) as a presupposition, neither does (51) or, therefore, (47) itself.

Gazdar (1979b:112) considers this explanation in the context of his critique of Karttunen and Peters 1977. He comments: "It is not really open to Karttunen and Peters to claim that such sentences actually map in semantic representations in which there is only one modal operator outside the scope of the conjunction, since they would then be faced with the job of explaining why [(52)] and [(53)] are not synonymous":

(52) It is possible that John has children and it is possible that he is childless.

(53) It is possible that John has children and is childless.

Gazdar is mistaken in this. It is true that (54)

(54) $(\Diamond p) \ \& \ (\Diamond q) = \Diamond(p \ \& \ q)$

is not a theorem of orthodox modal systems (see Hughes and Cresswell 1968:34, 37-8); that is, it is not the case that every formula of the form $[(\Diamond p) \ \& \ (\Diamond q)]$ is equivalent to a formula of the form $\Diamond[(p \ \& \ q)]$. This is precisely because of cases such as (52)/(53), in which p and q are inconsistent. But it does not follow from this that NO such pairs of formulae are equivalent. On the contrary:

where either p or q (strongly or weakly) entails the other, as in our example (47), it is clear that such a pair of formulae will indeed be equivalent, as I now demonstrate. Given the propositional equivalence (55)

(55) $(A > B) \equiv ((A \& B) \equiv A)$

we may substitute (A & B) for every occurrence of A when A implies B. Now set A to $(\Diamond p)$, and set B to $(\Diamond q)$. In respect of our example (47), p implies q. It follows from this that $(\Diamond p)$ implies $(\Diamond q)$ - see Hughes and Cresswell 1968:31, T8 ($(p \prec q) > (Mp > Mq)$). Hence, by (55), (56) and (57) are equivalent.

(56) $(\Diamond p) \& (\Diamond q)$

(57) $(\Diamond(p \& q)) \& (\Diamond q)$.

Furthermore, given T10 of Hughes and Cresswell 1968:37:

(58) $\Diamond(p \& q) > (\Diamond p \& \Diamond q)$

and the equivalence in (55) again, (57) is itself equivalent to (59):

(59) $\Diamond(p \& q)$

Thus when p implies q, (56) and (57) are equivalent and (57) and (59) are equivalent. Hence when p implies q, (56) and (59) are equivalent. But (56) is the form of (47) and (59) is the form of (51). Hence (47) and (51) are indeed equivalent. The non-equivalence of (52) and (53) has no bearing on this result.

In conclusion, the proven equivalence of (47) and (51) constitutes the natural (indeed inevitable) explanation of the filtering exhibited by the former.

I turn now to (48), repeated here:

(48) It's possible that John doesn't have children but it's possible that they are away.

This example exhibits the same filtering of the presupposition (of the second conjunct) that John has children exhibited by (47). The explanation provided for the filtering in (47), however, is not directly available in this case because (48) is not logically equivalent to (60), which would be required by such an explanation.

(60) It's possible that John doesn't have children and they are away.

(60), but not (48), is necessarily false.

I have said that that explanation is not 'directly' available; but, as this implies, I believe the filtering exhibited in (48) is attributable, though more indirectly, to the same conjunctive filtering appealed to (by means of the reversal of modal and conjunctive scopes) in the case of (47). The indirectness involved is due to the fact that this claim depends on establishing an appropriate relationship between the first conjunct of (48) and that of (47). If that can be established, I shall feel entitled to suggest that (47) and (48) should be treated in essentially the same manner. In the first instance, I shall draw attention to the PRAGMATIC relation between the first conjuncts of (47) and (48). In due course, though, I shall strengthen the argument by showing that, in this particular case, the relation is not simply pragmatic, but semantic.

It is uncontroversial (cf Fogelin 1967, Horn 1972, 1973, Gazdar 1979 among others) that, while sentences of the form of (61) and (62)

(61) Possible A

(62) Possible ~A

are semantically independent of each other, utterances of such sentences are pragmatically related.* In fact, as discussed in Burton-Roberts 1984, they are pragmatically equivalent; utterances of sentences of the form (61) conversationally implicate sentences of the form (62) and utterances of sentences of the form (62) conversationally implicate sentences of the form (61). This equivalence is so intuitively salient as to have led Aristotle to incorporate it in his modal logic, despite its inconsistency with other features of that logic (cf Hintikka 1960, Lukasiewicz 1960, Fogelin 1967).

Given this general pragmatic equivalence between (61) and (62), the first conjunct of (48) is pragmatically equivalent to the first conjunct of (47). Thus (47) and (48) themselves (since their second conjuncts are identical) are at least pragmatically equivalent. The semantic explanation of the filtering exhibited by (47) could well be seen as being carried over to (48) on the back of this pragmatic equivalence.

However, to the extent that this explanation of the filtering in (48) depends on its PRAGMATIC equivalence to (47), it might be regarded as rather weak. Besides, it would be tantamount to claiming that, in 'semantic reality', (48) does presuppose that John has children and that, from the semantic point of view, the filtering is only apparent (a matter of 'pragmatic appearance'). I am not content with saying this and want to strengthen the

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*. Actually, there is some controversy on the question of whether the relation is semantic or pragmatic cf eg Cormack 1980, though it is not one that I propose to engage in here. I might as well put on record here that, contrary to the suggestion made by Horn 1985, Burton-Roberts 1984 does not argue for a semantic analysis of the relation but merely points up technical (and conceptual) inadequacies of the available pragmatic analyses.

explanation. So I shall now present the case for regarding (47) and (48) as semantically equivalent. Success in this will render the foregoing observations on the pragmatic equivalence otiose (though I am reluctant to lose their expository value by excising them).

If we turn our attention to the broader sentential context within which the first conjunct of (48) appears, focussing on (48) as a whole, it is noticeable that what we have been regarding as the CONVERSATIONAL IMPLICATURE from the first conjunct of (48) to the first conjunct of (47) is not in fact cancellable without contradiction:

(63) ! It's possible, and in fact necessary, that John doesn't have children but it's possible that they are away.

(63) asserts both that there is NO possible world in which John has children AND that there is a possible world in which his children are away and hence that there IS one in which he does have children. This shows that, unless the first conjunct of (48) is in fact construed as equivalent to the first conjunct of (47), (48) is contradictory.

That the logical coherence of (48) should actually depend upon the putative conversational implicature to the first conjunct of (47) NOT being cancelled is in fact incompatible with regarding the relation between (47) and (48) AS a conversational implicature. On the assumption that entailment (a non-cancellable relation) and conversational implicature (a cancellable relation) are mutually incompatible, (48) and its first conjunct in its context, cannot conversationally implicate, but must semantically entail, the first conjunct of (47). That (48) as a whole does in fact entail that it is possible that John has children is uncontentious since that is entailed by its second conjunct. It is perhaps a moot point whether

the first conjunct in itself conversationally implicates the possibility of John's having children. Since the implication is not cancelable in the context of (48) I do not see that it can be regarded as conversational.

In short, the semantics of the conjunctive (48) as a whole are such that the interpretation of the modal operator in the first conjunct is (to use the terminology of Horn 1972, 1973) not simply pragmatically upper-bounded by conversational implicature, but semantically upper-bounded by its co-conjunct with which it is required to be semantically consistent. This upper-bounding on the interpretation of the first conjunct renders it semantically equivalent to the first conjunct of (47). This, combined with the observation that the second conjuncts of (47) and (48) are identical, yields the conclusion that the overall semantic interpretations of (47) and (48) are nondistinct. And this provides the explanation of the filtering in (48).

That the filtering in (47) and (48) should receive the same explanation is especially satisfactory given the earlier pretheoretical observation that to presuppose a proposition is to be committed to that proposition without countenancing the possibility that it is false. In themselves, the second conjuncts of (47) and (48) would commit the speaker to presupposing that John has children. But neither (47) nor (48) commit the speaker to that presupposition since the possibility that John might not have children IS countenanced by each of their first conjuncts.

This chapter has been intended to show in broad terms the general predictive capacity of a theory of presupposition rooted in the RLDP, by reference to some central cases. It is not intended as

an exhaustive investigation of potential "projection problems". Rather than pursue these further here, I now turn to a discussion of how the Revised theory of presupposition reveals an interesting connection between these projective properties of presupposition and certain intuitive data concerning the presuppositions and resulting logical status of simple sentences.

CHAPTER IX

REVISED PRESUPPOSITION AND THE LOGICAL STATUS OF SIMPLE SENTENCES.

1. Introduction.

This chapter is devoted to the consideration of a well-attested intuitive datum which, in broad terms, is described in (1):

(1) There are non-compound sentences in which, even assuming a logical approach to presupposition (and hence the existence of a third logical status) it is NOT intuitively the case that presupposition-failure results in the presupposing sentence having the third logical status.

This datum is not compatible with (not predicted by) the Standard Logical Definition of Presupposition: the SLDP, as the reader will now be weary of being reminded, purports to model a version of the Truth Gap Intuition in which the third logical status in a presupposing sentence is the INEVITABLE consequence of presupposition-failure in that sentence.

The datum was first acknowledged and treated of in Strawson 1954 and in more detail in 1964 (reprinted 1971: all further references are to the reprint). As noted in Ch. II, the intuition is quite generally attested: cf. Cooper 1974, Gundel 1977, Lyons 1977, Fodor 1979, McCawley 1981, Reinhart 1982, Seuren 1984.

The significance of the datum to be considered here lies in the fact that it arises most saliently in connection with logically

simple sentences. To my knowledge, every writer who treats of the datum cites only simple sentences in its connection. Conversely, writers whose primary concern is with the presuppositions of compound sentences (with the so-called projection problem) either ignore the datum and assume (heuristically or otherwise) that the SLDP is adequate in its application to simple sentences, or treat the two species of data, simple and compound, independently.* Such bifurcation exemplifies a general trend towards what I have been calling the disassociation of definition and projection. The inevitable result of this disassociation is that proposed "solutions to the projection problem for (standard) presupposition" will appear to leave the standard definition intact, while attributing special projective properties to the logical functors, complementisable predicates etc. This has the result that no "solution to the projection problem" as such could have any bearing on the counter-exemplary data arising in connection with simple sentences.

In the foregoing chapters I have argued in general that a genuine explanation of the distribution of presuppositions in compound sentences must be immanent in (follow from) the very concept of presupposition itself as this is characterised by a presupposition-definition. I have sought, more particularly, to show that the theory of presupposition that stems from the RLDP provides just such an explanation. Under this Revised Theory, the connectives have no special presupposition-projective properties. They are purely classical. The presupposition-filtering exhibited by certain compound sentences follows directly from the definition

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* I believe Kempson Ch. 5 may be an exception to this. Her observations, however, are adduced in aid of the total rejection of the (standard) logical approach to presupposition, so it is not part of her purpose to investigate in detail what the connection might be between the problem of the logical status of presupposing simplex sentences and the problem of correctly predicting the distribution of presuppositions in compound sentences.

of generalised presupposition thrown up by the RLDP itself. It will be recalled that the particular feature of the revised theory that makes this possible consists in a loosening of the (standard) tie between presupposition-failure in S and lack of truth value in S. The consequence of revised presupposition-failure in S is not ACTUAL lack of truth value but LIABILITY to lack of truth value. Lack of truth value therefore is not the INEVITABLE, but only the CHARACTERISTIC, consequence of revised presupposition-failure.

The general argument of this chapter, then, takes the following form. Given that

(i) Under the revised theory, presupposition-failure in S is compatible with S having a truth value,

and given that

(ii) this loosening of the tie between presupposition-failure and lack of truth value has been shown to provide an appropriate explanation of the distribution of presuppositions in compound sentences,

and since

(iii) the datum under consideration here in connection with simple cases consists in an intuitive compatibility between presupposition failure in S and S's having a truth value,

then

(iv) The revised theory of presupposition is to be seen as providing a unified, global explanation of the distribution of presuppositions in compound sentences and of the simplex counterexamples to the SLDP.

In the sections that follow I consider two treatments of the intuitive simplex counterexamples to the SLDP and I compare them with the account suggested by the revised theory of presupposition. The two treatments are Strawson 1971, which appeals to the concept of topic, and Fodor 1979, which appeals to the concept of under-specified possible world. Both treatments will be criticised on specific grounds of internal adequacy. But both treatments are

subject to the more general criticism that, in being restricted in their application to simple sentences, they do not (in any way apparent to me at least) suggest any connection between the data of which they treat and the distribution of presuppositions in compound sentences.

2. Strawson's thematic approach.

Consider the following sentences:

(2) The king of France visited the exhibition.

(3) The exhibition was visited by the king of France.

(4) The king of France is in this room.

(5) Jones spent the day at the local swimming pool.

(6) Kim's neighbours broke her window.

(7) Ann's husband met her at the airport.

In connection with such sentences we will assume, not only that there is no king of France, but also that there is no swimming pool locally, that Kim has no neighbours, and that Ann is not married. We shall further assume that all other expressions with implication of reference do indeed have a referent (i.e. _the exhibition_, _this room_, _Jones_, _Kim_, _her window_, _Ann_, _the airport_). I shall adopt Strawson's terminology in distinguishing between such expressions: A GUILTY expression is a referring expression WITHOUT an actual referent i.e. an expression that induces presupposition-failure. An INNOCENT (or non-guilty) expression is a referring expression WITH an actual referent, i.e. one that does NOT induce presupposition-failure.

Given these assumptions, Strawson 1971 concedes (the SLDP notwithstanding) that, while each of these examples suffers from presupposition-failure, intuitively they do not necessarily suffer

from lack of truth value, but may be false. And if these may be false, their negations may be true. As indicated, this (or a stronger version of it) is a quite widely attested intuition even among proponents of presuppositional logic (and associated truth value gaps). And for critics of presuppositional logics, notably Kempson 1975, the intuition has provided a veritable mine of ammunition. As Kempson 1975:87 justly observes "Anyone wishing to maintain an analysis in terms of [logical] presupposition must explain away such examples as these".

In developing his explanation of the phenomenon, Strawson considers two approaches to it. On the **FIRST** approach, Strawson considers attributing the intuition to the presence of innocent referring expressions in addition to, and independent of, the guilty expression. On this approach, the mere presence of the innocent expression <u>the exhibition</u> in (2) and (3) renders those examples false rather than lacking in truth value. Lack of truth value would thus arise, not simply in the presence of guilty expressions, but only in the absence of innocent expressions. Notice, furthermore, that on this approach it is not merely the case that (2)-(7) MAY be false, they ARE false (without modal qualification).

Strawson offers little or no rationale for this approach to the data because he is in fact intent on rejecting it. Fodor 1979, who seeks to defend the approach, presented a detailed rationale for it, and on this basis was led to develop an explanation in terms of underspecified possible worlds. The present discussion also defends this approach. But while Fodor and I concur in our preliminary account of the data, we diverge radically in our explanations of it.

On what grounds did Strawson reject this first approach? He

rejected it on the grounds that it did not cover cases which he wished to regard as intuitively false (not gapped) but in which the intuition could not be attributed to the independent presence of innocent referring expressions, for the simple reason that the relevant examples did not contain any innocent expression. He cites the response in the following minimal discourse:

(8) { Q: What reigning monarchs are bald?
R: The king of France is bald.

Strawson attests the intuition that the proposition expressed by <u>the king of France is bald</u> is false rather than lacking in truth value when that sentence is uttered in response to (8-Q). Now (8-R) seems to presuppose that there is a king of France as much as (9-R) does:

(9) { Q: Is the king of France bald?
R: (Yes,) the king of France is bald.

Yet Strawson based his explanation on the intuition that only (8-R) constitutes a counter-example to the SLDP in being false; (9-R) for Strawson is gapped, as predicted by the SLDP.

On this **SECOND** approach to the intuitive datum, the logical status of a sentence suffering from presupposition-failure varies according to the discourse context in which that sentence is uttered. Accordingly, on this second approach, the intuition is modally weaker than it is on the first: (2)-(7) may lack a truth-value (a la SLDP) or be false (contra SLDP) depending on their discourse-context of utterance.

On this basis, Strawson sought to explain the data by appeal to the concept of topic; that is, to the concept of what an utterance is ABOUT. For him, the crucial differene between (8-R) and (9-R) is that he takes (9-R), but not (8-R), to be ABOUT a putative king of

France. Let us say that an expression in an uttered sentence identifies the topic of the utterance (what the utterance is ABOUT) if and only if that expression is the THEME of the sentence uttered. Strawson's suggestion then is that a guilty expression induces lack of truth value in the sentence in which it appears only when that expression is the theme, picks out what the sentence is being used to talk about. If *the king of France is bald* is used to talk ABOUT a putative referent of *the king of France* then it is not being used to talk ABOUT anything, for there is no king of France. And if it is not being used to talk ABOUT anything, then there isn't anything for it to be true or false ABOUT. If, on the other hand, it is not being used to talk ABOUT a putative referent of *the king of France* but ABOUT something else that really does exist, then it really is ABOUT something, and what it says about that other thing is false, because there is no king of France.

Among writers who have considered the matter (including all those mentioned at the opening of this chapter) there is general agreement that this analysis is essentially correct.* Even Fodor 1979, despite her advocacy of the first approach for sentences containing innocent expressions, concedes that Strawson's second topic-centered approach is appropriate in cases where there are no innocent expressions. But if this second approach is correct for such cases, it constitutes a compelling counter-argument against ANY application of the first approach. In other words, if the logical status of *the king of France is bald* is held to be subject to its thematic structure, then surely the logical status of (2)-(7) should be as well. On this point we must, it seems to me, concur with Strawson: the adoption of the second approach for (8-R) entails the rejection of the first for (2)-(7).

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* Donnellan 1981 is an exception and Kempson 1975 argues that it is circular.

The first approach, then, can only be sustained in the light of a demonstration that, if indeed (8-R) is intuitively false rather than lacking in truth value, its falsity could not anyway be explained in terms of its thematic structure. Such a demonstration is presented by Burton-Roberts 1986a and b, in the course of providing an explanation of the pragmatics of non-descriptive definition. I now summarise the main points of the argument.

As noted, Strawson's thematic approach depends on the assumption that the subject of (8-R) (the king of France) is not the theme of the sentence (does not identify what that utterance is about). I seek to establish, then, that the subject of the sentence in (8-R) IS its theme. The argument depends on three assumptions, all of which are uncontroversial:

Assumption 1. Subject is unmarked theme.

Assumption 2. For every uttered sentence having a topic identified by a (thematic) expression that is NOT the subject , there is a propositionally equivalent sentence in which that expression DOES function as subject and this sentence is usable without difference in the same context.

Assumption 3. Every uttered declarative sentence has a theme.

Assumption 1 is widely accepted (cf. among others Halliday 1967 and elsewhere, Chafe 1976, Allerton 1978, Taglicht 1984 - also Strawson 1971 who goes as far as to say that a non-topic (i.e. a non-theme) is "absorbed into the predicate".) In Assumption 1, we make an identification-in-principle between subject and theme: it is NORMAL, though not necessary, for subject to be theme. The utility

of Assumption 1 lies in the resulting marked-unmarked correspondence relation invoked in Assumption 2. And Assumption 2 amounts to the uncontroversial idea that for any MARKED term there should correspond another which is its UNMARKED counterpart.

Assumption 3 may not be necessary for my purpose, though it is entailed by Halliday 1967 and strongly implied by Strawson's discussion of topic in terms of subject and predicate. I invoke Assumption 3 in order to make it clear that I view Strawson's contention that the subject of (8-R) is not its theme as committing him to (8-R) having a thematic predicate i.e. as having its topic picked out by its predicate. Reinhart 1982:15, a champion of Strawson's thematic analysis, makes this commitment explicit: "the topic expression [= my 'theme' - NBR] is _is bald_ rather than _the king of France_."

On what basis has Strawson (among others) decided on this thematic analysis? It appears to be the assumption that, since the whole discourse - (8) - intuitively is not about a putative king of France, no utterance that is a constituent of that discourse can be about a putative king of France. This would appear to stem from the more general assumption that a discourse-topic is a function of the topics of the utterances that go to make up that discourse (which in turn implies that all utterances in a (coherent) discourse should have common utterance-topics). The intuitive point of denying that the subject of of (8-R) is its theme appears to be to get oneself into the position of being able to say that the predicate is theme and thereby analyse (8-R) as having an utterance-topic that is identical to the discourse-topic.

What then is the discourse-topic of (8)? It does not seem entirely lacking in plausibility to suggest the topic of the whole

discourse is a/the set of bald individuals. Strawson speaks in this connection of a class antecedently introduced in the question; and Reinhart 1982:15 concurs, asserting that (8-R) "is most likely to be interpreted as asserting something about the set of bald celebrities". See also Cooper 1974:38-9: "Where [the king of France is bald] is uttered in reply to the request to name some bald notable it is reasonable to suggest that the topic is not the king but the class of bald notables."

In summary of this analysis, then, instead of having an unmarked thematic structure with subject as theme, (8-R) is thematically marked, having the predicate as theme, and as such is about a set of bald individuals, a topic it has in common with the discourse of which it is a constituent utterance. This picture of things appears plausible and has been widely accepted.

By contrast with such a picture, however, I will argue that, where the predicate of the king of France is bald is thematic, an utterance of that sentence will NOT be about any set of bald individuals but about (the property of) being bald, baldness. It is true that the set of bald individuals and the property of baldness are often conflated in discussions of the semantics of predicate expressions. In Montague semantics (cf Dowty et al 1981) for example, a one-place predicate is a function from individuals to truth values and it is a common (extensional) simplification to identify such characteristic functions with sets of individuals. See also Goodman 1961. In this context, however, this simplifying conflation will not do - as I now show.

If predicates identify such things as baldness (a property) then the king of France is bald with a thematic predicate is about baldness. In that case, I suggest, the king of France is bald does not constitute a coherent answer to the question under consideration

- which is a version of Who is bald? and is agreed to be a question that concerns the/a set of bald individuals. Instead it would answer the distinct question (10):

(10) What is bald?

understood to mean What is 'bald'? or What is baldness? or What is it to be bald? or What does 'bald' mean? (The distinction between the two questions is actually less confusing when a noun is used instead of an adjective. Compare, then, the relevant questions when the expression is a noun: Who is a recidivist? (=[[who] [e is a recidivist]]) - a question about the/a set of recidivists vs What is a recidivist? (= [[what] [a recidivist is e]]) - a (definition-requesting) question about recidivism).

That this is so may be demonstrated by reference to Assumptions 1 and 2 above. By Assumption 1, if in any context of utterance, the predicate of the king of France is bald is theme, then such an utterance has MARKED thematic structure. By Assumption 2, we expect there to be a propositionally and pragmatically equivalent sentence with UNMARKED thematic structure - that is, a propositionally equivalent sentence in which the theme ((is) bald) is subject and which is usable without difference in that context. The only sentence that satisfies the semantic and syntactic criteria is (11):

(11) Bald is what the king of France is.

But, while (11) satisfies the semantic criterion of propositional equivalence to the king of France is bald and the syntactic criterion of having the (thematic) expression bald in subject position, it fails in the matter of pragmatic equivalence in the designated context, (8). In other words (11) is not a coherent answer to (8-Q). Discourse (8') appears to me (and numerous others

with whom I have checked) bizarre and lacking in cohesion:

! (8') { Q { Who is bald?
What reigning monarchs are bald? (= (8-R))
R Bald is what is the king of France is. (= (11))

On the contrary, but as predicted by the foregoing discussion, (11) coherently answers the question in (10) - in whatever form of that question the reader may prefer.

(12) { Q (10) What is 'bald'?
R (11) Bald is what the king of France is.

(Notice that any desire to identify discourse-topic with the topics of the utterances of which it is made up, would be fulfilled at least in discourse (12) - for that, surely, is discourse about baldness.)

Given that a (putative!) individual is to be dragged into the response to the (definition -requesting) question (10), (11) is the thematically UNmarked response. However, while (11) is THEMATICALLY UNMARKED in the context of (12), it is CONSTRUCTIONALLY MARKED (in a fairly obvious sense discussed in BR 1986b:325-6). The constructionally UNmarked counterpart of (11) is of course <u>the king of France is bald</u>, which is itself a possible, but thematically marked, response to the question in (10), as shown in the discourse in (13):

(13) { Q: (10) What is 'bald'?
R: (14) The king of France is bald.

The use of (14) by way of response to (10) is what I have called a 'non-descriptive definition'. Indeed the thematic/pragmatic equivalence between (11) and (14) (in the context of (10)) provides a rather simple explanation of the mechanics of the use of (14) in

that context (its use as a non-descriptive definition) and hence an explanation of the coherence of discourses such as (13)- see BR 1986a. In addition, it provides an interesting explanation of the more special phenomenon of ostensive definition - see BR forthcoming.

In conclusion, and *pace* Strawson, *the king of France is bald* is (presupposition-failure apart) in every respect an unmarked, canonical answer to the question (8-Q). Were its predicate its theme in that context, we should expect to find that its thematically unmarked counterpart, (11), was equally - if not more - acceptable as a response to the question. But it is not. This is because, while it is agreed that that question is a question about the/a set of bald individuals, (11) cannot be construed as answering such a question; instead, it answers the distinct question (10) a question about baldness. I conclude that the predicate of *the king of France is bald* is the theme of that sentence only in the context of (10) (=(13Q)), not in the context of (8-Q).

If, as I have shown, the predicate of (8-R) is not thematic, then its subject is thematic. This conclusion is indicated by Assumption 3 - that every uttered declarative sentence has a theme. But the conclusion is natural independently of that assumption. It seems reasonable to ask how any question of that general type (*Who is bald?*) could be answered except by mentioning an individual who is bald and giving the required information ABOUT that individual that he is indeed bald. To be sure, this conclusion entails abandoning the (implicit) assumption that a discourse-topic is in any simple way to be equated with the (necessarily common) topics of the utterances that constitute that discourse (for, under the thematic analysis proposed here, Discourse (8) may indeed be ABOUT the set of bald individuals, but (8-R) is (or purports to be) about

a king of France). This and other matters are discussed in BR 1986b, where it is shown, inter alia, that this assumption may be abandoned without any loss, and perhaps an increase in, intuitive appeal. (Should this seem too summary a rejection of Strawson's thematic approach, the reader is referred to the more detailed discussion in BR 1986a and b, and forthcoming.)

I conclude this consideration of Strawson's thematic approach with three general comments.

(i) We have seen that the rationale of Strawson's thematic analysis of (8-R) as having the predicate rather than the subject as theme is the (misleading!) intuition that a use of that sentence in that context is about a set of bald individuals. This would seem to commit its proponent to a purely extensional semantics of predicate expressions. Yet Strawson is surely committed, generally (1950, 1959, 1971, 1974) and in particular by his conception of presupposition, to a rejection of this view of predicate expressions. If predicates as such simply identify sets of individuals, then Strawson's theory of presupposition is in jeopardy, for that account, at least in its simplest form, invites us to inspect the actual set of bald individuals in order to evaluate _the king of France is bald_. Russell 1905 and many others (see Atlas 1977 for a clear presentation of the view) feel impelled to accept that invitation and pronounce the sentence false as a result (thereby rejecting any theory of presupposition and adopting a theory of ambiguous negation instead - to account for the fact that no king of France will be found among the set of NON-bald individuals either). But Strawson wishes to reject the invitation and his truth gap theory of presupposition is grounded in this rejection.

(ii) Let us suppose that Strawson's thematic analysis were

successful, that (8-R) is indeed false and that this valuation is to be explained by reference to its thematic structure. This would be an unwelcome kind of success, for it has the counterfactual consequence that, uttered in reply in to (8-Q), *the king of France is bald* does not PRESUPPOSE that there is a king of France. The thematic approach has this consequence because a logical theory of presupposition, if it entails nothing else, must at least entail that the falsity of a presupposition cannot, in and of itself, lead to the falsity of the presupposing sentence (i.e. if A presupposes B, the falsity of B is NOT a sufficient condition for the falsity of A). The SLDP, as already noted, goes further than this; the RLDP, by contrast, captures JUST this. Therefore, if we seek to evaluate (8-R) as false AND maintain the idea that it nevertheless presupposes the existence of a French king, we must find grounds for its falsity OTHER THAN THE NON-EXISTENCE OF A KING OF FRANCE. We CANNOT have it both that (8-R) presupposes that there is a king of France and that it is false BECAUSE and only because there is no king of France. But on what grounds is (8-R) false under the thematic analysis? It is false on that analysis for NO OTHER REASON than that there is no king of France. Hence, on the thematic analysis and contrary to the facts of the matter, (8-R) cannot presuppose the existence of a French king. We shall see in the next section that this general issue is crucially relevant in choosing between two different versions of the alternative to the thematic analysis.

(iii) My discussion of the thematic approach has been conducted independently of the intuitive question of whether *the king of France is bald*, in the context of discourse (8), should indeed be regarded as false rather than gapped. Strawson's judgement that it should be so regarded is, as noted, widely accepted. However, the

above discussion deprives us of an explanation of it. I have to confess that this does not disturb me unduly - for I do not concur in that judgement. One might wonder in fact whether the foregoing demonstration that the thematic explanation is untenable could have been developed unless it was informed by scepticism with regard to the judgement. Concomitantly, one might wonder, in the light of the discussion of this section, whether the intuitive judgement is as clear as it otherwise seemed to those who do concur. (In this context, Donnellan's 1981 remarks on intuition and presupposition seem relevant.)

Let me then mention a consideration that brings the judgement itself into question. Strawson's judgement that (8-R) is false rather than gapped is bound up with his judgement that it should be pronounced WRONG AS AN ANSWER TO ITS QUESTION (1971:96). Certainly, we may concede that it is wrong as an answer to its question. But a framework that admits of truth-value gaps entitles us to question whether judgements of the rightness or wrongness of an answer are isomorphic with classical judgements of its truth value. Consider (15):

(15) Kruschev was bald.

(15) is true. But considered as a response to (16):

(16) Which U.S. presidents have been bald?

it is a wrong answer to the question, as wrong an answer to its question as (8-R) is to (8-Q). Are we then to say that (15), as a constituent of the question-answer pair (16)-(15), is false? Surely not. If truth-value gaps have a use, this is the place to use them. Why shouldn't Strawson, as a proponent of the logical approach to presupposition, do what Keenan and Hull 1973 do in such a situation? Given a semantics of questions that is effectively a semantics of

question-answer pairs, they seek to build into the semantics what it is that makes (15) a WRONG ANSWER to (16). They would observe, very reasonably, that (15) as a response to (16) carries the false presupposition that Kruschev was a U.S. president. They thus reconstruct the wrongness of (15) as an answer to (16) by means of a logic that assigns (15) (or rather the pair (16)-(15)) the third logical status.

What this example shows, it seems to me, is that Strawson's judgement that, when it comes to answers, WRONGNESS should be modelled by a classical truth value (falsity), rather than by a logical gap, retains whatever plausibility it has only when we restrict our attention to those cases where the most natural choice seems to be between the logical gap and FALSITY. Cases such as (16)-(15), in which the choice is between the logical gap and TRUTH, place the judgment in a more dubious light. (It is perhaps appropriate at this point to remind ourselves that the gap is NOT a species of falsity.) The following example, closer to home, illustrates the same point.

(17) Q: What reigning monarchs are NOT bald?
R: The king of France isn't bald.

If (8-R) is false as an answer to (8-Q), it would seem that (17-R) should be TRUE as an answer to (17-Q). This runs very clearly against the intuitive facts of the matter; and it is precisely these intuitive facts that a logical theory of presupposition is supposed to capture.

3. Falsity and the irrelevance of (revised) presupposition-failure.

The foregoing section outlined the grounds on which Strawson's thematic approach should be rejected. This section considers the issues that arise in connection with the alternative and argues that the Revised Theory presented in previous chapters handles the data automatically.

Recall that this alternative approach takes the presence of extra, successful referring expressions to be crucial to the intuitive judgement that, presupposition-failure notwithstanding, (2)-(7) of section 2 are false rather than gapped. As mentioned, Fodor adopts this general approach too. She begins by observing that what distinguishes the sentences in (18) from those in (19)

(18)

The king of France { is { bald (a) / hairy / an atheist } / loves Camembert / has three daughters / is standing next to the Queen of France }

(19)

The king of France { is standing next to me (a) / is dining with Mrs Thatcher / ate your Camembert / is married to one of Kim's friends }

is that those in (18) do "not connect with the real world at all because [they] say nothing about anybody or anything that is present in the real world" (Fodor 1979: 201). By contrast, those in (19) do "connect with the real world"; for example, (19a) "says something about me and the reason we judge it to be false is that what it says about me is false" (201).*

On these points Fodor and I are in agreement. But there the agreement ends: Fodor continues

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* Note that Fodor, in this context at least, is using 'about' in a different, and looser, sense from Strawson. Here a sentence is equally 'about' the referents of all the referring expressions it contains. (Strawson 1950 used it in this latter sense, too.)

"There are two ways of pursuing this account of the contrast between [(18a)] and [(19a)] and I will start with one which, though superfically appealing, turns out to lead nowhere. The idea here is that the existence or non-existence of the [sic] king of France is IRRELEVANT to the valuation of [(19a)]" (p.201).

Now this idea, which according to Fodor leads nowhere, is the idea which I develop in this chapter and show that it is anyway implied by the Revised theory of presupposition. In fact, and this follows from the second general remark of the last section, I shall in due course argue that any account of this phenomenon that does NOT involve what Fodor calls IRRELEVANCE is straightforwardly incompatible with the concept of presupposition. However, by way of introduction to the idea, I shall confine myself in the first instance to a consideration of Fodor's presentation and rejection of it.

Length notwithstanding, it is perhaps best to give Fodor's account of it verbatim. This is her presentation:

"We need not know whether there is a king of France in order to establish that [(19a)] is false; all we need to establish is that there is no king of France standing next to me; that is, either that there is no one standing next to me or that the person or persons standing next to me are not king of France. Depending on the degree of our ignorance about the political situation in France, we could happily use one or other of sentences [a]-[c].

[a] Whether or not there's a king of France, the king of France is not standing next to me.

[b] If there's a king of France, he's not standing next to me.

[c] Even if there's a king of France, he's not standing next to me.

This seems promising, for the corresponding sentences about baldness are quite bizarre. What justification could there possibly be for the assertions [d] to [f]?

[d] !!Whether or not there's a king of France, the king of France is not bald.

[e] !!If there's a king of France, he's not bald.

[f] !!Even if there's a king of France, he's not bald.

Notice that for the predicate *is standing next to me*, Sentence [(19a)] is just like Sentence [g], for which there is no reference failure. Statements [h]-[j] are quite coherent and reasonable if one is unsure about the existence of a queen of England but is sure that the only person in the vicinity is, for instance, Robert Redford.

[g] The queen of England is standing next to me.

[h] Whether or not there's a queen of England, the queen of England is not standing next to me.

[i] If there's a queen of England, she's not standing next to me.

[j] Even if there's a queen of England, she's not standing next to me.

To put it informally, and in overtly verificationist terms, this theory says that [(18a)] has no truth value because to evaluate it we would need to look at the king of France and we cannot; and that [(19a)] does have a truth value because to evaluate we need only look at me and at those people who are near me."

Fodor 1979:201-2.

This is a fair preliminary presentation of the idea. Indeed, given Fodor's earlier quoted remarks about connection with the real world, it is difficult to see on what basis she proposes to reject it. The rejection, which immediately follows the above presentation, takes the following form.

"But this is unsatisfactory for it simply shifts the puzzle one step further back. If we can make a list of the people standing next to me and determine that no king of France is on it, why could we not also make a list of people who are bald and establish that no king of France is on IT? More formally, why is the argument (k) valid and the argument (l) not?

(k) No one who is standing next to me is the king of France; therefore it is false that the king of France is standing next to me.

(l) No one who is bald is the king of France; therefore it is false that the king of France is bald.

Of course, it is likely to be much harder in practice to make an exhaustive list of all the bald people in the world than of the people standing next to me; that is, harder to establish the truth of the premise in (l) than in (k). But that is a practical matter only, and should have no bearing on the

validity of the inference if we allow ourselves to imagine, at least, that the premise has been established as true.

"In fact, the explanation of the invalidity of the (l) is quite obvious. On the reading on which it is true, the premise of (l) quantifies over EXISTING bald people. It therefore entails only that, IF the king of France exists, it is false that he is bald. Since he does not, we can draw no conclusion about the state of his head from this premise. Thus, an additional existence premise would be needed for argument (l) to be valid. And then, by parity, it would seem that argument (k) should be likewise valid only in conjunction with an existence premise. In the absence of an explanation of why (k) and (l) should differ in this respect, we must conclude that the apparent validity of (k) is an illusion."

Fodor 1979:202-3.

I have a difficulty here. Fodor asks why [k] should seem valid and [l] invalid. But by the end of the quotation, I find myself as much inclined as before to answer that [k] not only seems, but is valid (as against [l]) - and that the distinction between them is due to the fact that the existence or otherwise of a king of France is irrelevant or peripheral to [k] but crucial to [l]. Fodor's discussion of [k] and [l] in my view fails to demonstrate that this idea is not viable; on the contrary, her discussion of [k] and [l] appears to me simply to ignore that idea.

Consider first the discussion of practicality (immediately following [l]). I do not accept that the distinction between making an exhaustive list of the individuals standing next to me and making an exhaustive list of bald individuals is a difference of practicality, merely quantitative. There is here a qualitative difference in principle (one which is related in my mind to Russell's 1910 distinction between knowledge-by-acquaintance and knowledge-by-description). The difference lies in the fact that it is POSSIBLE to know that the set of individuals standing next to me does not include a king of France, independently of knowing whether or not there is a king of France and even notwithstanding a belief in the existence of such an individual. By contrast, I would

want to deny that it is POSSIBLE to know that the set of bald individuals does not include a king of France without knowing that there is no French king. I do not, of course, deny that the truth of the premise in [k] and the truth of that in [l] may both in fact be established as it were deductively from the premise that France is a republic not a monarchy. The difference is that the truth of the premise in [l] may ONLY be established thus, while that in [k] may alternatively be established as it were inductively, by establishing of each individual in the set of those standing next to me that he/she is not a king of France. The point I seek to make is that, in the absence of knowledge as to the existence or otherwise of a French king, it would not be possible to know whether a list of bald individuals that did not include a king of France was THE exhaustive list of bald individuals. By contrast, it IS possible to know whether a list of individuals standing next to me is THE exhaustive list of individuals standing next to me without knowing whether there is a French king.

Consider the matter from this angle. The premise of [l] is distinguished from that in [k] by the fact that it is ONLY possible to know that the premise of [l] is true if it is ALSO known that (20) is true:

Premise of [l]: No one who is bald is a French king.

(20) No one who is NOT bald is a French king.

The relevance of this observation, of course, is that (20) and the premise of [l] can both be true (if and) only if there is no king of France. Now we (Fodor and I, at least) are operating on the assumption that, where there is no king of France, the conclusion of at least [l] suffers from lack of truth value. That is, the only circumstance in which the premise of [l] may be established is

exactly the circumstance in which the conclusion of [l] lacks a truth value. Thus, given the (logically presuppositional) framework within which this discussion is being conducted, [l] is viciously circular. The circularity could be escaped, and the validity of [l] established, only by denying that <u>the king of France is bald</u> PRESUPPOSES that there is a French king (for then the conclusion (and premise) may be valuated as true and true BECAUSE there is no king of France.) Since this is contrary to the fundamental assumption of the enterprise that both Fodor and I are engaged in, (namely that both (18a) and (19a) do presuppose that there is a king of France) we must conclude that [l] is invalid. I return to these matters in more detail below.

In [k] by contrast, the premise may be established quite independently of (21):

Premise of [k]: No one who is standing next to me is a French king.

(21): No one who is NOT standing next to me is a French king.

This appears to me self-evident. Since the premise of [k] may be established independently of the truth of (21), the premise of [k] may be established as true independently of the non-existence of a king of France. Hence the conclusion of [k] may be established as true on the basis of the truth of [k]'s premise independently of the grounds on which it would (otherwise) lack a truth value.

Of course, the salience of our de facto knowledge of the non-existence of a king of France is possibly such as to obscure the point. Let me then change the example:

(22) Max spent the day at the local swimming pool.

Again, it appears to me self-evident, given a referent for Max, that it is possible to KNOW (in the strictest possible sense of that word) that (22) is false, without knowing whether or not there is a local swimming pool, believing even that there is one. To know that Max spent the whole day in hospital, or travelling 70 miles from the locality to visit friends (who may or may not have taken him to THEIR swimming pool) is sufficient in itself to falsify (22), quite independently of the existence or otherwise of a local swimming pool. Its existence then is peripheral/"irrelevant" to that valuation.

In the first few sentences of the final paragraph of the above quotation Fodor concedes the argument from relevance to the non-validity of [l]. The argument breaks down in the last two sentences - precisely at the crucial point where her argument requires her to DEMONSTRATE that ir/relevance is NOT capable of distinguishing between [k] and [l] (and hence between (18) and (19)). Rather than demonstrating parity between [k] and [l], Fodor ASSUMES it (by means of "And then by parity...") without support or argument. Thereby Fodor must be seen as simply ignoring the distinction in relevance to [k] and [l] of the non-existence of a French king, rather than as establishing that there is no such distinction.

Let us return now to the more general issue discussed at the end of the last section (under (ii)) and alluded to earlier in this. Fodor's claim that the irrelevance idea "leads nowhere", failing to distinguish between (18a) and (19a), is the claim that the non existence of a French king is NOT IRRELEVANT to the falsity of (19a). Then (19a) is false BECAUSE of the non existence of a French king. Then the falsity of there is a king of France is a sufficient condition of the falsity of (19a). This indeed is precisely Fodor's

argument and the basis on which she characterises [k] as invalid, alongside [l]. "The non-existence of the king of France is SUFFICIENT to render [(19a)] false" (204, Fodor's caps).

Fodor's argument then suffers from the same general flaw as Strawson's thematic analysis. I have argued that it is incompatible with a framework that postulates truth-value gaps induced by failure of presupposition to allow that the falsity of a presupposition is a sufficient condition of the falsity of the presupposing sentence. This principle (which I shall call the PRESUPPOSITIONAL PRINCIPLE - PP for short) underlies both the Revised and the Standard theories, indeed must be seen as underlying any theory that seeks to establish a connection between presupposition failure and lack of truth value. The Revised theory simply CONSISTS in this principle; the standard theory goes considerably beyond it, by making the truth of a presupposition a necessary condition of the falsity of the presupposing sentence.

Fodor's contention is that the non-existence of a king of France (KF) is relevant to the judgement that (19a) is false because it constitutes a sufficient condition for that judgement. I now spell out the consequences of this contention as they appear to me. In the first place it draws the wrong distinction between (18a) and (19a). If we adhere to the Presuppositional Principle, Fodor's contention has the consequence that, while (18a) may presuppose that there is a king of France, (19a) cannot presuppose it. Instead, and unfathomably, (19a) is characterised as STRONGLY ENTAILING that there is a king of France. This of course is quite contrary to the facts of the matter and is not at all what we sought to achieve. The enterprise we are engaged on is that of developing a logical theory of presupposition (and its connection with the truth value gap) which is capable of reconciling the intuitive falsity of (19a)

with the fact that (19a), as much as (18a), PRESUPPOSES that there is a king of France.

But worse is to follow. Were it not for the Presuppositional Principle - and the fact that we wish to say of (19a) that it presupposes the existence of a French king - I would of course have to agree with Fodor that the non-existence of a king of France was indeed sufficient to falsify (19a). If we abandon the PP to the extent of allowing that (19a) is false BECAUSE there is no KF, we surely have no reason not to allow that (18a) is false on those same grounds. For (18a) bears the same semantic relation to the proposition that there is a king of France as (19a) does. This conclusion seems indicated in general terms and quite specifically in terms of Fodor's own argument. Having argued that the non-existence of KF is as relevant to [k] as to [l], and having allowed, on that basis, that (19a) is false BECAUSE there's no KF, the falsity of (18a) would follow by the very parity that Fodor takes herself to have established. At best, then, Fodor's argument commits us to inconsistency in adherence to the Presuppositional Principle. But, more generally, we may ask: If the non-existence of KF is sufficient to falsify (19a) why should it not be sufficient to falsify ANY positive sentence in which _the king of France_ appears as a referring expression? We may be sure of this at least: that the anti-presuppositional "lobby" is waiting in the wings to argue just this; for these considerations lead directly to the abandonment of any presuppositional theory of truth-value gaps.

But Fodor and I are only indirectly mounting a general defence, against this lobby, of a logical approach to presupposition. What we are attempting to do is to establish a more refined account of the relationship between the truth value gap and presupposition failure WITHIN a framework that assumes that there is a gap and that

there is some such relationship. In this context, these are fundamental working assumptions. We thus START with the premise that at least (18a) lacks a truth value. Fodor herself (fn 5, p. 203) refers to

> "the fact that we began with, namely that it is neither true nor false that the king of France is bald".

Fodor herself, then, subscribes to, and cannot abandon, the Presuppositional Principle - that the falsity of a presupposition is NOT a sufficient condition of the falsity of the presupposing sentence.

Given the Presuppositional Principle, the choices open to us are clear. If (18a) is neither true nor false because it presupposes the existence of KF, then, if (19a) presupposes the the existence of KF, it cannot be false-BECAUSE-there-is-no-KF; it must EITHER be neither true nor false OR false-for-some-other-reason.

It is on these grounds that I am defending the idea of "irrelevance" as not only correct but necessary, given our fundamental working assumptions. What is at issue in the "irrelevance" idea, then, is more than a merely parochial choice between two presuppositional accounts of the data; it is the issue of whether or not there IS an internally consistent presuppositional theory capable of handling the data.*

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* I am, of course, assuming that Fodor wishes to assign <u>the king of France is bald</u> to the truth value gap ON ACCOUNT OF its presupposition-failure. Fodor is committed to the Presuppositional Principle just so long as her theory of gaps purports to be a theory of presupposition. In the final section of this chapter, I pursue the idea, suggested by the present discussion, that the alternative theory of gaps that Fodor develops in terms of underspecified possible worlds cannot in fact be a theory of presupposition.

At the risk of misrepresenting my own view of the distinction between (18a) and (19a), I have defended it in terms of Fodor's allusion to IRRELEVANCE. This may not be wrong exactly, but certain adventitious connotations need to be removed. When this is done, I expect Fodor's rejection of it to appear in a yet more dubious light.

We have seen that Fodor attempts to distinguish (18a) and (19a) in terms of the SUFFICIENCY of the non-existence of KF as a falsifier of those sentences. I have shown that what is at issue cannot be its sufficiency. This either (i) makes the wrong distinction between them or (ii) is inconsistent (in its adherence to the Presuppositional Principle) or (iii) undermines the rationale of the discussion by putting the very existence of the truth value gap in doubt. But, even disregarding such matters of principle, the sufficiency or otherwise of the non-existence of a king of France IS not, as a matter of fact, what is at issue anyway. In our world, France is a republic, not a monarchy. Were (18a) to be judged false, it could not soundly be judged so for any other reason. In other words, were (18a) to be judged false in our world, the non-existence of KF is NECESSARY to the soundness of that judgement (and, since this contradicts the Presuppositional Principle, (18a) is therefore neither true nor false). It is not (and cannot be) the sufficency of the fact to the soundness of the falsity judgement that is at issue, but its necessity. This is what distinguishes (18a) and (19a).

Imagine two situations. The FIRST is one in which the <u>me</u> of (19a) refers to me (NBR), in which the only person (if any) standing next to me is Tessa, and in which France is a monarchy with a male incumbent on the throne. The SECOND is exactly the same except that France is not a monarchy and there is therefore no king of

France. Fodor and I agree that (19a) is false in the second situation. I wish to defend the "irrelevance" idea on the basis of what appears to me a very obvious fact: that (19a) is false in the first situation as well as the second. Thus (19a) is false in two situations which are differentiated from each other only by the existence vs. non-existence of a French king; to that extent it is false irrespective of that consideration.

It is on this sense of "irrelevance", and this sense alone, that I defend it. The matter boils down to this: We may retain the Presuppositional Principle and still maintain that (19a) is false; but (18a) could only be false by abandoning the PP.

There is a sense of "irrelevance", though, which I would NOT want to defend. I do not, for example, seek to deny that in a world such as ours there is a connection between (a) the fact that there is no king of France and (b) the fact that of all the individuals standing next to me (if any) none is the king of France. But we must be on our guard against allowing the undoubted salience of our *de facto* awareness of (a) to dazzle us and highjack the point at issue. This is why it is so important to remind ourselves that someone unaware of (a) could nevertheless judge (19a) as false and do so with the strictest possible justification. This means that, even for a speaker AWARE of (a), (a) is not logically necessary either to his judgement that (19a) is false or to the soundness of that judgement, however salient in his mind (a) might be.

Within the framework of the Presuppositional Principle, the connection between (a) and (b) is this: We may grant that in a world in which (a) holds, (19a) cannot be TRUE. But by the PP, (a) cannot of itself render (19a) FALSE. Nevertheless, any world in which (a) holds will be a world in which ADDITIONAL facts

(concerning eg who is standing next to me) will be available, and THESE facts ARE sufficient to falsify (19a). They are connected to fact (a), but they are facts in their own right, additional and independent of (a) in as much as they could still be facts even when (a) was not a fact. Thus, while failure of presupposition in (19a) is not unconnected with the reasons for its falsity, it cannot in and of itself constitute the reason for its falsity (though it does constitute a reason why (19a) could not be true).

As intimated earlier, these remarks have the implication that, when it comes to speakers, failure of presupposition in an assertion will be INCIDENTAL to speakers' acts of actually DENYING the assertion, even when they are aware of the presupposition failure. In illustration of this, compare (24) and (25) as continuations of (23):

(23) The bishop of Gateshead didn't confirm me...

(24) ...and incidentally Gateshead doesn't have a bishop.

(25) ...and incidentally the bishop of Durham did.

I discern a clear distinction in acceptability in the use of <u>incidentally</u> here; that in (24) is acceptable, that in (25) not. The effect is retained when <u>incidentally</u> is replaced by similar disjunctive adverbials such as <u>by the by</u>, <u>besides</u>, <u>anyway</u> and <u>by the way</u>. This distinction would be extraordinary and inexplicable in the absence of a Principle debarring a false presupposition from acting as a sufficient condition of the falsity of the presupposing sentence (the PP). Were the nonexistence of a bishop of Gateshead a sufficient condition for the truth of (23), it could no more be incidental to (23) than the fact that it was the bishop of Durham who performed the confirmation, and (23)+(24) would be as bizarre as (23)+(25). (23)+(24) makes it clear that, while the speaker is

aware of the fact that there's no Bishop of Gateshead, it is not that which motivates the denial in (23). Indeed, (23) considered in itself accepts the presupposition there is a bishop of Gateshead. (More on this in Ch. X) The speaker must thus have, and be in a position to provide, OTHER sufficent conditions for the truth of (23), as in (26):

(26) The bishop of Gateshead didn't confirm me; the Bishop of Durham did; and incidentally Gateshead doesn't have a bishop.

I have been concerned here just with the issues that surround the use of expression such as incidentally. (26) of course raises other issues as well and these are discussed in Chapter X.

I have devoted considerable space to the rebuttal of Fodor's rejection of the "irrelevance" idea. The reason for this should be manifest. As I understand it, "irrelevance" centres on the idea that a sentence with a false presupposition may itself be false provided there are grounds for its non-truth OTHER than the falsity of its presuppositions. Having developed the Revised Theory, I am already, independently, fully committed to this idea. That theory was developed to capture precisely this idea - on independently motivated grounds.

At the root of the Revised Theory is a definition of (base) presupposition (the RLDP) that is much weaker than that of Standard Presupposition (the SLDP). It is weaker in the sense that Revised Presupposition (its definition equivalent to the Presuppositional Principle) is compatible with the independent retention of the classical relation of strong entailment, whereas Standard Presupposition (which entails but is not equivalent to the PP)

overrides, implies the abandonment of, an independent relation of strong entailment. The revised theory thus adheres to the classical principle I earlier dubbed 'the Primacy of the Inheritance of Falsity'; a sentence that would be anyway be false -independently of presupposition-failure - will be false under the Revised Theory.

Recall our independent discussion for conjunction, for example. I have presented a strong theoretical and intuitive case for regarding (27) as false by virtue of the falsity of its (strongly entailed) first conjunct:

(27) The capital of France is Saumur and the king of France is bald.

This is indicated by the classical definition of conjunction. No other principle can be permitted to cut across the classical principle it exemplifies (re the inheritance of falsity) - and especially not if what we seek to develop is a two-valued logic with gaps. We have already noted of (27) that it is false for a reason that is independent of the presupposition-failure induced by the second conjunct. Concomitantly, we have already noted that (27) would still be false even were the presupposition of its second conjunct true. Under the Revised Theory, these facts are captured.

Most importantly, of course, this feature of the Revised Theory has been shown to provide automatically for a simple and perspicuous account of the filtering out of presuppositions as such in sentences such as (28) and its logical equivalents.

(28) There is a king of France and the king of France is bald.

Having allowed that (27) is false on the grounds of the falsity of its first conjunct, the theory may (and must) allow that (28) is likewise false. In this case, however, the first conjunct is NOT

independent of the presupposition of the second conjunct: it is EQUIVALENT to that presupposition. In this case, then, the falsity of 'There is a king of France' (strongly entailed by (28) via its first conjunct) is sufficient to falsify (28). Therefore, by the Presuppositional Principle to which the RLDP is equivalent, the conjunction (28) cannot and does not PRESUPPOSE the presupposition of its second conjunct, that there is a king of France.

This explanation is not open to the Standard Theory of Presupposition. The SLDP positively goes beyond the Presuppositional Principle in such a way as to make the TRUTH of a presupposition of A a NECESSARY condition of both the truth and the FALSITY of A. Under this characterisation, the falsity of a presupposition of A is incompatible with A being either true or false. So (27) - with a false presupposition - cannot be false under the SLDP. And if (27) cannot be false even by virtue of the falsity of its strongly entailed first conjunct, neither can (28). In this situation, special ad hoc arrangements are going to have to be made in order to allow that (28) IS, after all, false on the grounds of the falsity of its first conjunct. And we need to say that at least (28) is false if we are to capture the fact that (28) does not PRESUPPOSE (but strongly entails) that there is a king of France.

The parallelism of our discussion of (27) and (19a) will be evident. Under the Standard Theory, to allow that (27) and (19a) are false (as they intuitively are) is incompatible with allowing that they PRESUPPOSE that there is a king of France (which they intuitively do). Under the (weaker) Revised Theory, both are false for reasons that are independent of presupposition-failure. Like (27), (19a) has, independently of its false presupposition, false

strong entailments. This is evidenced by the fact that (like (27)) it could be false even in situations where there is a king of France: most saliently, it WOULD be false in the first situation considered earlier. I have argued that recognition of the classical case for regarding (27) as false and its independence of the need to recognise that (27) has a false presupposition is a PRECONDITION of predicting, and providing the obvious explanation of, the fact that (28) DOES NOT PRESUPPOSE (but strongly entails) that there is a king of France. In this respect the Revised Theory's explanation and prediction of the facts in (27) and (28) are inseparable from its characterisation of the sentences in (19) as being false while independently carrying the false presupposition that there is a king of France.

In conclusion, the 'relevance'/'irrelevance' dichotomy is very clearly at work in providing the simplest and most obvious explanation of the distribution of presuppositions in compound sentences. If it is operative in the compound context, we are more than entitled to expect it to be operative across the board, in simplex cases as well. I have shown that this is indeed the case and that it provides an obvious explanation of the differing logical statuses of different simplex sentences suffering from presupposition-failure. What is at stake in the 'relevance'/'irrelevance' dichotomy, then, is more than just intuitive differences in the logical status of simplex sentences suffering from presupposition-failure: the revised theory's solution to the "projection problem" for Standard presupposition is at stake.

In the section that follows I provide a critique of the alternative treatment proposed by Fodor in the wake of her rejection of the "irrelevance" idea and conclude that this alternative is not attractive. But, even dismissing the arguments advanced against

Strawson's thematic approach and Fodor's possible world approach, those treatments are weakened by the fact that they have no implications in terms of which the distribution of presuppositions in compound sentences might be predicted. In the Revised theory, by contrast, the presuppositions of compound sentences and the differing logical status of different simple sentences are accounted for in terms of a single fundamental principle constituted in the Revised Logical Definition of Preasupposition itself.

4. Fodor's incompletely specified possible worlds.

To account for the intuitive distinction in logical status between sentences such as (18a) and (19a) (repeated here)

(18a) The king of France is bald.

(19a) The king of France is standing next to me.

Fodor proposes (p. 205) that "we respond to sentences containing the <u>the king of France</u> in the same way as to sentences about any FICTIONAL individual" (my emphasis) - for example, Winnie the Pooh or Sherlock Holmes. To this end she allows speakers to choose the possible worlds of which they speak. There is no king of France in the actual world, but there are other (non-actual) possible worlds in which there is, and speakers may speak about such worlds. Fodor further appeals to the idea that individual worlds may be incompletely specified, just as the worlds of Pooh Bear and Holmes are incompletely specified. Fodor contends that the possible world inhabited by a king of France is specified only for his existence: it is not specified whether or not he is bald. Fodor describes such a king of France as "a very thin fiction" (205).

Now, Fodor in fact allows of (18a) that

> "it can be intended or construed in two different ways.As an attempt to say something about the real world, it fails, for it does not say anything about anything that is in the real world. As an attempt to say something about a non-real world, it succeeds. But WHAT it says about that non-real world cannot be assigned a truth value for the quite straightfoward reason that the world is not fully specified and it is neither true nor false within it that the king of France is bald."

At this point, a number of comments seem called for, but I shall reserve my commentary, except for the following point. It is not clear what Fodor means when she says that, construed as an attempt to say something about the real world, (18a) fails. Fodor cannot mean by this that it fails to have a truth value, for this would contradict her earlier argument that the distinction between making an exhaustive list of actual bald individuals and making an exhaustive list of actual individuals standing next to me is a merely practical difference, one which therefore can have no bearing on the logical status of (18a). If Fodor allows that (18a) can be about the real world, and if it is merely "in practice...harder to establish" that no bald person is a king of France than to establish that no one standing next to me is a king of France, then Fodor must allow that (18a) so construed does indeed connect with the real world which it is about and is, therefore, FALSE. It appears to me that, having wheeled on other possible worlds, and having allowed speakers choice as to the worlds of which they speak, Fodor must (if only for the sake of her own argument) limit the choice to the extent of insisting that a sentence containing the _the king of France_ is about a (non-real) world in which there IS a king of France. I would have liked to ignore the possibility that Fodor allows of in the above quotation; but she continues, in her treatment of (19a), in a similar vein:

"Sentence [(19a)], with its two referring expressions, must now be fitted into this picture, and it offers us three different kinds of construal. (1) Uttered with the intention of making a statement just about the real world it fails, for the attempt is to describe a relationship holding between two individuals in that world, but only one of them is present in it. (2) As an attempted statement wholly about a nonreal world, its status is more controversial, for it depends on whether we are prepared to allow that a nonreal world containing the king of France could also contain me. (3) But in any case, the most natural construal for a hearer who knows that I (the speaker) exist and knows that the king of France does not, is as a statement about both worlds at once What is asserted is that the relation of standing next to holds between me, an inhabitant of the real world, and the king of France, an inhabitant only of some nonreal world." (p.206)*

Fodor is committed to the third construal for it is on the basis of that construal that she develops the argument that (19a) is FALSE because 'stand next to' is a SAME-WORLD RELATION - a relation that can only hold between individuals existing in the same world (as is 'dine with', 'eat', and 'be married to'; in contrast to 'describe' 'resemble' and 'write about' which need not be).

Even accepting this roughly sketched trichotomy, there is it seems to me nothing pretheoretically more "natural" about the third construal at all. But the trichotomy itself appears to me spurious anyway: construals (1) and (2) are either incoherent or equivalent to (3) itself. Take construal (1). Fodor claims that, because on this construal (19a) is about the real world, it fails. Why this should be is not explained. But consider that, on construal (3) (19a) is also about the real world. To be sure, on this third construal, it is about a non-real world as well. But if (19a) fails on construal (1) (with respect to the real world), why should it not also fail with respect to BOTH of the worlds it is about on construal (3)? For each of those worlds is such that it does not contain one of the mentioned individuals. To reiterate my earlier suggestion, Fodor must rule out construal (1) as a coherent

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*The numbering in this quotation is my own.

possibility. Within her framework, she must insist that a sentence be 'about' whatever worlds contain the referents of its referring expressions.

This brings me to the choice between construal (2) and (3). Fodor makes a bow in the direction of the issue of cross-world identity (see eg Kripke 1972). In this context, however, this is not a side issue. In basing her treatment of (19a) on construal (3), Fodor is firmly committed to the rejection of cross-world identity. She cannot allow that the actual referent of "I" can exist in the king of France's world, for the simple reason that, if she did, she would be obliged to allow that (19a) was wholly about a possible world which contained both the speaker and a king of France (construal (2)). In that case, since that world is incompletely specified (most relevantly, in respect of who is standing next to who in it), (19a) would emerge as neither true nor false. But again, this is not what we sought to achieve, which is: an explanation of the FALSITY of (19a).

It is essential to Fodor's distinction between (18a) and (19a) that, in her possible world ontology, there is no cross-world identity. The king of France and the speaker are trapped each in their separate worlds. (19a) must then be about BOTH of those worlds.

This then is Fodor's distinction between (18a) and (19a): **(18a)** is about a world specified only for the king of France's existence. It is not specified whether or not he is bald in that world and therefore "it is neither true nor false within it that the king of France is bald". **(19a)** is false because it asserts that a SAME-WORLD RELATION holds between two individuals which are inescapably in DIFFERENT worlds, the one real and the other not.

I should perhaps remark that, in summarising Fodor's account as in the preceding paragraph, I have indeed curbed the liberality with which Fodor allows speakers to choose their worlds. What we seek to explain is the predictability, the consistency, of the intuition that (19a) (as against (18a)) is FALSE. We have seen that the logical status of (19a) would vary, and thus not be predictable or predicted, under the liberal choice countenanced by Fodor. In due course I shall argue that speakers' choices are not merely curbed but that, in the normal way of things, they have no choice whatsoever.

I come now to my commentary, beginning with the matter of CROSS-WORLD IDENTITY. We have seen that, in basing her account of the falsity of (19a) on the concept of SAME-WORLD RELATION, Fodor is committed to the rejection of cross-world identity: Fodor is bound to reject the supposition that I myself (as such) could be in the non-real world that a king of France inhabits. But this is quite evidently contradicted by the very examples of which Fodor treats. Fodor is anyway committed to cross-world identity by virtue of having to allow that there is, in some other possible world, a king of FRANCE. This other world then contains France. But France is in the real world as well. If Fodor allows for cross-world identity with respect to France she must allow it with respect to the referent of "I". There is then no reason not to allow that (19a) is about that incompletely specified world contain/both a king of France and the speaker. And, as already argued, this leads to the conclusion that (19a) is neither true nor false. But we sought an account from which it would follow that (19a) was false.

Secondly, the matter of INCOMPLETENESS. This is less straightforward. It appears to me that Fodor's account exhibits a confusion as to what it is we take to be incomplete when we speak of

incompletely specified worlds. There is a world of difference between an incompletely specified world and an incomplete world. ALL (non actual) possible worlds are incompletely specified; but NO POSSIBLE world is incomplete (i.e. a possible world cannot be incomplete). Fodor, it seems to me, conflates these two notions. By way of example, I have already quoted "the world is not fully specified and it is neither true not false WITHIN IT that the king of France is bald". In saying this Fodor is taking a property of the specification (namely, incompleteness) and attributing it as a property of the world itself. Clearly, though, (wigs and the possible vagueness of bald apart) any POSSIBLE world in which there is a king of France IS a world in which he either is or is not bald. (18a) does then have a truth value within that world; it would be perverse to suggest otherwise. But where does this leave us? I barely know how to frame the question I want to ask here but it would be something like this: what is the locus of the lack of truth value of (18a)? It appears to me that we are coming close here to saying that (18a) does have a truth value within the world to which it applies but we don't know what that truth value is! But this, even if it is coherent, is not what anyone has ever intended by the concept of "lack of truth value".

At the very least this account compounds the conceptual difficulties encountered earlier in connection with Van Frassen's abandonment of truth-functionality. If the king of France's world is a POSSIBLE world, then [kfb V ~kfb], as an instance of (P V ~P), is literally true in that world. Yet Fodor's conception of that world is such as to assign no truth-value to either of the disjuncts of that disjunction, even though there actually is a king of France in that world.

There is, of course, another way of talking about incompletely

specified worlds and one which is better in this context, for it preempts any attempt to transfer the incompleteness of a specification to the world of which it is a specification. It also has the advantage, in my eyes, of giving a more accurate picture of Fodor's proposal. In talking about an incompletely specified world, one is not really talking about a single world at all, but about a SET of worlds. We may then translate Fodor's discussion of (18a) as follows: (18a) is about that (infinite) SET of worlds which contain a king of France; each is of course complete, and in addition each is fully specified, but each is specified differently: in some he is bald and in others he is not. Fodor herself acknowledges (p. 204) that this as an appropriate translation - albeit en passent. In these terms, Fodor is claiming that the truth value gap arises because (18a) is about THAT GENERAL SET of worlds and, since the set contains both worlds in which the king is bald and worlds in which he is not, we cannot assign it a truth value.

I believe this gives a more accurate picture of what Fodor is actually proposing. And I have to say I do not conceive of the truth-value gap in the way that this view entails. Here the truth value gap seems to be modelling a kind of vagueness, a lack of specificity, a failure to be more precise, rather than the kind of logical failure that statement-failure is, let alone statement-failure induced by failure of presupposition. If a speaker is allowed to choose the set of worlds of which he speaks, if a hearer is allowed free construal as to the relevant set - consistent at least with the referring expressions employed, on what grounds does Fodor insist that the set must be of sufficient generality as to guarantee that what is said is so vague and so imprecise as to allow her to argue that it cannot be assigned a truth value? If speakers can choose, can we not allow them to choose to be more precise and

speak of more delimited, less general, sets? Aren't speakers anyway obliged to be more precise? More to the point, aren't hearers anyway obliged, if they possibly can, to interpret speakers as being more precise than this?

This brings me to my third main criticism of Fodor's treatment. In what way COULD a speaker be more precise about the set of worlds he speaks about? This and the previous questions presuppose that the speaker can in fact be imprecise in the way and to the extent that Fodor suggests. I want to deny this. A possible world is a set of propositions. Possible worlds are identified and differentiated according to which propositions are true in them. Vacuously, we may say that a proposition describes in part any possible world of which it is true (alternatively, a proposition is true in every possible world it describes). Having allowed speakers free choice as to the set of worlds of which they speak, Fodor allows that sentences containing _the king of France_ may be about the worlds that contain a king of France. In fact, as already argued, she must go further and insist on this. I would deny on conceptual pretheoretical grounds that there is any imprecision or lack of specification in (18a); but more importantly, in terms of possible worlds, I deny that the set of worlds that (18a) can apply to is so general as to include worlds in which the king of France is NOT bald in addition to those in which he is bald. If it is clear from the presence of _the king of France_ in (18a) that the speaker is speaking about a set of worlds containing the king of France, it is equally clear from the presence of _is bald_ which MORE SPECIFIC, more delimited, set within that set he is talking about. If the speaker of (18a) is allowed to talk about other possible worlds, then he is and must be talking that set of worlds in which there is a BALD king of France, because THAT is the set that (18a) defines and partly describes.

Having assimilated the king of France to fictions, having allowed speakers a choice as to the worlds of which they speak, we cannot but allow that what they say of those worlds is (vacuously) TRUE. If this were not so, how would we know how to identify and differentiate possible worlds? When we accept Conan Doyle as a writer of fiction, we accept that he is talking about another possible world. It is senseless to ask WHICH possible world, for it is precisely (and vacuously) the one in which all the sentences that go to make up the fiction are true. The sentences identify and define the world. We cannot allow for talk of OTHER possible worlds without simultaneously allowing that such talk will of necessity be precise enough to permit of an assignment of truth-value, and of necessity the value assigned will be [true]. How else could the speaker identify the set of worlds of which he speaks? But Fodor and I sought an account from which it follows that (18a) lacks a truth value.

In the previous section the question arose whether Fodor's theory of truth-value gaps could indeed be regarded as a theory of presupposition. The fact that Fodor abandons the Presuppositional Principle (and provides no definition of presupposition) suggests not. The discussion of this section has fully borne out this suggestion; the whole trend of her argument commits her coming up with something very different. Strawson and others (myself included) are concerned with PRESUPPOSITIONALLY-INDUCED truth-value gaps. They are concerned with the concept of presupposition and with existential presupposition in particular. In (18a) there is at least an existential presupposition - i.e. there is at least a weak logical implication of existence. And when I say 'existence', I mean actual existence, existence in the real world - not some kind of Meinongian subsistence. And when it comes to speakers making

existential presuppositions, we mean a particular kind of commitment to the existence of some individual in the real world. Fodor's account simply brushes all this aside. For Fodor, speakers may, in the normal way of things and without warning, choose the worlds of which they speak: thereby they are released, even as successful statement-makers, of commitment to anything beyond the meanings of the expressions they employ. This is in flat contradiction of the empirical facts of the matter; but it seems to me that we have anyway moved too far away from the concept of presupposition and of presuppositionally-induced statement-failure to regard Fodor's alternative as either viable or attractive.

CHAPTER X

THE PRAGMATICS OF "PRESUPPOSITION CANCELLATION"

1. Introduction: presupposition and negation again.

In this section I briefly review what has been established so far about negation in a semantically presuppositional language (cf esp Ch. III:3 and Ch. IV above) and make some general comments on the rationale of pragmatics.

I have sought to show that a semantically presuppositional language is, in a quite particular way, constrained in its expressive capacity. A semantically presuppositional language is such that, in it, there is no semantic negation of A that is expressive of presupposition-failure in A. At LEAST this is implied by any theory of presupposition that seeks a logical account of implications from both A and its negation. The Revised Theory presented here precipitates a negation of A that is compatible with an INDEPENDENT failure of presupposition in A but is not expressive of it. The Standard Theory goes beyond that idea, incorporating the stronger claim that, in a presuppositional language, there IS NO negation of A if A suffers from presupposition-failure (under that theory, ~A is not only not expressive of p-failure in A but is INcompatible with it). Either way, I have dismissed the idea that a logical theory of presupposition might (or can) admit of a further semantic type of negation of A that is true (just) when A suffers from p-failure (i.e. a negation that IS expressive of p-failure). Such a negation would be a function from the third logical status to truth and would, thereby, be a presupposition-cancelling negation,

under both theories. A presuppositional theory of truth-value gaps that includes such a negation is a theory capable of handling its own proper counterexamples and thereby contradicts itself and is unfalsifiable, or is at best trivial. It has been shown (in Ch. III), moreover, that the inclusion of such a negation directly conflicts with the criteria for a two-valued logic with gaps. That a logical theory of presupposition incorporating a presupposition-cancelling negation must be construed as a three-valued logic would anyway seem to be implied by the fact that, as a logical functor, semantic negation of ANY type is a function FROM a truth-value TO a truth-value; the admission of a negation capable of mapping a third logical status onto an actual truth value would oblige us to view that logical status as a (third) truth value. This suggests that the contradiction inherent in the idea that a presuppositional logic could incorporate a presupposition-cancelling negation is shared by the idea that a presuppositional logic could be a three-valued logic.

In summary, a presuppositional logic cannot without contradiction include any semantic negation other than a single, univocal presupposition-preserving negation, mapping just truth (falsity) onto falsity (truth) - a negation that thereby FAILS to map anything OTHER than a truth value onto a truth value. Such a logic cannot admit of a semantic ambiguity between a presupposition-preserving and presupposition-cancelling negation.

When we combine this general observation with the fact that what appears to be presupposition-cancellation (special, marked and unnatural though it may sound - cf. Ch II:3) is, as a matter of fact, an observed phenomenon, as in (1) - (and (2) and (3) if <u>regret</u> and <u>stop</u> in fact logically presuppose their complement clauses)

(1) The king of France isn't bald - there is no king of France!

(2) I don't regret inviting you - you jolly well gate-crashed!

(3) I haven't stopped smoking - I've never smoked in my life!

we face a choice: (a) abandon the enterprise represented by presuppositional logic, or (b) develop a non-semantic, non truth-conditional, non truth-functional, pragmatic account of such "presupposition-cancellations". (This, of course, is to take a decision on what kind of "phenomenon" has been "observed".)

Were this a merely equal choice, it seems to me clear that we should be obliged to adopt the (a) alternative and abandon the enterprise. That is, if all that is at issue is whether to pursue or abandon the enterprise of presuppositional logic, then (b) quite clearly lacks sufficient motivation.* Something other than a logic of presupposition must be at issue. That is, there should be independent, general motivation for the non-semantic account of the negation we wish to invoke in the case of presupposition cancellation. Furthermore, since this is to be a PRAGMATIC account of negation, we must show that there exists an independently plausible, independently required, general motivation for this non-semantic understanding of negation, which provides an explanation of it.

With respect to this last point, pragmatics is not unlike phonology as conceived of in standard generative phonology. To take a simple and familiar example, consider the word <u>cat</u> and its systematic phonetic representation [kʰæt]. Some but not all aspects of this phonetic representation are predictable and motivated; that is, some (but not all) are subject to, and derivable by, general

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* In saying this I am (temporarily) ignoring an argument to the effect that it is precisely a presuppositional logic that provides the proper explanation of the special, marked and (in Kempson's word) unnatural character of such examples.

rule. On the one hand, the fact that this particular word begins with a voiceless velar stop [k], is not explainable by any general principle - it is a particular, arbitrary fact to be observed, and recorded as such in the underlying phonological representation of the word in the lexicon. On the other hand, the aspiration ([^{h}]) associated with that initial voiceless stop in the pronunciation of the word is REGULARLY associated with voiceless stops in the initial position of stressed syllables (it regularly does not occur non-initially, eg in the pronunciation of the non-initial [k] of the word scan). The aspiration is therefore to be abstracted in the form of a phonological rule that aspirates such segments. The underlying phonological representation is thus simplified by not including representation of this aspiration; indeed the underlying representation will be wholly constituted by a RESIDUE of arbitrary phonological material, that which remains once the regularities inherent in the phonetic representation have been abstracted in the form of phonological rules. This particular rule thus predicts the (complementary) distribution of two sounds, [k] and [k^h], by deriving the latter from the former in some but not all environments.

Consider, by way of parallel, that the natural language conjunction or and the noun pen each have two understandings.* P or Q may be understood (i) in an inclusive sense compatible with, and indeed implied by, P and Q, and (ii) in an exclusive sense not compatible with P and Q, indeed implying ~(P and Q). And, of course, pen can be understood as meaning (i) 'ink-requiring writing instrument' or (ii) 'enclosure'. Now in the case of pen the dichotomy of understanding is an irreducible particular fact, not

*I use "understanding" here as a general term. When I say "has two understandings" I mean "can be understood in two different ways" without (or prior to) commitment as to whether the dichotomy is a matter of semantics or pragmatics.

explainable by reference to any general principle. There neither is, nor do we seek, any alternative but to observe the dichotomy, as semantic, and record it as such in the lexicon - i.e. acknowledge the existence of a genuine AMBIGUITY. In the case of _or_, on the other hand, a general explanation IS available for the exclusive understanding (ii). Not only is that exclusive understanding of _or_ derivable from the inclusive understanding by a plausible conversationally-driven calculation (involving Grice's Quantity Maxim), but this same calculation underlies and is required for parallel secondary understandings of a host of other expressions, for example the derivation of a partitive understanding of _some_ from its existential understanding, the derivation of a contingency understanding of _possible_ from its non-contingent understanding, and many others besides. Furthermore, the explanation is general in the further sense that it is available and required for those expressions, not only in English, but in a variety of other languages (if not all). That is, in contrast to what is the case with _pen_, these dichotomies of understanding are typically RETAINED by translations into other languages.*

In this sense pragmatics and phonology may in principle be compared. Pragmatic explanation takes the form of specifying a general calculation that derives one understanding from the other understanding in some, but not all, circumstances. Just as the phonological rule may be regarded as a function from a non-dichotomous (unique) underlying phonological representation ([k]) to a dichotomy in phonetic representation ([k] - [k^h]), so pragmatic explanation is a function from a non-dichotomous (univocal) semantic representation (eg 'V') to a dichotomy ('V' - '$\tilde{V}$') in pragmatic

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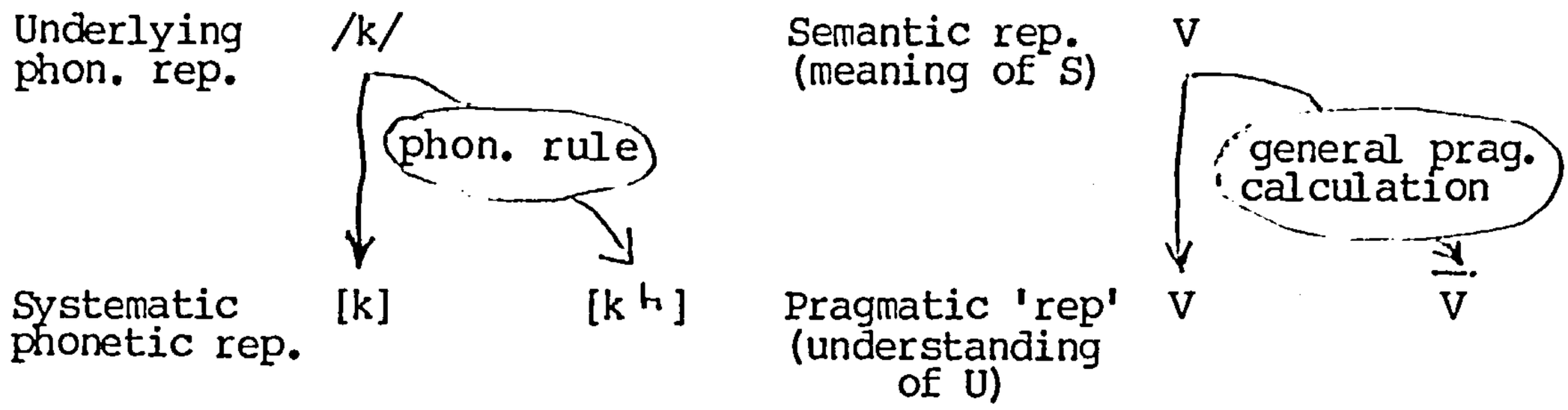
* This is not to deny that the formalisation of such quantity implicatures is not without its problems (cf Burton-Roberts 1984).

'representation' (a non-semantic dichotomy of understanding).



In thus outlining a rationale of pragmatic explanation and its implications for the strictly semantic, I am perhaps setting the scene for what follows in a rather deliberate and schematic manner. There is a reason for this. My purpose in this chapter is to argue, by way of support for a logical theory of presupposition, for the pragmatic analysis of a distinctive, special use of negation and show that such an analysis is necessitated independently of a logical theory of presupposition. But none of the data that I shall adduce is at all novel. On the contrary, it is well-established and has been the subject of some discussion. I am concerned with the general implications of the data, and these crucially involve the notion of pragmatically relevant generalisation. It seems to me that previous discussions of this body of data have obscured its implications for presuppositional theories of truth gaps.

Having shown that such theories in fact receive the required support from the independent necessity of a pragmatic analysis of special negation, I shall go further. I shall suggest, more strongly, that presuppositional theories of truth value gaps not only require, BUT ARE REQUIRED BY, a properly general pragmatic theory of special negation - showing thereby that the data provides additional, external motivation for such theories. This much stronger implication of the data cannot be brought out unless it is explicitly acknowledged that to characterise anything as 'pragmatic'

is to be committed to there being some semantic/pragmatic generalisation to be captured, and committed in the matter of what understandings do and do not fall strictly within the scope of semantics.

As a preliminary illustration of these remarks, consider again the Kiparskys' (1971) discussion quoted in Ch. II:3 above. It is clear (or will shortly become so) that it is this special use of negation that the Kiparsky's were describing when they observed:

> "Presuppositions are preserved under negation. That is, when you negate a sentence you don't negate its presuppositions.... In fact, if you want to deny a presupposition you must do it explicitly....Abe didn't regret that he had forgotten, he remembered. The second clause casts the first into a different level; it's not the straightforward denial of an event or a situation, but rather the denial of the appropriateness of the word in question. Such negations sound best with the inappropriate word stressed."

As already noted, the Kiparsky's were writing at a time, and in an intellectual climate, in which a rationale for pragmatic explanation and its implications for semantic enquiry in linguistics were not articulated, and possibly could not BE articulated* So, although it is in retrospect quite clear that what they were describing was but one example of a more general PRAGMATIC phenomenon, their discussion proceeded not only on a fairly particularistic basis but, more importantly, one that was necessarily indifferent to any semantics-pragmatics distinction.

This made it possible for the Kiparsky's to be universally

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*. By 'an intellectual climate' here I am referring to one consistent with an appeal to the USE theory of meaning as providing the most appropriate programme for enquiry in linguistics (one cognate with generative semantics). As argued in Burton-Roberts, in connection with a generally accepted Wittgensteinian analysis of ostensive definition (to appear), a thoroughgoing use theory of meaning is in principle inimical to a semantics-pragmatics distinction. See the useful remarks of Wilson 1975:13 on Fillmore 1971 in this connection.

represented, as we have seen, as postulating a (semantic) ambiguity of negation. And theories of presupposition have been attacked (and, curiously enough, defended) on that basis ever since. And it is dismaying to find that the most recent treatment of this use of negation - lengthy and comprehensive though it is - merely confirms and compounds the confusions. I refer to Horn's 1985 paper "Pragmatic ambiguity and metalinguistic negation". *

2. On Horn's dilemma.

The phenomenon in question is more generally illustrated in (4)-(18), all of which are taken, or adapted in non-relevant ways, from Horn 1985.$ Consider also (19).

(4) I'm not his daughter - he's my father!

(5) The glass isn't half empty, you pessimist, it's half full!

(6) We didn't engage in sexual intercourse, we made love!

(7) Granny isn't feeling lousy, Johnny, she's badly indisposed!

(8) I didn't eat the [tʰamɑtəz], I ate the [tʰəmeɪtəoz]!

(9) I didn't trap two mongeese, I trapped two mongooses!

(10) I didn't read the paper and get up, I got up and read the paper!

(11) I'm not happy, I'm ecstatic!

(12) We don't like cricket, we love it!

(13) Max didn't buy two cars, he bought seven cars!

(14) Some men aren't chauvinists, all men are chauvinists!

(15) Maggie isn't either patriotic or quixotic, she's both!

(16) I'm not meeting a woman this evening, I'm meeting my wife!

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* Burton-Roberts 1984:203 remains agnostic on the ambiguity of negation, but I now see that those remarks were consistent with this general trend in interpreting the Kiparsky's.

$ And Horn in turn owes many of them to earlier discussions, Wilson 1975 in particular.

(17) John didn't manage to solve the problem - it was quite easy for him to solve!

(18) The next Prime Minister won't be Wilson, it'll be Heath or Wilson!

(19) Max is not not very tall, he's a dwarf!

Horn 1985 is dedicated to the demonstration that there is indeed a marked, special, non-truth-functional (non-logical, non-semantic) USE of negation. This use may be described as metalinguistic in character, is most (or only) appropriate in contexts where the utterance in which it figures can be construed as a rejoinder, and is a device for objecting to another speaker's UTTERANCE on any grounds whatever, including the way it was pronounced, without actually constituting the semantic denial of the SENTENCE previously uttered.* This use indicates a speaker's unwillingness to assert or commit himself to a given proposition in a given way. It counts, not as an act of asserting the falsity of a proposition, but as an act of rejecting the utterance as unassertable or not assertable in the given way. This use of negation is itself highly pervasive in the use of language and connects with other metalinguistic uses of language.$

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*The uninitiated reader should, however, be warned that a confusing tradition has grown up in which this use of negation is actually called 'DENIAL' negation (presumably in order to reflect the above allusion to rejoinders). Henceforth, I shall use scare quotes when referring to it as 'denial negation'.

$ With respect to this last point, it is odd that Horn nowhere mentions the very relevant general work by Sperber and Wilson 1981 on the metalinguistic character of ironical utterances. They analyse irony in terms of the mention (as opposed to the use) of a proposition. The use of negation described above involves a special case of mention, namely (semi-) quotation. In characterising quotation as a special case of mention, I mean that quotation involves the mention of a proposition but, more specifically, mention of one that actually has been used in the discourse context. ('Semi-quotation' is the term Fillmore (1969:122) uses in connection with this use of negation.) That work would seem to be of particular relevance in accounting for the rather arch, more or less ironical tone that many associate with this use of negation.

None of these descriptions are original. In so describing the phenomenon, I am saying nothing that is not said - and in so many words - by Horn himself.* It is all the more striking then that, were one in the position of having to INVENT or FABRICATE a perfect solution to the problem posed for presuppositional semantics by utterances such as (1)-(3) above, it is just such a use of negation that one would be called upon to invent (I shall elaborate on this in section 3). What Horn's data and his description of it demonstrate is that there is no need to invent it. It exists, independently of the need to solve that problem. Put this another way: had we not noticed the independent existence of this pragmatic device (as indeed the Kiparsky's had not) a logical theory of presupposition would/should have encouraged us to go looking for it. In other words, such a theory predicts its existence.

While the remarks of the preceding paragraph suggest that the data and its accurate description have inescapable implications supportive of a presuppositional theory of truth-value gaps, Horn very conspicuously refrains from drawing any such conclusion. This is all the more surprising because he explicitly and repeatedly cites cases of 'presupposition cancellation' such as that in (1) above as being central examples of this same metalinguistic use of negation, thus taking (1)-(19) to be homogeneous in representing a single general pragmatic phenomenon, a view in which I concur.

This conspicuous failure on Horn's part requires explanation. The fact is that Horn faces a fundamental dilemma - one which he

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$ Nor is Horn alone in this. Indeed Horn invites us to conceive of his discussion "as a more explicit formulation of some ideas inherent in Ducrot 1972, 1973, Grice 1967, Wilson 1975 and others" (121). This is difficult since, as will become apparent, Horn's discussion is not more explicit. Horn (162), incidentally, disassociates his description of the phenomenon from that given by the Kiparsky's (quoted above) but without discussion. I discern no such distinction.

attempts to resolve (or rather avoid resolving) by compromise. The dilemma arises because Horn is reluctant to bring into question what lies at the basis of the controversy surrounding negation and its relation to a presuppositional theory of truth-value gaps. This puts him in the position of having to disagree both with the truth gap theories AND with their critics.

The basis of this controversy just alluded to is the Standard Assumption (SA-4 of Ch.II:3), shared by Thomason, Wilson, Kempson, Atlas and Gazdar among others, that a theory of presuppositionally induced truth-value gaps is by its very nature committed to a SEMANTIC AMBIGUITY OF NEGATION (SAN). Horn never questions this assumption, indeed reiterates it in one form or another on almost every page of his discussion, even at the cost of obliging himself (122) to describe Strawson as a proponent of SAN, in flat contradiction of the facts (as he elswhere (131) admits and proposes we should ignore!). This leads him to impale himself on one horn of the dilemma - as follows. What we have in (1)-(19), and what Horn seeks to establish that we have, is very clearly a distinctive PRAGMATIC phenomenon (though we have yet to provide the details that this intuitive assertion commits us to providing). As a PRAGMATIC phenomenon, it preempts a distinctive semantic analysis of (1)-(19) and hence preempts the positing of a semantic ambiguity of negation. So, IF a theory of truth value gaps is committed to SAN, the clearly pragmatic character of (1)-(19) counts against such a theory. (As indicated, though, it is a big 'if'. I have argued that, far from implying SAN, a truth gap theory is incompatible with SAN. This observation, combined with the pragmatic character of (1)-(19) yields the conclusion that, as far as a theory of truth-value gaps is concerned, SAN IS NEITHER POSSIBLE NOR NECESSARY, which is indeed one of the arguments of this chapter.)

So, on the one hand, Horn finds himself in agreement with the critics of semantic presupposition in saying that negation is semantically unambiguous - and, given his unquestioning loyalty to SA-4, in agreement with them *qua* critics of semantic presupposition. On the other hand, however, he is not entirely happy with the counter-presuppositional analysis of negation either.

> "....I am partly in accord with the classic monoguist position summarised by Gazdar (1979a:92): "There are no grounds for thinking that natural language negation is semantically distinct from the bivalent operator found in the propositional calculus." But the spirit (if not the letter) of this position is violated by my approach, which takes a wide array of uses of natural language negation to be non-truthfunctional and indeed entirely non-semantic." (Horn 1985:137)

Further, having noted (154) that, in Kempson's treatment, negation is unambiguously "the falsity operator of logic", he comments "I do not wish to rebut the gist of her account" and mildly reproves Kempson for ignoring "those cases of 'denial' negation whose behaviour does not naturally fall within the proper bounds of logical negation" (154). (I quote more fully below.)

I have to say that these remarks (and the compromise they anticipate) appear to me obfuscatory and, in the final analysis, incoherent. They obscure a quite fundamental disagreement between Horn and the critics of semantic presupposition, Kempson in particular. Beside this disagreement the points of agreement pale into insignificance. Let us be clear about this. In claiming that natural language is not semantically presuppositional and has an unambiguous negation, Kempson (and following her, Gazdar) are claiming that all the truth conditions of a positive sentence S are in the scope of negation in ~S, including those truth conditions of S that are analysed by presuppositional logicians as presuppositions of S. This claim amounts, of course, to a denial that there IS a semantic relation of presupposition; all truth conditions of S are

strongly entailed by S (and the single semantic negation can only be described as a 'presupposition-cancelling negation' - though, since there are thereby no presuppositions, the description is vacuous.) Now the distinction between INTERNAL (descriptive, narrow scope) negation and EXTERNAL ('denial', wide-scope) negation is, in this context, the distinction between a presupposition-preserving and a presupposition-cancelling negation. The terminological distinction between the negations only makes sense within theories which purport to admit BOTH of semantic presuppositions AND of semantic ambiguity in negation. Now Kempson's theory admits of neither. So, strictly speaking, it makes no sense to ask which of these two negations Kempson's theory claims is the single semantic negation. Nevertheless, if we allow ourselves for a moment NOT to speak strictly and pose that question, the answer is clear: for Kempson, the single semantic negation has the logical effect of the external "presupposition-cancelling" negation (that is WHY her theory is non-presuppositional: it is a negation of S that unfailingly yields an assignment of truth for ~S when S is not true; it is thus indifferent to a distinction between 'false' and 'neither true nor false' and, since this is the ONLY negation admitted, this amounts to the DENIAL of any such distinction; hence semantic presuppositions are disbanded.) And, continuing to allow ourselves to speak non-strictly, when I by contrast claim that presuppositional theories of truth gaps also imply a semantic univocality of negation, the single semantic negation that is implied by this is the internal, descriptive negation ("presupposition-preserving", though the description is vacuous since it is the only negation and the theory is presuppositional).

These remarks are intended to make it clear how the pro- and counter-presupposition camps must be seen as squaring up to each other once the red-herring of semantically ambiguous negation is

dismissed as an issue. The theories must be seen as being in agreement that negation is semantically unambiguous. The issue in contention is this: which understanding of negation is to be taken as THE truth-functional (logical) semantic negation and which pragmatically derived? Critics of truth gap theories are committed to its being the "presupposition-cancelling" (external, so-called 'denial') negation that is semantically basic and that any other understanding of negation is to be derived from that semantic operator in pragmatic terms, in terms of an explanation of a particular USE of that semantic operator in utterances. Diametrically opposed to this, proponents of truth gap theories are committed to its being the "presupposition-preserving" (internal, descriptive) negation that is semantically basic and that any other understanding of negation is to be derived pragmatically, in terms of an explanation of a particular USE of that operator. The disagreement then boils down to a disagreement as to which of two phenomena is to be given a distinctively pragmatic explanation, "presupposition-cancellation" or "presupposition-preservation" (i.e. in the final analysis, whether presupposition itself is a semantic or pragmatic phenomenon). This is the issue.

Horn obscures the issue. Indeed, he positively misrepresents Kempson (1975) on this, making it appear that Kempson is arguing exactly the opposite of what she is arguing:

> "[Kempson] goes on to present and challenge a variety of presuppositionalist views of ambiguous negation in which external or denial negation is taken as a semantic operator. Since I agree with Kempson that her 'denial' negation cannot be a semantic operator, and is indeed 'one of the uses to which negative sentences could be put' (99), I do not wish to rebut the gist of her account."
>
> Horn 1985:154.

Yet it follows quite clearly from the remarks of the preceding paragraph, and from her own discussion, that Kempson must be, and

is, arguing for a treatment of negation in which the ('presupposition-cancelling') external understanding of negation is DIRECTLY characterised by the semantics. For example, when Kempson 1975:99 considers the possibility that presuppositionalists, in an effort to resolve their problems as she conceives them, might attempt to "retain '¬' [external negation] as a denial operator and agree that the truth conditions of '~' [internal negation] must be extended to cover all these cases [i.e. cases such as (1)-(3)]", she correctly observes that this would be "to relinquish the very claim on which the entire presuppositional analysis is based" - for that is precisely the semantic analysis of negation that she herself is proposing. Since Kempson's position is that the understanding of negation found in (1)-(3) above is directly characterised by the semantics, it is that understanding which by her theory requires no special pragmatic explanation. Kempson 1979 is quite explicit on this point. She remarks of such examples that their existence "is consistent with this view and poses no problem for it" (287-8). Horn's analysis of (1)-(19) as forming a homogeneous pragmatic metalinguistic phenomenon is clearly and fundamentally opposed to the position of Kempson and counter-presuppositionalists in general. This is the other horn of Horn's dilemma.

The resolution of a dilemma necessitates the making of an unequivocal choice. Horn attempts to avoid the choice that faces him by retreating into vague and contradictory compromise.

> "In the synthesis that I shall advocate here negation in indeed ambiguous, contra Atlas, Kempson Gazdar et al. But contra... the three-valued logicians, it is not SEMANTICALLY ambiguous. Rather we are dealing with a PRAGMATIC ambiguity, a built in duality of use"
>
> Horn 1985:132.

I cannot conceive what Horn might mean by this. Is negation ambiguous or is it not? Is the expression "semantically ambiguous"

tautological or not? If not, what is a "pragmatic ambiguity"? What is a "built-in duality of use"? (Is Horn proposing a use theory of meaning?) What is this "built-in duality" built into? The expression itself? If so, it sounds semantic. But, we are told, it is a "duality of USE". Does the duality then reside in USE? If so, in what sense is it "built-in"? Assuming that "pragmatic ambiguity" is coherent, on what grounds does Horn claim that negation is pragmatically ambiguous? If he means that it remains equivocal even when used in utterances, this is simply false. Negation unequivocally has the 'presupposition-preserving' understanding in every case except those in which that understanding is starkly impossible - as in (1)-(3) above - in which cases it is, again unequivocally, 'presupposition-cancelling'. As Horn himself observes (121) this latter understanding is one that is "FORCED" upon the hearer in a particular context (see also Kiefer 1977).

My general remarks on pragmatics have the implication that if we are claiming that the understanding of negation evidenced in (1)-(19) is a matter for pragmatics, we are committed to deriving that understanding from another understanding, where this other understanding is directly characterised by the semantics, indeed is the semantic reading itself. In the case of (1), this commits us to the PRAGMATIC derivation of a "presupposition-cancelling" understanding of negation from a semantically basic, logical negation that is presupposition-preserving. In short, it is to be committed to a presuppositional semantics.

Horn resists this conclusion - clearly indicated though it is by his own discussion. Horn characterises the phenomenon in (1)-(19) as pragmatic (and this seems intuitive enough) but never provides any explanatory derivation of it and repeatedly contradicts himself in the matter of how this PRAGMATIC understanding of

negation relates to the logical SEMANTICS of negation. For example, at one point Horn speaks of this marked negation "as an extended metalinguistic use of a basically truth-functional operator" (122) and elsewhere makes remarks consistent with this. Now this seems clear enough (and - by my earlier arguments - this basically truth-functional operator must be the "internal", "descriptive", "presupposition-preserving" operator - indeed, Horn actually concedes it is "descriptive" (139)!). But, to take just one of many examples, Horn flatly contradicts this by alluding to "this special or marked use of negation, irreducible to the ordinary internal truth-functional operator"(132). In fact, Horn frequently goes so far as actually to obscure any semantics/pragmatics distinction, important though this should be in the context of this his discussion of negation, and is in much of his previous work (eg 1972, 1973). In illustration of this, consider his suggestion (151) that "we should be unwilling to claim that all negations are one", a suggestion that is almost meaningless in the context of a semantics-pragmatics distinction, for it fails to make explicit whether Horn is talking about negation per se (a matter of semantics) or the USES of negation (a matter of pragmatics). See also his discussion (165) of the question posed by Atlas 1981, "Is <u>not</u> logical?"

When, finally, Horn does explicitly address the question we are asking (164) we get this:

> "One issue remaining is the directionality of the relationship between descriptive and metalinguistic negation. Which is primary and which derivative? Or do both uses branch off from some more basic undifferentiated notion?* I have little to contribute on this point."

This at least is explicit, but it is extraordinary in a treatment

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*In terms of the phonological parallel drawn earlier, this suggestion of Horn's is reminiscent of phonemicists' postulation of 'morphophonemes' and concomitent morphophonological rules. Recall Halle's (1959:22-3) demonstration of the loss of generality that this move incurs. (I am being no more than semi-serious in thus extending the parallel - but no less either.)

that purports to treat of metalinguistic negation as a PRAGMATIC phenomenon.

I have devoted considerable space to the critique of Horn 1985. That paper offers itself as a candidate for extended discussion because it represents such a comprehensive review of the state of the art vis a vis special, marked negation and its relation to logical presupposition. In the section that follows I spell out in more detail the pragmatics of metalinguistic negation and its application to the general phenomenon of "presupposition-cancellation.

3. Metalinguistic negation and "presupposition-cancellation".

The single most important fact that I wish to draw attention to in this section is that there are good grounds for saying that (with just one exception to be discussed) each of the examples in the set (4)-(19) at least is a contradiction. It is striking that Horn at no point explicitly makes this observation. The generalisation rests, of course, on certain assumptions, most of which are uncontroversial, though some are more theory-dependent than others - as I now show.

(4)-(5), I take it, require no further elaboration in respect of this generalisation. Similarly, (6)-(7) are semantically contradictory on the assumption that 'make love' and 'engage in sexual intercourse' are (on one interpretation of the former at least) semantically equivalent, as are 'feel lousy' and 'be badly indisposed'. Such expressions are distinguished not in their semantics, but in their stylistic register; (6)-(7) are therefore contradictory. In (8) we have two pronunciations of THE SAME WORD 'tomato'; this distinction in pronunciation is immaterial to the

semantics, hence (8) is contradictory. Similarly in (9) we have two morphological analyses of THE SAME WORD 'mongoose'; again the distinction in perceived morphology is immaterial to the semantics, hence (9) is contradictory. (10) is contradictory on the assumption that the semantics of 'and' are correctly characterised by the (symmetric) truth-function '&' (where (p & q) = (q & p)) and any perceived non-truthfunctional assymmetry involving temporal sequence and/or causality is pragmatically explainable in terms of the Gricean injunctions to orderliness and/or relevance in co-operative speech, or in terms of Wilson and Sperber's 1981 development of Grice's theory. (11)-(15) may be loosely grouped together. If ecstasy is intense happiness then to be ecstatic is to be (at least) happy and (11) is contradictory. Similarly in (12). (13) is contradictory on the assumption that to buy seven cars is to buy (at least) two (i.e. two plus five more), '7' being equivalent, inter alia, to '2+5'. As regards (14), on the assumption that sentences containing 'all' (semantically, the universal quantifier) entail otherwise identical sentences containing 'some' (semantically, the existential quantifier), '...all...' contradicts '~(...some...)'. Similarly, (p & q) entails (p V q); hence (15), which is of the semantic form ((~(p V q)) & (p & q)) (where ~(p V q) = ((~p) & (~q)), is contradictory. These examples fall together because the semantic analysis involved in each depends upon giving a pragmatic explanation (in terms of conversational quantity implicature) of the discrepancy between this semantic analysis and how such expressions can be understood in ordinary discourse. Example (16) may be another such example. (16) is contradictory on the assumption that, although a man uttering the first clause would convey the suggestion that the woman he is meeting is not his wife, this implication is not semantic, but a special case of conversational quantity implicature; therefore if a man is meeting his wife he is of necessity meeting a woman.

(17) requires slightly more care. It has been claimed (Kartunnen 1971a, Kartunnen & Peters 1979) that sentences containing 'manage' (as an 'implicative' verb) are truth-conditionally equivalent to the clause functioning as the complement of that verb (so that 'John managed to solve the problem' is true (false) if and only if 'John solved the problem' is true (false)), but that the SEMANTICS of this verb includes a NON TRUTH CONDITIONAL element of CONVENTION to the effect that there is some difficulty involved in the achievement that is 'managed'. If this is so, (17) is contradictory for the first clause of the example is truth conditionally equivalent to 'John didn't solve the problem' while the second entails that he solved it. (It is relevant to note that, were the suggestion of difficulty to be treated truth-conditionally, and as a strong entailment, (17) would NOT be a logical contradiction - it would be equivalent to 'John didn't solve the problem with difficulty, he solved it with ease').*

(18) - due to Wilson - is not in fact contradictory as it

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*Wilson 1975: Chs 6 and 7 considers the possibility of treating the semantics of certain other expressions in a similar manner. For example deprive and spare. On such an account, the truth conditional semantics of these verb would be identical (X deprives/ spares Y (of) Z iff X witholds Z from Y) but the SEMANTICS of each includes a further non-truth-conditional element. In the case of deprive, that Z is desirable (in someone's eyes), and in the case of spare, that Z is undesirable (in someone's eyes). Less convincingly, Wilson considers a similar treatment for the distinction between plan and plot, and trusting and credulous. These I think are different. There is it seems to me no reason not to analyse plots TRUTH-CONDITIONALLY as secret and nefarious plans, credulity as undiscriminating trust. This wholly truth-conditional analysis predicts that (i) and (iii) are contradictions but not (ii) or (iv), a prediction I am happy with.

(i) That's not a plan, that's (!simply) a plot.
(ii) That's not a plot, that's (simply) a plan.

(iii) Dinah's not trusting, she's (!simply) credulous.
(iv) Dinah's not credulous, she's (simply) trusting.

(ii) merely denies that the plan is secret and nefarious. (iv) merely denies that Dinah's trust is undiscriminating. This asymmetry comes over more clearly in (v) and (vi): [continued]

stands. But we are immediately led to a contradiction in considering the obvious intention behind its utterance. (17) is of the form ((~p) & (p V q)). From this we are entitled to infer q (by modus tollendo ponens) i.e. that Heath will be Prime Minister. But, as Wilson 1975:150 observes "this is not at all what is meant". The non-logical, epistemological point the speaker is making would be brought out if (18) were followed by:

B: Are you saying it'll be Heath?

A: No. I'm simply pointing out you can't yet be so sure it'll definitely be Wilson.

What the speaker intends, then, is consistent with the contradictory (18a):

(18a) It won't be Heath and it won't be Wilson, it'll be either Heath or Wilson.

(The opposite epistemological point would be made by the directly contradictory (18b):

(18b) It won't be Heath or Wilson, it'll be Wilson!)

I have included (19) because it is a rather clear example of

(v) a. !That's not a plan, though it IS a PLOT.
b. That's not a plot, though it IS a PLAN.

(vi) a. !Dinah's not trusting, though she IS CREDULOUS.
b. Dinah's not credulous, though she IS TRUSTING.

<u>deprive</u> and <u>spare</u>, by contrast, remain resolutely symmetrical in this respect:

(vii) a. I didn't deprive him of a discussion, though I did SPARE him one.
b. I didn't spare him a discussion, though I did DEPRIVE him of one.

If this indicates that <u>deprive</u> and <u>spare</u> should indeed include a non truth-conditional component of meaning, so be it. It should follow from that analysis, however, that both (vii-a) and (vii-b) are truth conditional contradictions. This is not obvious to me.

the general phenomenon. By double negation, the first clause semantically entails that Max is very tall, which contradicts the assertion that he is a dwarf. It is the fact that this application of double negation is so clearly at odds with what the speaker intends and is doing here that makes it such a clear example.

In such terms, then, (4)-(19) are truth-conditional contradictions. In itself, this observation is of course a gross distortion of what is going on here. In saying this, though, I do not mean that it is a distortion of the sentence-semantics as such, but a distortion of what a speaker would be doing and intending to convey in uttering those sentences. The semantic analysis of these examples as being literal contradictions (as being, from a semantic point of view, impossible) is not only correct, it is actually required if we are to provide an explanation of what a speaker must intend by his utterance of them and of the ease with which this intention is recognised. That is, a recognition of their "semantic impossibility" is a necessary component in the explanation of their "pragmatic possibility".

It is clear, in (19) for example, that it is the immediate utterance of the contradiction-inducing second clause that prevents us, on the pragmatic level, from adhering to the analysis indicated by the semantics and analysing 'not not very tall' as meaning 'very tall' (In fact, 'not not very tall" willy-nilly means 'very tall'. What I should have said here is: analysing the speaker's use of 'not not very tall' to CONVEY 'very tall'; this makes it clearer that we are talking, not of sentence meaning, but of speaker's meaning.) Similarly in (15), it is the second clause that prevents us (and the hearer) analysing the utterance of the first clause as conveying the negation of a disjunction (having as its logical consequences that Maggie is not patriotic and that she is not quixotic) which, in

logical terms, is exactly what it is.

In the face of such blatent contradictions, the co-operative hearer - that is, the hearer who assumes that the speaker is being co-operative - must perform a re-analysis in order to recover from the utterance of these literal contradictions an intention to convey another, non-contradictory idea. This calculation is NECESSITATED by the contradiction induced in each case by the second clause. And it will be FACILITATED by a context that includes an appropriate previous utterance by some other speaker (or an allusion to such a previous utterance). "Facilitating" is perhaps too weak a description of the role played in this by an appropriate previous utterance. Such a context is not merely facilitating, but ENABLING in this respect. For, even though none of these examples has in fact been supplied with a context, it is striking that we feel impelled to conceive of them as occuring in a context in which they can be construed as rejoinders to some previous utterance.

The explanation of the enabling character of such a context is inalienably bound up with the metalinguistic character of the examples themselves. Take (15). The enabling context for (15) would include an utterance of (15a):

(15a) Maggie is/must be either patriotic or quixotic.

This is enabling of the required re-analysis in that it allows (if not obliges) us to construe the utterance of the first clause of (15), NOT as the semantic denial of (15a) - i.e. not as a straightforward use of the proposition '~(15a)' - which is anyway ruled out by the second clause of (15) - but as a use of negation that operates in respect of a quotational allusion to the previous use of, and hence in respect of a MENTION of, the positive proposition (15a). This analysis explains why the normal rules of

logical inference (which apply in respect of the actual sentences) do not apply to these apparent utterances of them. For what is mentioned (as opposed to used) is, as it were, hermetically sealed in logical terms from its immediate (intra-sentential) linguistic context. Thus in (19) double negation is inapplicable because the two negations are operating on different levels (to use the Kiparskis' term), the one "sealed" within the mention (""(Max is) not very tall""), the other operating externally on that mention, whose internal logical content is opaque for all purposes external to that mention.* Similarly, quantifier exchange fails in (16), modus tollendo ponens in (18), and so on. In each, the interaction of this sealed-off negation would be crucial to the functioning of those logical principles.

Conceiving of the relevant expression or proposition as being sealed within a mention thus simultaneously resolves the contradiction and reveals the speaker's intention. It resolves the contradiction because in mentioning (rather than using) a proposition, a speaker is absolved of any responsibility for, or commitment to, any aspect of what he mentions.$ And it reveals his intention as being object to a previous utterance, a previous USE of

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*As Horn and others have observed, there is a purely morphological reflex of this "sealing up" effect: semantically 'not be happy' and 'be unhappy' are equivalent, but the latter, in which the negative is morphologically incorporated, precludes the pragmatic metalinguistic re-analysis I am here describing (cf.!"I'm unhappy, I'm ecstatic", !"We dislike cricket, we love it", !"Maggie's neither patriotic nor quixotic, she's both".) And, although the negative particle appears to be playing its normal role in the positional syntax of the sentence, it fails to trigger negative polarity items such as <u>yet</u>, <u>any</u>, <u>a single</u>, <u>lift a finger</u>, <u>give a damn/hoot</u> etc.

$To take only the most recent example I've encountered: when Chief Daniels ("Hill Street Blues" 7.3.87) complains:

> I subscribe to the survival of the fittest and I'm an unfeeling brute; Darwin subscribes to it and he's a genius!

he is not committed to the proposition that he is an unfeeling brute (nor for that matter to the proposition that Darwin is a genius) because he is MENTIONING (rather than using) a proposition that he feels is in the air.

the proposition, and not as denying that the proposition is true/ asserting its falsity.

The grounds on which I earlier suggested that the independent existence of such a use of negation constitutes "a perfect solution" - a perfect explanation of so-called presupposition-cancellation - should now be clear. It will present the matter first in terms of the stronger Standard theory of presupposition before considering, in the section that follows, how the Standard and the Revised theories compare in the light of the remarks that follow.

The Standard presuppositional theory of truth-value gaps has it that a sentence suffering from presupposition-failure is neither true nor false; negation is not expressive of the non-truth of such sentences, for the negation of any such sentence effects an equal commitment to the truth of the (failed) presupposition and such an attempted denial incurs the same logical failure as the would-be assertion that it purports to deny. Such a theory is intended as a theory of statement failure: positive or negative, sentences suffering from presupposition-failure are not assertable. Under such a theory, it is truth conditionally contradictory to deny the truth (assert the falsity) of a sentence on the grounds of the falsity of its presuppositions.

Under that theory, (1) receives the following truth-conditional analysis. The first clause logically presupposes (20):

(20) There is a king of France.

The second clause entails (is) the negation of (20). (1) is therefore a truth-conditional contradiction. Under this theory, the speaker - as the speaker of a presuppositional language and one who knows that (20) is false - cannot assert the falsity of (21) below. The pragmatics of (1) are therefore identical to that (4)-(19). As

with those examples, (1) is only perceived as appropriate in a context in which it can be construed as a rejoinder - in this case, as a rejoinder to the utterance of (21):

(21) The king of France is bald.

As part of this rejoinder, the first clause is to be pragmatically re-analysed as a use of negation operating, not (truth-functionally) on a proposition, but non-truth-functionally on the MENTION of a proposition previously used - i.e. operating on the speaker's QUOTATION of a previous speaker's USE of (21). The utterer of (1) is thereby pragmatically absolved of any responsibility for, or commitment to, what he WOULD be committed to by the (presuppositional) semantics of the negation of (21) were he simply USING the negation of (21). He is MENTIONING (21) in order to object to it in the only way he CAN object to it, given that he is speaking a logically presuppositional language with truth-value gaps, i.e. as in all the other cases considered, not by denying its truth (= asserting its falsity), but by objecting to it on the grounds of its assertability - for in that presuppositional language (21) is NOT false: it is neither true nor false.

Notice in passing that, as Horn observes, the morphology and syntax of the use of negation in the first clause of (1) is entirely consistent with what we know of metalinguistic negation in general. Compare (22) and (23):

(22) The king of France is not happy - there's no king of France.

(23) !The king of France is unhappy - there's no king of France.

See also:

(24) !The king of France doesn't give a damn - there is no king of France.

!

(25) the king of France isn't lifting a finger - there is no king of France.

(26) the king of France hasn't lost $\begin{Bmatrix}\text{some}\\ \text{!any}\end{Bmatrix}$ hair $\begin{Bmatrix}\text{already}\\ \text{!yet}\end{Bmatrix}$, there is no king of France.

There is incidentally a further ramification of this analysis. Consider (27):

(27) The king of France isn't bald, because there is no king of France!

I am concerned with this use of <u>because</u>. If, as Horn and I are claiming, (1) involves a special, metalinguistic use of negation, then (27) must involve not only that special use of negation but also a special metalinguistic use of <u>because</u> operating on "the same level", as it were, as that use of negation. The general pragmatic analysis predicts in other words, that a special metalinguistic use of <u>because</u> is observable in speakers' utterances. Otherwise the <u>because</u> clause would have to be analysed as providing a reason for the content of the first clause ('the king of France isn't bald') on an assumption of the literal truth of that clause. On the metalinguistic analysis that is indicated, the <u>because</u> clause is, and must be seen, not as providing a reason for thinking that the first clause is true, but as metalinguistically expounding the SPEAKER'S reason for DOING what he is doing by means of the first clause. And this pragmatic analysis of a special use of <u>because</u> is by no means peculiar to such examples. Compare (28) and (29):

(28) John has got his hat on because he's going out.

(29) John is going out because he has his hat on.

(28) is consistent with an ordinary semantic analysis of <u>because</u> clauses as providing a reason for John's having his hat on on the assumption that it is the case that he indeed has it on. But if (29) is construed thus - as providing a reason for John's going out

(and on the assumption that he IS going out) a quite bizarre picture is conjured up of John and his reasons for going out! No; in (29) the because clause must be construed metalinguistically, as providing, not the reason for John going out, but an explanation of the SPEAKER'S reason for SAYING that he is. The same metalinguistic analysis is indicated for (30) and (31):

(30) Max is in because I can see smoke coming from his chimney.

(31) Please leave the room now because I'm going to wash the floor.

In (31) the because clause is not part of the request (as it would be in the rather odd request "Don't do it simply because I ask you, do it because you want to"). It offers, not a reason for the addressee to leave the room, but a reason for the speaker's making the request. (Why is subject to the possibility, as when I ask a flat-earther "Why is the earth flat?". Here I am not in fact asking why the earth is flat, I'm asking why the flat-earther SAYS it's flat. Coming from anyone but a flat-earther, the why in this question must be construed as operating on a MENTION of the proposition that the earth is flat.)

Before we turn to the general implications of this analysis, consider the following. The particular relevance of example (19) is that it provides an example of something that is anyway predicted by the general account of metalinguistic negation: that the metalinguistic use of negation is not confined to the rejoinder-rejection of the utterance of a POSITIVE. In (19) we have a rejoinder that rejects the previous utterance of a negative. This is of particular relevance in the context of presuppositional theories of truth-value gaps, for such theories predict that anyone disposed to reject an utterance of (21) as being unassertable (as in

(1)) will be equally disposed to reject its negation on the same grounds, as in (32):

(32) The king of France isn't not bald - there is no king of France!

and, indeed, as in (33)!

(33) The king of France isn't either bald or not bald - there is no king of France!

seen as a rejoinder to a previous utterance of, say, "Either the king of France is bald or he isn't".

The reader will have noticed that my use of the term "presupposition-cancellation" has been attended by scare-quotes. The reason for this is that that term is ordinarily employed in the context of negation to mean the use of not-S to deny the presuppositions of S. Now, by definition a presupposition of S is a presupposition of not-S. So "presupposition-cancellation" specifically involves the use of a sentence to deny its own presuppositions. (This is what I mean when I talk of denying a presupposition QUA presupposition.) I have consistently maintained that this is impossible (i.e. not possible without contradiction) - this is why the concept of a (semantic) presupposition-cancelling negation is contradictory, and hence why (1)-(3), seen as examples of exactly that (semantic) concept of presupposition-cancellation, must be seen as incorrigibly inimical to a logical theory of presupposition. No logical theory of presupposition can admit of such a thing. And the foregoing discussion of metalinguistic negation shows that in (1) we do not in fact HAVE "presupposition-cancellation" as such. At the semantic level we would indeed have a contradiction; on the actual (pragmatic) level of utterance at

which (1) is properly construed, no presupposing sentence is USED, though a presupposing sentence (the positive one) is MENTIONED. Furthermore, the denial of the sentence that is presupposed by the mentioned (quoted) sentence occurs explicitly and separately in the SECOND clause and is not therefore a case of "presupposition-cancellation" in the special (and contradictory) sense that is inimical to logical theories of presupposition. To regard it as such would entail regarding the explicit denial "There is no king of France" as presupposing its own negation.

If there is a single case that comes at all close to being a case of "presupposition-cancellation" as such, it would consist in the utterance of (34), (=the first clause of (32)).

(34) The king of France isn't either bald or not bald!

I say this because, under a presuppositional logic, a speaker uttering something like (35):

(35) Surely, either the king of France is bald or he isn't!

is committed to nothing of empirical substance beyond the presupposition that there is a king of France. There would then be little point in uttering (34) unless one sought to reject the utterance of (35) on the grounds of its failure of presupposition. So, if there is a candidate for "presupposition-cancellation" as such, I concede that (34) might be it. But look at what the utterer of (34) has had to do in order to cancel the presupposition as such! He has committed himself to the contradiction of denying a necessary truth. This denial of a particular non-trivial presupposition as such commits him to the more sweeping denial of the infinite set of trivial presuppositions, thus bearing out the contention that semantic presupposition-cancellation as such is contradictory and the connection (mooted in Chs I, III, VIII) between trivial and non-

trivial presupposition.

I now make explicit the further implications of this general description of the pragmatic phenomenon of metalinguistic negation. The discussion has established that the phenomenon in (1)-(3) (though it is (1) that I am really concerned with) is but one example of a general pragmatic phenomenon. This indicates the independent necessity of some pragmatic explanation. There is therefore no need to concoct an ad hoc account of the phenomenon in (1) and its (pragmatic) possibility does not therefore constitute evidence against presuppositional theories of truth-value gaps.

This is the very least of what has been demonstrated here. A much stronger implication emerges from the fact that (4)-(19) are literal (truth-conditional) contradictions. Not only is this a very obvious generalisation in its own right, it plays a role in the provision of an explanatory motivation for the pragmatic analysis of those examples. On a presuppositional theory of truth-value gaps, and only on such a theory, this explanatory generalisation extends automatically to include (1)-(3) in its application, thereby applying across the board. It hardly needs pointing out that on counter-presuppositional theories of negation such as that expounded by Kempson, (1)-(3) simply are not semantically contradictory. That theory denies that the implication to (20) from the first clause of (1) is a truth-conditional implication. On the contrary, it is analysed (with Grice 1981) as a conversational implicature, one that is (as conversational implicatures are by definition prone to be) cancelled WITHOUT CONTRADICTION in the second clause. And then, on that theory, the use of negation in the first clause of (1) must be (and is) claimed to receive a straightforward pragmatic construal that is identical to its semantics, with negation construed pragmatically as the ordinary truth-functional negation of a

proposition on the unexceptionable grounds of the falsity of one of its strong entailments. Since this theory commits us to denying the homogeneity of (1) with respect to (4)-(19), while still requiring an independent account of the latter set, I take it to be inadequate on observational, descriptive, and explanatory grounds. (See the critique of the conversational analysis in Kiefer 1977).

Since I, with Horn and others, take (1)-(19) to constitute a homogeneous set of metalinguistic negations, it is of some importance to capture the generalisation that the motivation for the pragmatic re-analysis invited by this use of negation stems from the need to resolve a truth conditional contradiction. This implies that a properly general and explanatory account of metalinguistic negation itself depends upon a presuppositional theory of truth gaps. It is on these grounds that I earlier claimed that a logically presuppositional theory not only requires, but is required by, a general explanation of metalinguistic negation. The latter phenomenon thus provides additional, external motivation for such a theory.

I have mentioned that Horn ignores this generalisation. I attribute this to the fact that Horn is focussing on another, lesser generalisation. This is a generalisation to the effect that what is being objected to by the metalinguistic use of negation is some NON TRUTH-CONDITIONAL aspect of a previous utterance, be it pragmatic, non truth-conditionally semantic, phonetic, morphological, or stylistic. This is a lesser generalisation because, while it holds in respect of (4)-(19), it does not hold in respect of (1)-(3). That is, (4)-(19) and (1)-(3) are distinguished by the fact that the latter are used to object to what on any theory, be it pro- or counter-presuppositional, is a truth-conditional implication. For example, (1) is used as a rejoinder to (21), objecting

to it on the grounds of its truth-conditional relation to (20).* So, if what we seek to capture is the homogeneity of the set (1)-(19), and it is (for Horn as well), this particular observation is NOT in fact a generalisation that holds in respect of the set at issue (Horn fails to note this).

It might appear that this discrepancy between (1)-(3) and (4)-(19) could be viewed as the thin end of a counter-presuppositional wedge, indicating that, appearances notwithstanding, (1)-(19) do not in reality constitute such a homogeneous phenomenon after all. This line of thinking must be rejected, I think. For it depends on ignoring yet another generalisation, one which resolves the discrepancy in way that is perhaps rather surprising. It is true that (1) is used to object to a truth-conditional aspect of a previous utterance ((21) as it happens), whereas (4)-(19) are used to object to NON truth-conditional aspects of previous utterances. But, as I noted earlier, under a presuppositional theory of truth-value gaps, the utterer of (1) is analysed as "MENTIONING (21) in order to object to it in the only way he CAN object to it, given that he is speaking a logically presuppositional language with truth-value gaps i.e. as with all the other cases considered, not by denying its truth (=asserting its falsity) but by objecting to it on the grounds of its non-assertability, for in that presuppositional language (21) is not false: it is neither true nor false." As discussed in earlier chapters, I conceive of a language that is logically (truth-conditionally) presuppositional as being

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*To my knowledge, only Karttunen & Peters (eg 1979:48) suggest that the relation between (21) and (20) is non truth-conditional. They treat it as a conventional implicature. See my earlier remarks (Chapter VII.3) on this proposal.

(relatively) constrained in its logical expressive capacity: it does not afford the truth conditional, truth functional, expressive means of rejecting (21) as such, i.e. a semantic rejection in terms of the negation of (21).

The higher generalisation that covers (1)-(19) is that, although what is objected to in the metalinguistic use of negation is truth-conditional in (1)-(3) but non-truth-conditional in (4)-(19), in NONE of these cases can it be objected to truth-conditionally and as such - i.e. in none of the cases can the objection itself take the form of an ordinary truth-functional logical denial of the content of the utterance being objected to. As regards (4)-(19), it is self-evident that if a speaker objects to some non truth-conditional aspect of a previous utterance he can hardly expect (and he can hardly be expected) to be able to reject the utterance by the ordinary use of the truth-functional negation operator. By definition, this operator is a function that takes only a set of truth-conditions as its argument. As regards (1)-(3), on the other hand, this negation function again takes only a set of truth-conditions as its argument but, in this case and by the definition of presupposition (Standard or Revised), NOT ALL truth conditions of a sentence are included in the set that constitutes the argument of this function. It is a defining property of those truth-conditions that are presuppositions (Standard or Revised) that they are EXCLUDED from that set of truth-conditions which constitutes the argument of the truth-function we call negation.

This then is a point of contact between logical presupposition and non truth-conditionality (generally, of whatever character): that if the grounds on which an utterance is to be rejected are either presuppositional or non truth-conditional, the rejection itself cannot be achieved by means of the ordinary truth-functional

use of negation. This does not indicate, as counter-presuppositionalists might seek to suggest, that presuppositional phenomena are wholly non truth-conditional in character. By the argument presented here, quite the reverse is the case: a truth-conditional, logical account of presupposition articulates the connection in an explicit, coherent, explanatory fashion.

4. Standard and Revised theories compared.

I have now presented the general case for regarding metalinguistic negation as not merely buttressing a presuppositional theory of truth-value gaps but as providing additional external motivation for one. It appears to me a strong case. In presenting it, however, I did not discriminate between Standard Theory presupposition and the base- and generalised presuppositions of the Revised Theory. I conclude this chapter by disentangling those theories and assessing how each individually fares in the light of those general considerations. In one particular respect, I am obliged to end on an inconclusive note, due to my uncertainties regarding the logical status of the generalised presuppositions of negative sentences (cf Ch VII:3).

Perhaps the most important point to be made about the case presented in previous sections of this chapter is that it depends on a recognition of the incompatibility of presuppositional logic and a semantic ambiguity of negation. I regard this as being the single most important enabling factor in drawing out those implications from the data. Consider Wilson's 1975 position, for example. The reader will have noticed the reiterated allusion to Wilson 1975 as the source of many of the examples of special, paradoxical negation. Yet Wilson is a stern critic of logical presupposition. Wilson,

like Horn, draws out no positive implication for logical presupposition from the data in part because she too regards such theories as committed by their nature to a semantic ambiguity of negation:

> "...an adequate theory of presuppositions must allow for negative sentences to be ambiguous between readings on which they carry presuppositions and reading on which they do not."
>
> Wilson 1975:35.

But, in Wilson's case, this is not the whole story. Her critique of logical presupposition is a critique of Standard logical presupposition. In that context, she views the postulation of an ambiguity of negation as just one among many ad hoc devices that are required to buttress the Standard theory against its counter-examples. We have seen that conjunctions mostly do, but sometimes do not, carry the presuppositions of what is conjoined. The same applies to disjunctions. And it applies to conditionals. These facts do not follow automatically from the Standard Logical Definition of Presupposition. They must be captured piecemeal, by attributing special (semantic) properties to each logical functor. Wilson sees the fact that negations mostly do, but sometimes do not, carry the presuppositions of what is negated as being all of a piece with this general picture. And it is in terms of this general picture that Wilson elaborates her critique of the Standard theory of presupposition.

This is a valid general criticism of presuppositional logic as instantiated by the Standard theory of presupposition. Its validity provides an important motivation for the Revised theory presented here. The implication of this, in the present context, is that the Standard theory can draw little comfort from the foregoing discussion of metalinguistic negation. Whatever solution is available for negation, that theory is still burdened with the need

to elaborate, piecemeal for each other functor, special semantic properties in accounting for the facts. On the Revised theory, by contrast, the facts about the presuppositions of compound sentences, and others concerning the logical status of simple sentences, fall out automatically.

But a more general argument of the present work should be borne in mind: that the problems faced by the SLDP are to be attributed to the more general fact that the SLDP induces a TRIVALENT logic of presupposition by the criteria here proposed. This I think is more strictly relevant to the question of how the foregoing discussion of metalinguistic negation bears on the Standard theory of presupposition.

In presenting the arguments of the last section, I used the term "truth value gap" in much the same way as it is generally used in discussions of presupposition i.e. with gay abandon. But the use of that term was in fact crucial to the intuitive force of those arguments: I appealed to presuppositional theory as a theory of statement failure, having implications for what is truth-conditionally and truth-functionally assertable and deniable, as placing a particular expressive constraint on the language. It was intuitively important to the argument that my allusions to the logical status "neither true nor false" be understood as allusions to exactly that logical status as such, a LACK of truth-value, not some third truth-value implying a yet greater expressive capacity than that afforded by standard classical logic. The connection between presuppositionality and non truth-conditionality in particular depended on this. It appears to me, then, that the arguments of the foregoing sections would lose much if not all of their force if it could be shown that this third logical status was a third truth value. By the criteria developed in earlier chapters,

this has indeed been shown to be the case in respect of the Standard theory. By contrast, the Revised definition was formulated in response to the need for a definition conforming to the criteria for a two valued logic with gaps. In such terms, the arguments of the foregoing sections hold with respect to the presuppositional logic induced by the Revised theory, not that induced by the Standard theory.

As indicated earlier, however, there is an uncertainty in connection with the Revised theory. We have seen that by the Standard theory, (20) is unequivocally a truth conditional implication of the first clause of (1) - henceforth (1-i); ~~truth-conditionally implies (20);~~ this is directly contradicted in the second clause (1-ii); hence the truth-conditional contradiction.

(1) (i) The king of France isn't bald - (ii) there's no king of France.

(20) There is a king of France.

(21) The king of France is bald.

But what can we say of (1) when, as under the Revised theory, the relation between (1-i) and (20) is characterised as one of GENERALISED presupposition? This is the uncertainty I wish to present here. Its resolution would involve a resolution to the questions posed in Chapter VII:3. I did not pretend to answer them there and I shall not pretend to here, but I will present the facts as they appear to me. What is at issue is whether the generalisation that metalinguistic negation stems from the need to resolve a contradiction can be maintained under the Revised theory in quite the same strong unequivocal (truth-conditional) form it is under the Standard theory.

We have seen that this relation of generalised presupposition

that holds between (1-i) and (20) is precipitated by the truth-conditional (presuppositional) semantics of (21) and the fact that, construed literally, (1-i) is the truth-conditional truth-functional negation of (21). Given that (21) base-presupposes/weakly entails (20), (20) is by the definition of base-presupposition, excluded from the scope of negation in (1-i); thereby the relation between (1-i) and (20) could be described as a truth-conditional default implication (or: a truth-conditionally induced default implication). In this particular case, indeed, the falsity of (20) actually does have the logical consequence that (1-i) lacks a truth value. These observations seem to suggest that (1-i) does truth-conditionally imply (20). In which case, (1) as a whole is a truth-conditional contradiction.* For in respect of the actual logical status of (1) as it stands, the Revised and the Standard theories make the same prediction.

Against this, it will be recalled that generalised presuppositions of negative sentences are demonstrably NOT simple straightforward logical implications, for by the definition of generalised presupposition a negative sentence may be true in situations in which its generalised presuppositions are false, more specifically in situations where the independent strong entailments

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* It is a contradiction in the exclusive sense outlined in Chapter IV. To see this, let me represent it as the conjunction in (i)

(i) ~(kfb) & ~(Exkfx)

The first conjunct is gapped, the second conjunct true. The whole conjunct thus inherits the gap. Indeed it is the truth of the second conjunct that induces lack of truth value in the first and hence the conjunction as a whole. The first conjunct could only have a truth value were the second conjunct false. But were the second conjunct false, the conjunction as a whole would be false. Summarising these observations: (i) CAN only be either false or lacking in truth-value. It thus satisfies the (exclusive) definition of contradiction in a gapped logic, given in Ch. III: a contradiction is a sentence which, if it has a truth value, always has the value false.

of the positive are false. In the case of (1-i) particularly, this would be the (counterfactual) situation in which no-one is bald, for I take it that, independently of its failed presupposition, (21) strongly entails that someone is bald (i.e. that baldness is instantiated). On the basis of just this latter observation, ignoring how this default implication arises and intermeshes with the truth-conditional semantics of (~)S and focussing exclusively on the non-logical character of the implication, we might as indicated earlier consider regarding it as akin to a conventional implicature: a semantic but non truth-conditional implication - as with the case of manage in (17). In that case we would have to abandon the strong version of the generalisation concerning the role of truth-conditional contradiction in the motivation of metalinguistic negation.

With respect to (1) in particular, neither alternative seems to do justice to the facts of the matter. As a generalised presupposition of (1-i), (20) is indeed a semantic non truth conditional implication of (1-i), but it is not entirely non-truthconditional, as witnessed by the fact that both (21) and (1-i) are indeed neither true nor false by virtue of the falsity of (20). Furthermore, it is because both (21) and (1-i) do both lack a truth value on the revised theory, that the special, non truth-functional, metalinguistic use of negation is still predicted to provide the only means available of rejecting (21) to a speaker who knows that (20) is false.

But consider now (36)

(36) Jones spent the day at the local swimming pool.

and suppose that Jones spent the day in bed and, independently, that there is no local swimming pool. Then by the Revised theory, (36)

is in fact false , while still carrying the (base and) generalised presupposition that there is a local swimming pool. Since it is literally false, it is truth-functionally deniable under the revised theory, as in (37):

(37) Jones didn't spend the day at the local swimming pool.

Although it is deniable, it is not deniable on the grounds of its failure of presupposition; those logical implications of (36) which are its base-presuppositions are excluded from the negation in (37) (this is why (37) shares the generalised presuppositions of (36)). (36) is truth functionally deniable only on the basis of the falsity of its strong entailments, eg only on the grounds that Jones did not spend the day at a swimming pool, local or not. What then of (38)?

(38) Jones did'nt spend the day at the local swimming pool - there is no swimming pool locally!

Is this use of negation as clear a case as (1) of the metalinguistic use of negation? The revised theory suggests not, predicting weaker, less unequivocal, motivation for the pragmatic metalinguistic re-analysis of the use of negation in this case. The distinction can be seen as being borne out by the fact that in (38), but not (1), the possibility exists for DIMINISHING the motivation for a pragmatic metalinguistic re-analysis of the first clause by a means already mentioned in Ch IX, the use of <u>incidentally</u> and similar adverbials. Compare (39) and (40):

(39) Jones didn't spend the day at the local swimming pool - and incidentally, there IS no local swimming pool!

(40) !!The king of France isn't bald - and incidentally there no king of France!

The possibility of using such adverbials in (39), but not (40), indicates, rather clearly in my view, that in the first clause the

speaker is rejecting the proposition that Jones spent the day at the local swimming pool on perfectly standard truth-functional grounds independent of its failure of generalised presupposition, considerably reducing, if not entirely disposing of, any motivation for a pragmatic re-analysis of the first clause as a special non-truthfunctional use of negation. Under the revised theory, this possibility of recuperating the negation in (1) as ordinary an truth-functional denial is simply not available, and thereby the theory predicts a stronger, more inescapable, motivation for the pragmatic re-analysis given above. For what it is worth, these predictions are consonant with my intuitions but, as we might expect from the more subtle predictions of the revised theory, they involve rather fine judgements and I do not guarantee in this case that my intuitions are theory-independent.

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