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EXISTENTIAL IMPORT*

Abstract. Notwithstanding various attempts at explaining existential import in non-presuppositional terms, it is argued that the Strawsonian view remains the best: existential import is a matter of presupposition. More accurately: it is argued that Strawson's *mature* view, as expressed in his paper of 1964, provides the best account of speakers' intuitions. This entails that the semantic approach to presupposition, associated with Strawson's earlier work, goes by the board. It also entails that the presuppositional requirements of an expression are never purely existential in nature. A strong quantifier does not merely presuppose that its domain is non-empty; rather, the purpose of its presupposition is to *recover* a suitable domain from the context.

1. INTRODUCTION

Supposing that there are no Swiss bullfighters, what are we to make of statements like the following?

(1) a. Every Swiss matador adores Dolores del Rio.
b. Most Swiss matadors adore Dolores del Rio.

(2) a. Some Swiss matadors adore Dolores del Rio.
b. No Swiss matador adores Dolores del Rio.

Lappin and Reinhart (1988) observe that informants respond to these sentences in different ways: whereas to most native speakers sentences like (1a, b) just sound odd, many speakers unhesitatingly judge (2a) false and (2b) true. There are speakers for whom the latter sentences are infelicitous, as well, but this is not the majority view. More generally, the pattern suggested by Lappin and Reinhart's observations is that, for most informants, sentences with strong quantifiers are infelicitous if the quantifier's domain is known to be empty, whilst sentences with weak quantifiers are either judged infelicitous or assigned a classical truth value.

This is the basic pattern. But the empirical facts do not rigidly conform to this pattern. First, and most importantly, if an existential *there*-sentence contains a weak quantifier whose domain is empty, the sentence will seldom be found infelicitous; it will just be true or false, depending on the facts of the matter:

(3) a. There are no Swiss matadors in the drawing room.
b. There are some Swiss matadors in the drawing room.

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The incidence of informants rejecting these sentences as infelicitous is considerably lower than in the case of (2a,b). Knowing that there are no Swiss matadors, people don't insist on checking the drawing room before concluding that (3a) is true and (3b) false. Of course, strong quantifier phrases are barred from occurring in *there*-sentences by definition, so this effect is restricted to weak quantifiers.[1]

If a *there*-sentence biases the hearer towards one interpretation of a weak quantifier phrase, he can be led in the opposite direction, too, for example by stressing the quantifier. If (3b) is pronounced with an accent on 'some', there will be more people inclined to say that the sentence is infelicitous.[2]

The foregoing observations can be summarised as follows:

	Strong Q	Weak Q
Neutral context	Infelicitous	True/false or infelicitous
There-sentence	Ungrammatical	True/false
Focus on Q	Infelicitous	Infelicitous

There is a small but obstinate group of persons who insist that, for them, a sentence like (1a) is vacuously true. If there are no Swiss matadors, they argue, then of course all Swiss matadors adore Dolores del Rio. One may wonder to what extent such judgments are based on undiluted linguistic intuition, as opposed to considerations of (non-natural) logic, and it is tempting to simply ignore this minority of smart alecks (as Abusch and Rooth, to appear, call them). However, even if we don't share their intuitions, we have to admit, I believe, that the smart alecks' position is not an unreasonable one, and deserves some sort of explanation. Interestingly, it seems that smart alecks are considerably more confident that (1a) is true than they are about the truth value of (1b) or (4), for example:

(4) Both Swiss matadors adore Dolores del Rio.

To the extent that informants report robust intuitions about vacuous truths at all, it appears that they are confined to universal statements.

2. EXISTENTIAL IMPORT WITHOUT PRESUPPOSITION

According to Lappin and Reinhart, empty-domain effects are determined by the way speakers assess a quantified sentence for truth or falsity, and speakers'

[1] Although existential *there*-sentences will have an important supporting role in this paper, I will not propose an analysis of this construction. I will presuppose that the correct analysis is pragmatic rather than semantic in nature, but whether it is in terms of presupposition, novelty, topicality, or something else, is immaterial (see Hannay 1985 and Comorovski 1995 for discussion of some of the issues). It is relevant to my purposes that *there*-sentences tend not to admit presuppositional noun phrases, but I don't claim that this is invariably the case, let alone by definition.

[2] To say that a mere accent that will do the trick is probably a simplification. See Jäger (1999) for discussion.

assessment strategies are contingent upon the type of quantifier involved. Lappin and Reinhart assume standard definitions of the meanings of quantifiers, along the following lines:

(5) a. 'All A are B' is true iff $\|A\| \subseteq \|B\|$
b. 'Most A are B' is true iff $\text{card}(\|A\| \cap \|B\|) > \text{card}(\|A\| - \|B\|)$
c. 'Some A are B' is true iff $\|A\| \cap \|B\| \neq \varnothing$
d. 'No A are B' is true iff $\|A\| \cap \|B\| = \varnothing$

An important difference between strong quantifiers, like 'all' and 'most', and weak quantifiers, like 'some' and 'no', is that the latter are intersective while the former are not. This means that, for any weak quantifier Q, we can determine the truth value of 'Q A are B' by inspecting only $\|A\| \cap \|B\|$; the extension of A need not be examined. For strong quantifiers this procedure is not valid. It is this difference, Lappin and Reinhart maintain, that explains the observations given above. For example, the truth or falsity of (2a) may be determined simply by checking the cardinality of the intersection between the set of Swiss matadors and the set of individuals that adore Dolores del Rio. If the intersection is empty, the sentence is false; if not, it is true. Either way, we do not have to inspect the set of all Swiss matadors in order to obtain the sentence's truth value. If, on the other hand, we have to evaluate a sentence of the form 'All A are B', we have to examine all A's until we either find one that is a non-B or run out of A's. Thus, in order to determine if (1a) is true, we must start with the set of Swiss matadors, and as this set is empty the assessment procedure is frustrated from the outset, which explains why this sentence is felt to be infelicitous:

> Whenever the assessment of a sentence must start with a scan of an N′ set of a given noun phrase, assessment is stalled if this set is empty. In this case, the sentence is marked as anomalous, empirically irrelevant, or undefined, regardless of its semantic interpretation. (Lappin and Reinhart 1988: 1031)

Of course, we can use the same style of assessment strategy with weak quantifiers as we have to with universally quantified sentences, checking the entire quantificational domain, but for weak quantifiers this is merely an option; it isn't forced upon us by the semantics of the quantifier. Thus, it is explained, according to Lappin and Reinhart, why an empty domain renders a sentence with a strong (non-intersective) quantifier infelicitous, while sentences with weak (intersective) quantifiers are judged infelicitous by some speakers and true/false by others.

There are a number of problems with this proposal.[3] First, and most importantly, it is essential to Lappin and Reinhart's account that the assessment procedure grinds to a halt if it hits upon the empty set. It is not clear why this should be so, but it is clear that it isn't always true. For example, if Q is a weak quantifier and the intersection of its argument extensions is empty, we don't want to have to conclude

[3] For more discussion of Lappin and Reinhart's analysis, see Lasersohn (1993) and Abusch and Rooth (to appear).

that the assessment procedure is aborted. For, as we have seen, 'Some A are B' will normally be judged false, and 'No A are B' true, if $\|A\| \cap \|B\| = \varnothing$. Apparently, it is only if the first argument of a strong quantifier is found to be empty that assessment becomes frustrated, and this doesn't follow in any way from the semantics in (5).

Another problem is brought up by Lappin and Reinhart themselves, who note that the definition in (5a) does not really require that verifying 'All A are B' start with the set of A's. Alternatively, its truth value may be determined by inspecting $\|A\| - \|B\|$. Given the definition in (5a), if this set is empty, the sentence is true, and otherwise it is false. So there is really no need to investigate $\|A\|$. Lappin and Reinhart seek to counter this objection by claiming that the alternative procedure would be computationally inefficient, and therefore dispreferred, but it is not clear why that should be so. In particular, it is not clear why scanning $\|A\| - \|B\|$ is less efficient than scanning $\|A\| \cap \|B\|$, which is standard practice with weak quantifiers, according to Lappin and Reinhart.

These problems are related in the following way. Although Lappin and Reinhart's main idea, that truth-value judgments are correlated with the pragmatics of verification, is intuitively plausible, it seems that the classical generalised-quantifier semantics does not sufficiently constrain the range of potential verification strategies. In particular, this semantics doesn't require that verification of 'Q A are B' start with $\|A\|$ only if Q is strong, not if it is weak. An obvious suggestion at this point is that this asymmetry is due to the fact that strong but not weak quantifiers presuppose their domains. However, Lappin and Reinhart consider and reject this possibility (for reasons that will be discussed below), so this option is not open to them. But then it is unclear how the asymmetry between weak and strong quantifiers can be accounted for.

Abusch and Rooth (to appear) present a proposal for explaining empty-domain effects that resembles Lappin and Reinhart's in certain respects. In particular, they too pursue the idea that the semantics of weak quantifiers makes it possible to factor out information about the quantifier's domain, which is not possible (or, at least, much harder) with strong quantifiers. But here I will focus on another aspect of Abusch and Rooth's analysis. If we accept a semantics along the lines of (5), many quantifiers have existential import by virtue of their truth-conditional meaning alone. For example, 'Q A are B' entails that $\|A\| \neq \varnothing$ if Q = 'most', 'some', 'at least *n*', and so on. But the universal quantifiers, 'no', and other downward entailing quantifiers do not require that their domains be non-empty. In these cases, Abusch and Rooth maintain, we observe a weak form of existential import, which is the result of a quantity implicature. For example, an utterance of (6a) or (6b) implicates (7):

(6) a. Every Swiss matador adores Dolores del Rio.
b. No Swiss matador adores Dolores del Rio.

(7) The speaker considers it possible that there are Swiss matadors.

(8) There are no Swiss matadors.

This implicature comes about as follows. If 'every' and 'no' mean what they mean according to (5a) and (5d), respectively, then (8) expresses a stronger proposition than either (6a) or (6b). Or, in other words, (8) unilaterally entails (6a) and (6b). Therefore, adopting the familiar Gricean style of reasoning, the hearer is entitled in both cases to infer that the speaker does not believe the stronger proposition, which is to say that (7) is implicated by (6a) as well as by (6b).

On Abusch and Rooth's account, a sentence of the form 'Q Swiss matador(s) adore(s) Dolores del Rio' has either strong or weak existential import. For certain instances of Q, the sentence entails that there are Swiss matadors (strong existential import), while for others there is an implicature to the effect that the speaker considers it possible that there are Swiss matadors (weak existential import).[4]

This analysis creates a somewhat peculiar dichotomy which is orthogonal to more established distinctions, especially that between weak and strong quantifiers. According to Abusch and Rooth, all quantifiers have some sort of existential import. If a quantifier is strong it may have weak or strong existential import ('all' vs. 'most'), and the same goes for weak quantifiers: 'some' and 'three' have strong existential import, while 'no' and 'less than three' have weak existential import. This is somewhat disturbing because the main distinction we are after should align with the division into weak and strong quantifiers. Furthermore, the notion that (7) should be a conversational implicature licensed by (6a) and (6b) is not tenable. For it is fairly obvious that this inference doesn't behave as an ordinary implicature.

(9) a. Many of the orphans are sick – in fact, all of them are.
b. Many of the orphans are sick, and maybe all of them are.

Intuitively, 'Many A are B' is weaker than 'All A are B', and (9a, b) illustrate two of the ways in which this intuition manifests itself. (10a, b) attempt to emulate these examples, and it is obvious that both attempts fail.

(10) a. ?All Swiss matadors are sick – in fact, there are no Swiss matadors.
b. ?All Swiss matadors are sick, and maybe there are no Swiss matadors.

These observations suggest that, contrary to what Abusch and Rooth presuppose, 'There are no A' is not felt to be stronger than 'All A are B'. Whatever existential import may be, it is not an implicature.

[4]The terminological distinction between weak and strong existential import is my invention, not Abusch and Rooth's.

3. INTRODUCING PRESUPPOSITIONS

One important feature the theories of Abusch and Rooth and Lappin and Reinhart have in common is that they treat quantifiers as non-presuppositional expressions. But ever since Strawson (1950) it is widely held that some quantifiers presuppose that their domains are non-empty, and it is fairly obvious, if only in outline, how this might explain speakers' intuitions about quantifiers with empty domains. Suppose that a strong quantifier always triggers the presupposition that its domain is non-empty, whereas a weak quantifier is ambivalent in this regard: sometimes it comes with a presupposition, and sometimes it doesn't. Suppose furthermore that presupposition failure causes a sentence to be infelicitous. Then we predict exactly the main pattern observed by Lappin and Reinhart: whenever $\|A\| = \varnothing$, 'Q A are B' should be odd if Q is a strong quantifier, whereas if Q is weak the sentence should be either odd or have a standard truth value, depending on whether Q is construed as presupposing its domain or not.

In my view, this story is correct as far as it goes, though it is as yet incomplete because the distinction between presupposing and non-presupposing quantifiers does not suffice to explain all the facts under discussion. In the remainder of this paper I will take the presuppositional account a bit further, and defend it against various kinds of criticism.

The notion that a universal statement like (11a) does not entail the corresponding existential statement in (11b) is one of the key stones of modern logic:

(11) a. All gryphons have floppy ears.
b. Some gryphons have floppy ears.

Before the advent of predicate logic it was standardly assumed that the universal quantifier has existential import: someone who utters (11a) therewith implies that gryphons exist, and therefore that (11b) is true, as well. It testifies to the intuitive appeal of this doctrine that it went virtually unchallenged for over 2000 years. And when logicians finally decided that it should be given up, it was by no means to universal acclaim. In a sense, the torch of traditional syllogistic logic was taken over, at about the same time when modern logic was beginning to take hold, by psychologists interested in the kinematics of human reasoning. Syllogistic reasoning has been one of the mainstays in this field, and here, too, there has never been any doubt about the existential import of the universal quantifiers. To give just one example, in an experiment conducted by Rips (1994), 65% of the participants endorsed the following argument, which is valid only on the assumption that 'every' has existential import:

(12) Every A is B
Every B is C

Some A is C

In a similar vein, though I don't know of any experimental evidence one way or the other, I conjecture that most people would be very strongly tempted to say that the following inference is valid, which requires again that the traditional view is right:

(13) Everybody is sick.
If anybody is sick, the meeting will have to be cancelled.
The meeting will have to be cancelled.

In the philosophy of language, the traditional view was reaffirmed but at the same time modified by Strawson (1950, 1952) and Hart (1951), who were the first to argue that existential import is a matter of presupposition. As the latter put it,

> ... any one who in normal discourse asserts such as sentence as, e.g., 'All taxi drivers are well-read', and appears to be making on this occasion a serious assertion will be properly taken to believe the corresponding existential sentence to be true. For otherwise he could have no reasons for asserting it ... If we want a word we can say that the [universal] form in the absence of a special indication 'presupposes' or 'strongly suggests' the truth of the existential form. But these psychological terms ill convey the conventional character of the connection. (Hart 1951: 207)

(Note, incidentally, that the concept of presupposition seems to initially have had a psychological flavour that is often lacking in the more recent literature on the subject.) Strawson and Hart's claim that existential import is to be explained by way of presupposition is motivated by the intuition that a universal sentence whose subject term is empty is infelicitous rather than simply true or false – a description that fits at least some speakers' intuitions quite well, as we have seen.

The presuppositional view on existential import is buttressed by the fact that the inference under discussion exhibits the projection behaviour that is the hallmark of true presuppositions:

(14) a. It would be fun if all Swiss matadors would enter the tournament.
b. Do you think all Swiss matadors will enter the tournament?
c. See to it that all Swiss matadors enter the tournament, will you?

Each of these sentences suggests quite strongly that (according to the speaker) there are Swiss matadors, which is precisely what one should expect if 'all' triggered the presupposition that its domain is non-empty. Of course, if this is a presupposition it should be 'blocked' under certain circumstances, and it is:

(15) a. If it is after 10 PM, then Fred's wife is in bed.
b. If Fred has a wife, then Fred's wife is in bed.

(16) a. If it is after 10 PM, then all Swiss matadors are in bed.
b. If there are Swiss matadors, then all Swiss matadors are in bed.

The pair of sentences in (15) serves as a reminder of the familiar fact that a presupposition triggered in the consequent of a conditional (in this case, by the definite

noun phrase 'Fred's wife') will be 'inherited' by the main sentence unless it is blocked in the antecedent; which is exactly what we see in (16), too. These observations confirm the Strawson–Hart diagnosis, and at the same time present a formidable challenge to anyone denying that existential import is of a presuppositional nature.

In an attempt to capture the presuppositional effect of strong quantification, de Jong and Verkuyl (1985) propose to replace the standard meaning clauses in (17) with partial definitions along the lines of (18):[5]

(17) a. 'All A are B' is true if $\|A\| \subseteq \|B\|$, and false otherwise.
b. 'Most A are B' is true if $\text{card}(\|A\| \cap \|B\|) > \text{card}(\|A\| - \|B\|)$, and false otherwise.

(18) 'All A are B' and 'Most A are B' are defined iff $\|A\| \neq \varnothing$.
a. If defined, 'All A are B' is true if $\|A\| \subseteq \|B\|$, and false otherwise.
b. If defined, 'Most A are B' is true if $\text{card}(\|A\| \cap \|B\|) > \text{card}(\|A\| - \|B\|)$, and false otherwise.

Lappin and Reinhart (1988) object against this analysis on several counts. First, they point out that de Jong and Verkuyl's semantic treatment of presupposition implies that many sentences that are tautologous or contradictory on a classical construal of the quantifiers turn out to be neither on a partial interpretation. Referring to the examples in (19)–(20), Lappin and Reinhart state that '[t]his result does not seem well motivated, and it would be very difficult to support on the basis of linguistic intuitions' (p. 1026):

(19) a. Every unicorn is a unicorn.
b. Every unicorn is not a unicorn.

(20) a. Most American Kings are American Kings.
b. Most American Kings are not American Kings.

Lappin and Reinhart maintain that, though speakers' intuitions about these sentences may be somewhat confused, there is nonetheless a strong tendency to endorse the (a)-sentences and reject the (b)-sentences, and therefore it would be wrong to predict, as the presuppositional analysis seems to do, that all of these sentences lack truth values.

This argument is flawed in two ways. First, I am not convinced that Lappin and Reinhart's observations are correct. Personally, I find the sentences in (20) especially dubious, and Lappin and Reinhart's claim that (19a) is plainly true is

[5] De Jong and Verkuyl don't discuss 'most' but it is clear that this is what their definition would have been.

up against the entire body of medieval schoolmen, who took it to be obvious that sentences like this are false (Kneale and Kneale 1962). Secondly, if Lappin and Reinhart's intuitions about (19)–(20) contradict the presuppositional analysis of quantification, they contradict the classical analysis, as well. For according to the latter (19a) and (19b) are both true, while (19a) and (19b) are both false. This holds if the negations in the (19b) and (20b) take narrow scope. With wide scope for the negation, the sentences come out false and true, respectively, which still doesn't square with Lappin and Reinhart's intuitions. Hence, examples like these do not show that the classical analysis of strong quantifiers is superior to the partial analysis endorsed by de Jong and Verkuyl.

Lappin and Reinhart's second objection concerns weak quantifiers. There are speakers for whom any form of quantification over the empty set results in infelicity. This would seem to imply that, for such speakers, weak quantifiers are presuppositional, too. But if we extend de Jong and Verkuyl's analysis to 'some', 'no', 'at least seventeen', and so on, weak quantifiers lose the properties that are essential to the class: they cease to be intersective and symmetrical. So, treating all quantifiers as presuppositional in effect means giving up on the weak/strong distinction.

It is rather unlikely, of course, that some speakers consistently interpret weak quantifiers as presuppositional, and therefore miss out on the weak/strong distinction, while others consistently interpret them as non-presuppositional. Fortunately, however, there is no need for the presuppositionalist to assume anything like this. Weak quantifiers generally allow of presupposing and non-presupposing readings, the choice between which is usually determined by contextual factors. Hence, the strong/weak distinction applies primarily to occurrences of quantifying expressions; it is just that some quantifiers always select a strong reading while others can have weak as well as strong construals. If this much is right, it is only to be expected that some speakers may have a stronger preference for presuppositional construals than others. (Compare the case of lexical ambiguity: the fact that a word has two senses does not entail that both senses will be equally salient to all speakers.) I fail to see, therefore, that the variation in speakers' judgments poses a problem for the presuppositional account of existential import.

Another objection raised by Lappin and Reinhart, and the last on my list, concerns sentences like:

(21) Every unicorn has exactly one horn.

Lappin and Reinhart maintain, and I concur, that there is a perfectly good sense in which this sentence can be said to be true, even if there are no unicorns in this world: the sentence can be 'interpreted as an implication which is true in every world in which unicorns exist. Whether the subject N′ set is empty or not in the actual world plays no role in determining the truth value of sentences like [(21)]' (p. 1026).

The notion that universal statements like (21) should be exempted from presuppositional treatment originates in Strawson's work, too (Strawson 1952), and has

been elaborated at length by Horn (1997), who uses the distinction between what he calls 'empirical' and 'lawlike' universals to argue that existential import is not a semantic but a pragmatic phenomenon.

Following Strawson, Lappin and Reinhart and Horn assume, as a matter of course, that lawlike universal statements lack existential import. This seems plausible at first, but on reflection it is not so plausible at all. Suppose we accept Lappin and Reinhart's suggestion that (21) is read as an implication, and flesh it out as follows: 'For any possible world *w*, if unicorns exist in *w*, then every unicorn in *w* has exactly one horn'. This is fully compatible with a presuppositional analysis, unless it is stipulated that the existence presupposition triggered by a strong quantifier is indexical in the sense that it must be true in the actual world – which would be an odd thing to stipulate. Moreover, there are other ways of analysing lawlike readings. For example, one might consider the possibility that, on the intended reading, the quantifier in (21) ranges over possible individuals, which is to say that its domain is never empty, be it in this world or anywhere else.

The view on lawlike universals propagated by Lappin and Reinhart and Horn (among many others) rests on the tacit assumption that existential presuppositions must be satisfied in the actual world by ordinary individuals. I see no reason to accept that this is true. For one thing, given that quantifying expressions can range over a wide variety of entitities – from groups and events to properties and kinds – why should their presuppositions be confined to concrete individuals? For another, the assumption that existence presuppositions must be satisfied in the actual world is at odds with the prevailing opinion that presuppositions in general need not be true here and now. For example, all major theories of presupposition agree that the presupposition triggered by 'the king of France' in (22) need only be satisfied by worlds in which France is a monarchy:

(22) Had France been a monarchy, the king of France would have been bald.

There is an existence presupposition here, and it is satisfied, though not in the actual world.

The upshot of the foregoing remarks is that, pace Lappin and Reinhart and Horn, lawlike universal statements do not force us to abandon a presuppositional analysis of quantification along the lines indicated by de Jong and Verkuyl.

4. BEYOND SEMANTIC PRESUPPOSITION

Although I have tried to dispel a number of objections against de Jong and Verkuyl's presuppositional analysis of quantification, I don't believe that their proposal can be upheld as it stands. My argument is based on a point made by Strawson 40 years ago, namely, that presupposition failure does not invariably result in infelicity. In his 1964 paper, Strawson partly disavows the position he had defended 14 years earlier in 'On referring', having come to doubt in the meantime that presupposition failure entails lack of truth value:

> The sense in which the existence of something answering to a definite description used for the purpose of identifying reference, and its distinguishability by an audience from anything else, is presupposed and not asserted in an utterance containing such an expression, so used, stands absolutely firm, whether or not one opts for the view that radical failure of the presupposition would deprive the statement of a truth-value. (Strawson 1964: 85)

Taking a closer look at how speakers actually assess a sentence, Strawson now observes that presupposition failure may but need not cause a sentence to be infelicitous. Two of his examples are the following:

(23) a. Jones spent the morning at the local swimming pool.
b. The Exhibition was visited yesterday by the king of France.

If there is no swimming pool locally, it is 'natural enough', according to Strawson, to say that (23a) is false, and since the king of France doesn't exist, the same applies to (23b). And if it is false that Jones spent the morning at the local swimming pool, it must be true that he did not spent the morning there; the same, mutatis mutandis, for (23b). So these are cases in which presupposition failure does not prevent us from saying that a sentence is true or false. But Strawson has not changed his mind about Russell's example:

> Confronted with the classical example, 'The king of France is bald', we may well feel it natural to say, straight off, that the question whether the statement is true or false doesn't arise because there is no king of France. (Strawson 1964: 90)

Strawson goes on to observe, however, that speakers who subscribe to this judgment may want to reconsider their verdict if the context is set up the right way. For instance, if Russell's sentence is used to answer the question, 'What examples, if any, are there of famous contemporary figures who are bald?', we may be more inclined to say that the answer is simply false.

Strawson's explanation for these facts is given in terms of what a sentence, as uttered on a certain occasion, is about – its topic. (Strawson's notion of topic is rather sophisticated, and not to be conflated with any of the coarser concepts for which the name has since been appropriated.) The idea is straightforward and, I think, intuitively sound. The most likely purpose of a sentence like (23a) is to describe what Jones has been doing in the morning, rather than, say, who the local swimming pool was visited by. That is, in the absence of further information about the context in which this sentence is uttered, its topic will be Jones's exploits. Similarly, a sentence like (23b) will normally be used to convey information about the Exhibition. If so, although the sentence purports to refer to the king of France, it is not about him; the king of France is not the topic of discourse, nor part of it. Strawson's suggestion is that this circumstance influences the way presupposition failure is dealt with. Not to put too fine a point on it, presupposition failure results in infelicity only if it affects the topic of a sentence; otherwise the sentence will be judged true or false, as appropriate. If (23a) addresses the question where Jones spent the morning, we know that the answer cannot be true, since ex hypothesi

there is no local swimming pool. Whereas if Jones didn't exist, there wouldn't be anything for the sentence to be about, and it would be infelicitous as a consequence.

One of the features that make this an appealing analysis is that it accounts for the context dependence of speakers' intuitions. As Strawson notes, Russell's famous example will by default be construed as being about the king of France, whence a strong tendency to judge the sentence infelicitous.

(24) The king of France is bald.

With his usual linguistic acumen, Strawson notes that there are two conspiring reasons why the king of France should be the default topic of (24). On the one hand, 'it often is the case that the topic of a statement is, or includes, something referred to by a referring expression'. (p. 95) On the other hand, 'it often is the case that the placing of an expression at the beginning of a sentence, in the position of grammatical subject, serves, as it were, to announce the statement's topic'. (ibid.) But the king of France doesn't have to be topic. If the discourse is about royal baldness in general, for example, the grammatical subject of (24) is used to say something about that topic, and Strawson's account predicts that the sentence is more likely to be judged false, which seems correct.

Another observation that neatly falls into place is that word order may have an effect on speakers' intuitions about presupposition failure. As Strawson observes, if we compare (23b) with (25), where the defective description is in subject position,

(25) The king of France visited the Exhibition yesterday.

we would be 'a shade more sqeamish' to say that the sentence is simply false (p. 91). This is precisely what one should expect if speakers' intuitions were topic-dependent.

Strawson's explanation has been lambasted by Neale (1990):

> But surely the truth value of what one says depends upon whether the world is as one has said it is; to let the decision as to whether one has said something false or said nothing at all depend upon such things as what is the primary or overriding focus of the discourse at any given moment – to the extent that such a notion is even theoretically manageable – is to give up this idea. Indeed, it is to give up doing serious semantical work altogether, or else to give up the idea that presupposition is a semantical phenomenon … all sorts of factors may conspire [to] deter the native speaker from *saying* that a given utterance is true or false, but that is hardly enough to show that the utterance lacks a truth-value. (Neale 1990: 28)

This passage mainly demonstrates Neale's failure to appreciate what Strawson was up to in his 1964 paper, and if I have cited it nonetheless it is because I believe the failure is instructive. Contrary to what Neale implies, it was not part of Strawson's brief to defend this or that theory of presupposition. Instead, his aim was to explain what prompts a native speaker to say that a given utterance is true, false, or odd. Unlike Neale, apparently, Strawson was concerned with speakers' intuitions rather than the question whether and when presupposition failure results in a truth-value

gap. Still, Neale is right in claiming that the views expressed by Strawson in 1964 sit uneasily with the notion that presupposition is a semantic phenomenon. For it is implausible, though not perhaps outright impossible, to maintain that presupposition has truth-conditional effects that are modulated by such pragmatic factors as what is the topic of discourse. In this point Neale is right, but then it was evident for quite independent reasons already that presupposition is not a semantical phenomenon.

Whereas Neale attacks Strawson on a priori grounds, others have criticised him for empirical reasons. Lasersohn (1993) discusses sentences like the following:

(26) The king of France
a. is sitting in that chair.
b. is knocking on the door.
c. ate that sandwich.

Lasersohn maintains that Strawson's analysis fails to explain why these sentences would normally be judged false:

> One need only look at the chair or sandwich, or listen at the door, to determine that [(26a–c)] are false ... it makes little difference whether we regard these statements as 'about' the king of France on the one hand, or the chair, door and sandwich on the other. (Lasersohn 1993: 114)

I don't think this is correct, but to explain why we have to develop Strawson's analysis a bit further. In Strawson's view, reference failure will prompt a speaker to judge a sentence infelicitous provided the defective term is interpreted as topical. It should be clear, however, that such judgments are always made in an 'empty' context; that is to say, a context in which the referent is not given (for if it were given there wouldn't be an issue). The problem, then, is to interpret sentences like (24)–(26) 'out of the blue', which involves determining what, according to the speaker, the sentence is about. According to Strawson, as we have seen, this process is influenced by linguistic factors: definites and subjects are more likely to be topics than indefinites and non-subjects, respectively. But it is also plausible, I believe, that salient objects in the context are more topic-worthy than others. If this is so, then the definite subject in (26a–c) will have to compete for topic status with the chair, the door, and the sandwich. More accurately, since topics aren't objects but questions under discussion, there is competition with the question who is sitting in that chair, who is at the door, and who ate that sandwich.

This line of reasoning explains why the definite subject may have to relinquish its topic status to the predicate, but it will not suffice to explain Lasersohn's observation that (26a–c) will nearly always be judged false. What is needed in order to round out our Strawsonian analysis is an appeal to the principle of charity. People interpret each other's vocalisations charitably. A corollary of this principle, in the case at hand, is that people prefer to avoid interpreting an utterance such that it

becomes infelicitous. Making an assertion that turns out to be false is less embarrassing than saying something inappropriate or odd (unless the falsehood was deliberate, of course). Therefore, whenever different parts of a sentence compete for topic status, as in (26a–c), the sentence will be construed, if at all possible, in such a way that it becomes felicitous.

To return to the main topic of this paper, it shouldn't be too difficult to see how the Strawsonian view on definite descriptions can be extended to quantifying expressions. For it is natural to assume that different (interpretations of) quantifiers may constrain the choice of topic in different ways. In particular, I want to suggest that strong, i.e. presupposition-inducing, quantifiers are more likely to be interpreted as topical, especially when they occur in subject position. If this is so, the following pair of sentences should mirror the contrast between (23b) and (25), which according to my intuitions they do:

(27) a. The Exhibition was visited yesterday by all Swiss matadors.
b. All Swiss matadors visited the Exhibition yesterday.

Moreover, if the Strawsonian analysis is correct, there is no reason why it should be restricted to strong (construals of) quantifiers.

(28) a. Five Swiss matadors hijacked a sightseeing bus today.
b. Today a sightseeing bus was hijacked by five Swiss matadors.

Here a weak quantifier occurs as subject and prepositional object, respectively, and it seems to me that the former example is more likely to be judged infelicitous than the latter, though the contrast is admittedly subtle. Another observation we can account for now is that an existential *there*-sentence is seldom infelicitous, even if it contains a quantifier whose domain is empty. For example, most informants would say that the following are simply true and false, respectively:

(29) a. There are no Swiss matadors in the drawing room.
b. There are some Swiss matadors in the drawing room.

There are two factors that explain this observation. On the one hand, existential *there*-sentences don't admit presuppositional noun phrases, as the following well-known paradigm illustrates:

		no lawyers	
		some lawyers	
		three lawyers	
(30)	There is/are	*most lawyers	on the beach.
		*all lawyers	
		*my lawyer	
		*Heidegger	

On the other hand, the quantified noun phrases in (29) are difficult to interpret as topics in Strawson's sense. Weak noun phrases are less suitable as topics than strong noun phrases, because they aren't presuppositional, and weak noun phrases in existential sentences are especially unlikely to be topical, and therefore the sentences in (29) are proportionally more likely to be judged true or false.

5. BEYOND EXISTENTIAL PRESUPPOSITION

It was noted already that a Strawsonian account of empty-domain effects is difficult to reconcile with a semantic theory of presupposition, simply because Strawson's analysis is pragmatic through and through. But there is a further reason as well. To explain this, let us have another look at the definitions proposed by de Jong and Verkuyl:

(31) 'All A are B' and 'Most A are B' are defined iff $\|A\| \neq \varnothing$.

a. If defined, 'All A are B' is true if $\|A\| \subseteq \|B\|$, and false otherwise.
b. If defined, 'Most A are B' is true if $\text{card}(\|A\| \cap \|B\|) > \text{card}(\|A\| - \|B\|)$, and false otherwise.

In these clauses presuppositions are treated as definedness conditions: in order for 'All A are B' or 'Most A are B' to have a truth value it must be true that $\|A\| \neq \varnothing$. But this is not how Strawson thinks of presuppositions. For Strawson, the problem with (24), for example, is not just that France doesn't have a king. The real problem is that there is nothing for the predicate to be about; the statement cannot be anchored in the context:[6]

> I have explained identifying reference – or the central case of identifying reference – as essentially involving a presumption, on the speaker's part, of the possession by the audience of identifying knowledge of a particular item. (p. 79)

It is Strawson's notion of reference failure, not the semantic notion of presuppositions as definedness conditions, that needs to be extended to quantifying expressions. It so happens that there is a theory of presupposition that already does this. It is called the 'binding theory' of presupposition (van der Sandt, 1992, Geurts, 1999).

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[6] Although in this passage Strawson speaks of 'identifying reference' rather than presupposition, he makes it clear that for him the two expressions are equivalent:

> All this can be put, perfectly naturally, in other ways. Thus, that there exists a particular item to which the name or description is applicable ... is no part of what the speaker *asserts* in an utterance in which the name or description is used to perform the function of identifying reference; it is, rather, a *presupposition* of his asserting what he asserts. (p. 80, emphasis in the original)

The binding theory is based upon the observation that there are close parallels between the interpretation of anaphora on the one hand and presupposition projection on the other. In fact, anaphora in the usual sense of the word is viewed as a special case of presupposition, and theories of dynamic interpretation that were originally conceived for dealing with anaphoric pronouns can easily be extended so as to account for presuppositions in general. A few examples will serve to clarify what this means. Consider how a sentence like (32a) might be represented in Discourse Representation Theory (Kamp 1981):

(32) a. If Barney has an elk, then Barney's elk is in hiding.
b. [: [x: x is B's elk] ⇒ [z: z is B's elk, z is in hiding]]

(32b) is intended as a schematic but nonetheless complete representation of (32a), except for one thing: the presupposition induced by the definite noun phrase, whose counterpart in (32b) is underlined, hasn't been processed yet.[7] Now suppose that we attempt to treat this presupposition as one would normally treat an anaphor in DRT. This implies that the presuppositional discourse marker z is on the lookout for a suitable antecedent, which in this case isn't hard to find: x is accessible from the sub-DRS in which z is sitting, and its description matches that of z. So the presupposition can climb up to meet its antecedent, as a result of which we obtain (33a), or equivalently, (33b):

(33) a. [: [x, z: x is B's elk, z is B's elk, z = x] ⇒ [: z is in hiding]]
b. [: [z: z is B's elk] ⇒ [: z is in hiding]]

Thus, the presupposition that Barney has an elk is bound in the antecedent of the conditional, just as an ordinary anaphor might have been bound, and consequently the resulting DRS doesn't entail that Barney has an elk. It is in this sense that sentence (32a) doesn't 'inherit' the presupposition that Barney has an elk.

In this example, a presupposition is bound just like an anaphor, but presuppositions cannot always be so bound (recall that the binding theory views anaphora as a species of presupposition), and in general if a presupposition cannot find a suitable antecedent, it will be accommodated. This is what happens in examples like the following:

(34) a. If Barney's elk is in hiding, then his reindeer is too.
b. If Barney is in hiding, then his elk is too.

Here our initial semantic representations are (35a) and (35b), respectively:

(35) a. [: [z: z is B's elk, z is in hiding] ⇒ [: B's reindeer is in hiding]]
b. [: [: B is in hiding] ⇒ [z: z is B's elk, z is in hiding]]

[7] Here and in the following only one or two presuppositions at a time will be selected to illustrate the theory. In (32b) the presupposition associated with the proper name 'Barney' is ignored, and the same fate awaits 'Barney's reindeer', to be introduced below.

As in these two cases the presupposition cannot be bound, it will have to be accommodated, which means that it is to be inserted in some DRS accessible to it. So, in (35a) the presupposition could in principle be accommodated in the principal DRS or in the antecedent of the conditional, while in (35b) it might also be accommodated in the consequent. However, it is assumed that, ceteris paribus, global accommodation is preferred to local accommodation, and therefore the interpretations of (34a) and (34b) that we end up with are (36a) and (36b), respectively:

(36) a. [z: z is B's elk, [: z is in hiding] ⇒ [: B's reindeer is in hiding]]
b. [z: z is B's elk, [: B is in hiding] ⇒ [: z is in hiding]]

These DRSs both entail that Barney has an elk, and thus the theory accounts for the intuition that both (34a) and (34b) carry this presupposition.

To see how this account can be extended to quantified expressions and their presuppositions, consider how the discourse in (37) might be handled:[8]

(37) Fred owns three sheep. He had two sheep vaccinated in the spring.

(38) a. [x, Y: Fred(x), sheep(Y), card(Y) = 3, x owns Y]
b. [v, W, Z: sheep(W), card(Z) = 2, Z ≤ W, v had Z vaccinated]
c. [x, Y, Z: Fred(x), sheep(Y), card(Y) = 3, x owns Y,
card(Z) = 2, Z ≤ Y, x had Z vaccinated]

(38a) represents the interpretation of the first sentence in (37), where 'three sheep' is construed as a weak quantifier (capital reference markers represent groups or sets of individuals). The preliminary representation of the second sentence in (37) is shown in (38b). Here the noun phrase 'two sheep' is interpreted as strong, and therefore equivalent to 'two of the sheep'. This means that, on top of the standard weak construal, there is a presupposition to the effect that some set of sheep is contextually given. This presupposition is bound to the set of sheep introduced in the first sentence, while the presupposition triggered by the pronoun is bound to Fred. The resulting interpretation is (38c).

This brief exposition of the binding theory will suffice to explain the main differences between it and the semantic view espoused by de Jong and Verkuyl. In accordance with Strawson's ideas, the binding theory views a presupposition as a discourse entity, which is presumed to be present in the context. The semantic view, by contrast, construes presuppositional givenness in terms of definedness. If a presupposition isn't satisfied it is not because the context fails to provide an object that was expected to be there, but rather because it doesn't contain the required information. In a sense, therefore, an expression like 'Barney's elk' triggers different presuppositions according to the two theories: whereas for the binding theory it is that an elk must be given that is owned by Barney, for the semantic theory it must

[8] The following is intended merely as an informal illustration of the general ideas under discussion, not as a full-blown treatment of quantification.

be true that Barney isn't elkless. The same holds for the presuppositional reading of 'two sheep' in (37). According to the binding theory the presupposition boils down to a requirement that a set of sheep is to be picked up from the context; for the semantic theory the requirement is just that there are sheep.

According to the view I am defending, the term 'existential import' is really a misnomer, or at the very least, highly misleading. A strong quantifier doesn't merely require that its domain be non-empty. Rather, what its presupposition does, or is supposed to do, is recover a suitable referent from the context. And if this function fails because it is known that a suitable referent doesn't exist, then Strawson's story applies.

There remains one problem, which is the existence of smart alecks maintaining that an empty domain renders a universally quantified sentence vacuously true. As I hinted at the outset, I don't believe this objection should be given too much weight, but I nonetheless want to show how we can get around it, because I believe this problem is related to the issue discussed in the last few paragraphs. As I said there, it is a mistake, strictly speaking, to say that a quantifier triggers the presupposition that its domain is non-empty. What we should say instead is that the quantifier signals, among other things, that the speaker presents its domain as given. Taken by itself this does not imply that the quantifier's domain cannot be empty. True, most quantifiers happen to require that their domains be non-empty. It follows from the meaning of 'both', for example, that its domain consists of two individuals. But it could be argued that this does not hold for the universal quantifiers, and that in these cases the non-emptiness requirement has an external source, such as an across-the-board default presumption that the empty set is an uninteresting, and therefore less likely, topic of conversation. It is this intuition, presumably, that motivates Lappin and Reinhart's account.

If this is correct, we can justify the smart aleck's position, up to a point at least, as follows. His judgment that universally quantified sentences can be vacuously true is consistent not only with the meaning of 'every' et al., but also with their presuppositional requirements. What the smart aleck does is just ignore the default presumption that speakers aren't expected to dwell on the properties of the empty set. The smart aleck may be uncooperative, but he is at least truthful. He would go wrong if he extended his claim to sentences with 'both' or 'most', for example, because these quantifiers entail that their domains aren't empty. But, as we have seen, the smart aleck diverges from more cooperative speakers only in his judgments on universal sentences.

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