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The But Not *All*: A Partitive Account of Plural Definite Descriptions

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Abstract: A number of authors in favor of a unitary account of singular descriptions have alleged that the unitary account can be extrapolated to account for plural definite descriptions. In this paper I take a closer look at this suggestion. I argue that while the unitary account is clearly onto something right, it is in the end empirically inadequate. At the end of the paper I offer a new partitive account of plural definite descriptions that avoids the problems with both the unitary account and standard Russellian analyses.

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Russell's theory of descriptions is still something of a paradigm of analytic philosophy. But the number of authors who find it inadequate is on the rise. Some authors question the claim that descriptions are quantifiers (see e.g. Kamp, 1981; Heim, 1982; Diesing, 1992; Fara, 2001, 2006). Others have doubts about their claimed truth-conditions (see e.g. Szabo, 2000, 2003, 2005, 2006; Ludlow and Segal, 2004. This idea has also been explored by e.g. Kempson, 1975; Zvolensky, 1997; Breheny, 1999). Here I shall be concerned only with the latter sort of criticism. The main point of concern has been the general claim that singular definite descriptions carry a semantic implication of uniqueness.[1] Examples of the following sort make this general claim look highly suspect (Szabo, 2003, p. 281):

(1) A man entered the room with five others. The man took off his hat and handed it to one of the others

The first sentence entails that six men entered the room. So, if 'the man' in the second sentence entails that that there is exactly one man, as Russell claimed, then (1) is a straightforward contradiction. Of course, there is the familiar issue of incompleteness. An utterance of a sentences containing a description like 'the table' or 'the cat' can under normal circumstances be true only if the domain of

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[1] Of course, definite mass descriptions do not carry semantic implications of uniqueness. However, I shall set aside the problem of how to analyze definite mass descriptions. For a theory of definite mass descriptions, see Sharvy, 1980 and Brogaard, Forthcoming b.

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quantification is restricted, or if the utterance is elliptical for what the speaker could have made explicit but didn't.[2] However, the problem exposed by (1) goes beyond the issue of incompleteness. Even if the domain of quantification could somehow shift between sentences, it is not clear that the speaker would be able to associate a domain of quantification with 'the man' which contains just one of the relevant men (Szabo, 2003, p. 280). For if the speaker deduces (1) from general clues, he may not know enough to distinguish one of the six men from the others. Nonetheless, he could supposedly be saying something true in uttering (1).

Examples like (1) have convinced several critics that the semantic import of singular definite descriptions is just existential quantification (e.g. Szabo, 2000, Ludlow and Segal, 2004). The uniqueness implications of singular definite descriptions, it is held, can be accounted for pragmatically, given certain assumptions about the conventional meaning of the definite article.[3]

The worries about Russell's theory of singular definite descriptions carry over to plural definite descriptions. Russell himself did not actually take a stand with respect to plural definite descriptions. But several authors have offered so-called Russellian analyses of plural definites. For the most part these analyses agree that sentences with plural definite descriptions carry a universality implication. While this seems plausible in the case of sentences like,

(2) The students passed the exam,

it is not difficult to come up with examples where the universality condition seems violated. Consider, for instance:

(3) After the lecture, the students asked questions.

(3), it seems, could be true even if only a handful of students asked questions.

Examples like these have been used to sketch an analysis of plural definite descriptions that is akin in spirit to the unitary analysis of singular descriptions (Szabo, 2000, note 2; Ludlow and Segal, 2004, note 17). On this analysis, plural definite descriptions have the semantic import of existential quantifiers of the form 'some Fs'.

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[2] For discussion of the second strategy, see e.g. Neale, 1990a, pp. 95ff. For a defense of quantifier domain restriction, see e.g. Stanley and Szabo, 2000. Kent Bach (1994) has a different reply: a speaker can use a sentence of the form 'The F is G' to make a true assertion even when it is commonly known that there is more than one F, but the assertion is not literal.

[3] According to Ludlow and Segal, 'the noun phrase with the determiner 'the' carries the conventional implication that the object under discussion is *given* in the conversational context, [whereas] noun phrases fronted by the determiner 'a' are conventionally implicated to involve *new* information' (2004, p. 424). Szabo argues that the uniqueness implication is a conversational implicature.

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In this paper I want to take a closer look at this latter suggestion. I will argue that while the unitary analysis is clearly onto something right, it is in the end empirically inadequate. At the end of the paper I offer what I believe to be a correct analysis of plural definite descriptions. I will have virtually nothing to say about singular definite descriptions.[4] The structure of the paper will be as follows. In section 1, I give a brief account of what seems to be the most viable Russellian analysis of plural definite descriptions. In section 2 I review some of the evidence against this account. In section 3 I show why the unitary analysis of descriptions cannot be extended to account for plural definites. In section 4 I offer a new partitive account of plural definite descriptions that avoids the problems with the unitary analyses as well as standard Russellian accounts. I conclude by considering some additional merits of the proposed account of plural definites.

1. Russellian Analyses of Plural Definite Descriptions

On Russell's theory of (singular) definite descriptions, a sentence of the form 'the F is G' is true if and only if there is exactly one F, and every F is G. Since Russell's theory implies that 'the F is G' is true iff there is exactly one F (in the domain), it does not cover plural definite descriptions. For sentences containing plural definite descriptions ought to be able to be true under circumstances where there is more than one F (in the domain).[5] Take, for instance:

(2) The students passed the exam.

(2) is true if there are exactly ten students, and every one of them passed the exam. However, as Stephen Neale (1990b, p. 121) has argued,[6] Russell's theory of singular definite descriptions can be extended in the following way. While a sentence containing a singular definite description, the F is G, is true iff every F is G, and there is exactly one F, a sentence containing a plural definite description, the Fs are G, is true iff every F is G, and there is more than one F.[7] In other words, the difference between singular and plural descriptions is simply 'one of cardinality'. On this account, (2) comes out true under the envisaged circumstances.

The problem with this account of plural definite descriptions is that it has to be restricted to descriptions that occur with distributive predicates (Neale, 1990b,

[4] For some worries about the unitary account of singular descriptions, see e.g. Abbott (2003, Forthcoming), and Horn (Forthcoming).

[5] In fact, it is arguable that they ought to be false if there is exactly one F in the domain.

[6] Neale's idea is based on remarks made by Russell and Whitehead in *Principia Mathematica*, chap 20, and Russell in *Introduction to Mathematical Philosophy*, Chap 17. Thanks to Stephen Neale here.

[7] Strictly speaking, the occurrence of G in the analysandum is a plural predicate, and the occurrence of G in the analysans is a singular form of that predicate. But I shall ignore that complication at this point.

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p. 122, note 22). But descriptions sometimes occur with non-distributive predicates, as in:

(4) The students surrounded the White House.

(4) may be true. But it is false that every student surrounded the White House. What is required, then, is an analysis that can account for descriptions that occur with non-distributive predicates.

It is not difficult to improve and upgrade the preliminary Russellian analysis of plural definites. As George Boolos (1984) has argued, to adequately represent the use of plural forms in English, we need a language with plural quantifiers. But, as Boolos puts it, 'we need not construe second-order quantifiers as ranging over anything other than the objects over which our first-order order quantifiers range, and, in the absence of other reasons for thinking so, we need not think that there are collections of (say) Cheerios, in addition to the Cheerios' (1984, p. 449).[8] Instead, we can treat plural quantification as a special way of quantifying over multiple entities.

To adequately represent plurals we add to the language of first-order logic plural variables X_i and the two-place predicate 'is one of'. '$\exists X$' reads 'there are some things such that$_X$', plural predicates of the form 'FX' read 'they$_X$ are F', and 'Xx' reads 'it$_x$ is one of them$_X$'. Following Boolos (1984, p. 443), we suppose that plural existential quantification does not incur a commitment to more than one entity of the kind in question. There is then no need for numberless descriptions, as plural definite descriptions are themselves semantically numberless.

We define 'they$_X$ are some of them$_Y$' as follows:

$$X \subseteq Y =_{\text{def}} \forall x(Xx \rightarrow Yx)$$

They$_X$ are some of them$_Y$ if and only if everything that$_x$ is one of them$_X$ is one of them$_Y$. Sentences of the form G[the X: FX] can then be assigned truth-conditions in accordance with the following rule:[9]

(Plural) $$G[\text{the } X\text{: } FX] =_{\text{def}} \exists X(FX \;\&\; \forall Y(FY \rightarrow Y \subseteq X) \;\&\; GX)$$

The definiens reads: there are some things$_X$ such that they$_X$ are F, and any things$_Y$ that are F are such that they$_Y$ are some of them$_X$, and they$_X$ are G. The use of (Plural) in representing sentences containing plural definite descriptions is

[8] Similar approaches have developed by e.g. Prior and Fine (1977, pp. 146-7), Higginbotham and Schein (1989, pp. 161-75), Schein (1993), Cartwright (1996), Yi (2002), Rayo (2002), McKay (Forthcoming), and Brogaard (Forthcoming b).

[9] This is a variation on Richard Sharvy's (1980) Russellian account of plural definite descriptions. See 'A More General Theory of Definite Descriptions'. See also Cartwright, 1996 and Brogaard, Forthcoming b.

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straightforward. With plural variables we can represent the logical form of (2) and (4) as follows:

(2a) [the X: students X](X passed the exam);
(4a) [the X: students X](X surrounded the White House).

(2a) is true if and only if there are some things$_X$ such that 'students' is true of them$_X$, and any things$_Y$ of which 'students' is true are such that they$_Y$ are some of them$_X$ and 'passed the exam' is true of them$_X$'. (4a) is true if and only if there are some things$_X$ such that 'students' is true of them$_X$, and any things$_Y$ of which 'students' is true are such that they$_Y$ are some of them$_X$ and 'surrounded the White House' is true of them$_X$.

When the predicate G is distributive, and A is a singular form of the plural predicate G, we tentatively take [the X: FX](GX) to have the following underlying form:

$$\text{(Dist)} \quad [\text{the X: FX}]([\forall x\text{: Xx}](\text{Ax}))$$

(Dist) read: the Fs$_X$ are such that everything that$_x$ is one of them$_X$ is A. Since 'passed the exam' is distributive, (2) cashes out to 'the students are such that every one of them passed the exam', which is as it should be. [10]

2. Evidence Against the Russellian Analysis

The above account of plural definite descriptions is poles apart from Russell's original account of singular definite descriptions. However, just like Neale's account of plural definite descriptions, it takes sentences of the form 'The Fs are G', where G is distributive, to imply that there is a singular predicate A which every one of the Fs satisfies. For that reason I shall refer to it as 'Russellian'.

Unfortunately, there are some recalcitrant counterexamples to the Russellian analysis of definite descriptions. Consider the following two sentences:

(5) I cleaned the dishes.
(6) I cleaned all the dishes.

The first could be true, even if I left the oak meal dish to soak in the sink.[11] But the second is false. The effect of 'all' is to bar exceptions, or to 'reinforce the

[10] Suppose, however, that students can pass exams in groups. Then we wouldn't infer 'each of the students passed the exam' from 'the students passed the exam'. Thanks to Ishani Maitra and Zoltan Szabo for noting this. I deal with this problem below.

[11] Thanks to Larry Horn for convincing me that there is a difference in truth-conditions between these two sentences.

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involvement' of each individual (Dowty, 1987; Brisson, 2003; Drewery, 2005).[12] Hence, unlike (6), (5) allows exceptions. Yet the Russellian analysis wrongly predicts that (5) is false under the envisaged circumstances.

The issue here does not turn on the incompleteness of the description in (5) and (6). For consider:

(7) Yesterday the US senators attended a hearing on the severity of the budget situation

(8) Yesterday all the US senators attended a hearing on the severity of the budget situation

Unlike (8), (7) could be true under circumstances in which one-third of the senators were absent. But if one-third of the senators were absent, then the Russellian analysis wrongly predicts that (7) is false.

The claim that plural definite descriptions tolerate exceptions gains further support from discourse fragments like the following.

(9) In the first meeting of its kind, the nation's senators grappled Tuesday with questions on how to collect taxes in an age of the Internet and globalization. But since less than two-thirds were present, no important decisions were made.

(9) does not sound contradictory. The second sentence seems to be a natural continuation of the first. Yet the second sentence entails that some of the US senators were absent. So, if the first sentence entails that that all the senators grappled with questions on how to collect taxes, then (9) is a straightforward contradiction.

Consider another example, a dialog between colleagues A and B:

A: After the lecture, the students asked questions.
B: Really? All the students?
A: Of course not.
B: So why did you say that?
A: I didn't. I said 'the students', not '*all* the students'.

B's replies fly wide off the mark, because A's first statement clearly does not entail that all the students asked questions.

[12] That 'all' contributes a 'no exceptions' (or reinforcement) clause is even more obvious in cases of floated 'all' (e.g. 'the students all/both went to a bar' or 'Al, Bob, Carl and Dan are all musicians'). See Drewery, 2005.

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The above considerations carry over to plural definite descriptions that occur with non-distributive predicates. Consider, for instance:

(10) The US senators met yesterday to discuss the effects of the budget situation.

(11) All the US senators met yesterday to discuss the effects of the budget situation.

(10) could be true, it seems, if one-third of the US senators were absent.[13] But to the extent that the 'all' in (11) reinforces the involvement of each US senator, (11) would be false under these circumstances. Though it is not entirely clear what a Russellian would say here, the example indicates that we cannot take 'The Fs are G', where G is non-distributive, to imply that all the Fs collectively satisfy G. For (10) and (11) are not truth-conditionally equivalent.

Examples like these strongly suggest that a Russellian analysis of plural definite descriptions cannot be right. As Zoltan Szabo points out, it seems that 'the Fs are G' is 'semantically closer to 'Some (contextually relevant) Fs are G' (2000, note 2, cf. p. 30). The Russellian analysis is thus maintained only on the shakiest of grounds.

3. The Unitary Analysis of Plural Definite Descriptions

It is not difficult to see how to extrapolate the unitary analysis to account for plural definite descriptions: plural definite descriptions simply have the semantic import of existential quantifiers of the form 'some Fs'. Any felt universality implications can then, in principle, be accounted for pragmatically, given certain assumptions about the conventional meaning of the definite article. In want of a better name let us call this position the 'unitary analysis of plural definite descriptions'.[14]

At first glance, the unitary analysis seems to fare better than the Russellian analysis, because it can account for cases where there is no felt implication of universality. Unfortunately, this position raises problems of its own.

For starters, notice that the unitary analysis questions only the standard truth-conditions assigned to sentences containing plural definite descriptions, not their logical form. In other words, the unitary analysis merely states that 'the Fs' and

[13] As Zoltan Szabo points out, the inference from 'the Ns met' to 'Most of the Ns met' is invalid. If the bylaws of some corporation specify that the presence of a relatively small percentage of shareholders is sufficient for a quorum, then the shareholders met even though it is not the case that most were present.

[14] This position is sketched, though not seriously defended, by the advocates of the unitary analysis of singular descriptions. See Szabo (2000, note 2, p. 30) and Ludlow and Segal (2004, note 17).

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'some Fs' have the same semantic import, not that they behave in the same way logically. This being so, (2) and (12) are truth-conditionally equivalent,

(2) The students passed the exam.
(12) Some students passed the exam,

but they differ in logical form:

(2a) [the X: students X](X passed the exam);
(12a) [some X: students X](X passed the exam).

Unfortunately, the claim that pairs of sentences like (2) and (12) have the same truth-conditions but differ in logical form spells trouble for the unitary analysis. For consider the following sentence:

(13) The students didn't ask any questions.

(13) can be read in two ways, according as 'the students' is given (a) wide or (b) narrow scope with respect to negation:

(13a) [the X: students X]¬(X asked questions);
(13b) [the X: students X](X asked questions).

On the unitary analysis, however, (13a) is true if and only if there are some students who did not ask any questions, and (13b) is true if and only if it is not the case that some students asked questions. Thus, on a wide-scope reading, (13) may be true even if most of the students asked questions. But this seems quite implausible. For (13) can only be interpreted as meaning that none of the students asked questions.

Suppose A says: 'The students asked questions', and B says: 'No they didn't'. Surely, A and B disagree. Yet if unitary account is right, and B's remark is assigned its natural wide-scope reading, then A's remark is true if some students asked questions, and B's remark is true if some students didn't ask any questions. A and B's disagreement is thus akin in spirit to a quarrel of the following sort,

A: I am hungry;
B: No, I am not hungry;

which is to say, it's no disagreement at all.

This objection could, of course, be avoided by insisting that our intuitions track the narrow-scope reading, not the wide-scope reading. However, I think it would be difficult to make a strong case for this claim. For (13), on its preferred reading, incurs a commitment to the existence of some students. Yet the narrow-scope reading incurs no such commitment.

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Another way to sidestep the objection would be to find a way of showing that that universality implication triggered by (13) is pragmatic. Peter Ludlow and Peter Segal (2004, p. 427) account for the uniqueness-involving uses of definite descriptions as Gricean conversational implicatures. Suppose S comes upon Smith's badly mutilated corpse and says 'The murderer of Smith is insane'. According to Ludlow and Segal, S could not be observing Grice's conversational maxims unless he thought that there is a unique murderer of Smith. For by invoking the determiner 'the' S intends to communicate that at least one murderer is given in the conversational context. But by Grice's first maxim of quantity, which says 'Make your contribution as informative as is required', if S believed that there is more than one murderer given in the context, he ought to have used a plural definite description rather than a singular. Since S uses a singular definite description, he implicates that he has reason to believe that at most one person murdered Smith and is insane.

However, it is difficult to see how this explanation could be extended to account for the universality-involving uses of plural definite descriptions. Suppose S utters 'the students didn't ask any questions'. By invoking the determiner 'the' S intends to communicate that at least one student is given in the context. But by Grice's maxim, if S believed there is exactly one student, he ought to have used a singular definite description. Since S uses a plural definite description, he implicates that he has reason to believe at least two students didn't ask any questions, not that he has reason to believe all the students didn't ask any questions.

Zoltan Szabo provides a different explanation of how to derive the uniqueness implication pragmatically (2000, p. 41). Szabo adopts a theory originally developed by Irene Heim (1982, Chap. 3), according to which the hearer 'interprets the words of the speaker … by constructing and continuously updating a file that systematizes the information conveyed' (Szabo, 2003, p. 282). But unlike Heim, Szabo does not suggest that the theory of filing is an alternative semantic theory. Rather, the rules we take into account when we construct and update files are pragmatic. According to Szabo, what distinguishes indefinite and definite descriptions is that indefinites are associated with the Novelty rule ('For every indefinite description start a new card') and definites with the Familiarity rule ('For every definite description, if there is an appropriate old card in the file, update it; otherwise start a new card'). Given this difference in conventional meaning between indefinite and definite descriptions, the uniqueness implications associated with many uses of definite descriptions can be derived pragmatically. In addition to the Familiarity rule, the derivation makes use of a 'non-arbitrariness' constraint ('When filing an utterance, don't make arbitrary choices') and two conversational maxims ('Make only utterances you may assume can be filed in accordance with all the rules and constraints of update' and 'Without specific reason you may assume nothing about the private file-cards of your interlocutor, except that the relevant part of her mental file is true') [2000, p. 41].

The derivation goes roughly as follows (2000, p. 41): suppose A, who is engaged in a conversation with B, utters a sentence that contains the definite description

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'the F'. B can then reason as follows. If I had two private F cards with incompatible conditions, I could not have filed A's utterance without violating either Familiarity or Non-arbitrariness. So, A must assume that I don't have two private F cards. But, by the conversational maxims, A is entitled to assume that I don't have two private F cards only if he believes that there is at most one F. Hence, if A is observing the conversational maxims, he believes that there is at most one F.

Szabo's explanation might perhaps be extended to account for plural definites as follows. Suppose A, who is engaged in conversation with B, utters a sentence that contains the definite description 'the Fs'. B can then reason as follows. If I had two private Fs cards with incompatible conditions, I could not have filed A's utterance without violating either Familiarity or Non-arbitrariness. So, A must assume that I don't have two private Fs cards. But, by the conversational maxims, A is entitled to assume that I don't have two private Fs cards only if he believes that there is at most one (salient) F group. Hence, if A is observing the conversational maxims, he believes that there is at most one (salient) F group.

Szabo's theory thus seems able to account for the universality implication pragmatically. But there is a more general problem with both of these strategies. To account for cases like 'the students asked questions', which are not associated with a universality implication, the unitarians are required to treat the derivation of the universality implication as optional.[15] For example, they might say it is the lexical nature of the predicate that triggers derivation: 'passed the exam' would trigger derivation; 'asked questions' would not. However, this line of defense runs into trouble. For if 'asked questions' does not trigger derivation, then we shouldn't expect the wide-scope reading of 'the students didn't ask questions' to be associated with a universality implication. Furthermore, it is hard to see how the derivation could be optional. Suppose A says 'after the lecture, the students asked questions'. Why wouldn't B still think 'If I had two private Fs cards with incompatible conditions, I could not have filed A's utterance without violating either Familiarity or Non-arbitrariness'? Finally, if the universality implication associated with some uses of plural definite descriptions is a conversational implicature, as Szabo argues, then it ought to be cancelable (Grice, 1989, p. 39). But the universality implication associated with 'the students didn't ask any questions' isn't cancelable, for the sentence isn't assertable in any situation in which some students asked questions.

A further problem for the unitary account turns on the analysis of partitives. Consider:

(14) The students asked questions.
(15) Every one of the students asked questions.

[15] Otherwise 'the students asked questions' will cause trouble for their account. Or to put the point differently: one or the other of 'the students asked questions' and 'the students didn't ask questions' cause trouble for their account. Thanks to Zoltan Szabo here.

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Pairs of sentences like (14) and (15) form part of the evidence mounted against the Russellian. For if the Russellian analysis of plural definite descriptions is right, then (14) and (15) ought to have the same truth-conditions. Yet it seems that (14) could be true if some students did not ask any questions; (15), on the other hand, requires that every one of the students asked questions.

But pairs of sentences like (14) and (15) spell trouble for the unitary analysis as well. To see this, let us take a closer look at the analysis of partitives. It may be suggested that a partitive like 'all the students' has the following underlying phrase structure: '[$_{NP}$[$_{Det}$[$_{Preart}$ all] [$_{Art}$ the]][$_{Nom}$ students]]', where 'all' is a pre-article (Cartwright, 1996, p. 151). Given this analysis, 'all the students' is structurally just like 'all students' except that the latter contains the simple determiner 'all' whereas the former contains the complex determiner 'all the'.

However, as Ray Jackendoff (1977, pp. 107, 118-9) has argued,[16] this analysis does not correctly handle the use of pronouns and so-called group words, as in 'every one of the students' and 'every bunch of the rocks'. Jackendoff suggests that the underlying phrase structure of a partitive construction like 'every one of the students' is '[$_{NP}$[$_{Det}$ every] [$_{Nom}$ [$_{PRO}$ one] of [$_{NP}$ the students]]]'. By Quantifier Raising, the definite description takes scope over the determiner phrase 'every one'. Hence, (15), upon analysis, cashes out to 'the students are such that every one of them asked questions'.[17]

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[16] Cf. Cartwright, 1996, pp. 151-2 and Abbott, 1996.

[17] John Hawthorne raised the following objection to me in conversation. If partitives function as plural definite descriptions at the level of logical form, and plural definite descriptions are quantifiers, why don't we get the following constructions: 'all of every child', 'all of most children', 'all of some children' and so on. I replied that for a determiner phrase to occur in a partitive environment it must admit of a group reading. 'Most children' and 'every child' do not admit of group readings. See Ladusaw, 1982. However, this cannot be the whole story, as 'some children' does admit of a group reading (witness 'some children carried the piano upstairs'). Barbara Abbotthas subsequently suggested to me that these examples are bad for pragmatic reasons. The most natural interpretations would be mass interpretations, taking the embedded NP distributively. But we don't like to consider children in this light (i.e. as their stuff). Note that the parallel examples in (1) are o.k.:

(1) a. All of most asparagus plants is inedible.
b. They ate all of some cakes that were sitting in the window.
c. All of every board was rotten.

As mentioned, 'some N' can have a group interpretation, but it's more difficult to get a partitive with an embedded indefinite and a group interpretation. See Abbott (1996). With a little work passable examples can be constructed, however. (2) does not sound too awful.

(2) They invited all of some children who came to the door to come in for a glass of milk.

As Zoltan Szabo pointed out in his commentary, not all plural definite descriptions admit of a group reading, for instance, 'the two students' and 'both students' do not. So we do not get: 'each of both students passed the exam'. Szabo suggests that this is because 'both students' is already covertly partitive.

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Since partitives like 'every one of the students' function semantically as plural definite descriptions, partitives must be given the same treatment as non-partitive plural definite descriptions. On the unitary account, plural definite descriptions have the semantic import of existential quantifiers. Since partitives function as plural definite descriptions, they too will receive existential truth-conditions. This being so, the truth conditions for (15) may be given as follows.

(15a) $\exists X(\text{students } X \ \& \ \forall x(Xx \rightarrow x \text{ asked a question}))$.

There are some students_X and every one of them_X asked a question. But (15a) is equivalent to 'some students asked questions', which are the truth-conditions the unitary analysis will assign to (14). The unitary analysis thus wrongly predicts that (14) and (15) should have the same truth-conditions.

Perhaps the defenders of the unitary analysis will be happy to bite the bullet and say that (14) and (15) have the same truth-conditions. But then they cannot at the same time pass judgment on the Russellian for assigning the same truth-conditions to (14) and (15). Besides, there is plenty of reason to doubt that (14) and (15) have the same truth-conditions. For a readiness to assign existential truth-conditions to (15) should be accompanied by a readiness to make the corresponding move with respect to the following sentence:

(16) With no exception, every single one of the American Presidents has been white.

(16) contains in its phrase structure the plural definite 'the American Presidents'. Hence, on a unitary analysis of plural definites, (16) cashes out to 'With no exception, there are some American Presidents, and every single one of them has been White'. But the latter is true just in case, with no exception, some American Presidents have been white. Hence, (16) is true in circumstances where most American Presidents have been black, which seems quite implausible.

The defenders of the unitary account might, of course, attempt to derive the universality implication pragmatically. I have already expressed my doubts about the general applicability of this strategy. Moreover, since the derivation of the universality implication is optional, we should expect to find cases of partitives formed with 'all' and 'most' that have existential force. But partitives formed with 'all' and 'most' never have existential force. 'All/most of the presidents have been white' cannot be interpreted as meaning that some presidents are such that all/most of them have been white. For the latter, but not the former, is assertable if exactly two presidents were white.

An alternative reply would be to deny that partitive constructions function semantically as plural definite descriptions at the level of logical form. But I think that there are several good reasons not to take this route. First, when a partitive nominal is modified by a relative clause, the relative clause can be understood as

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semantically modifying the definite description. 'Some of the children in the party, who were playing with a balloon, started fighting', for example, can be understood as saying that all the children were playing with a balloon but only some of them started fighting (for discussion, see Girbau, 2003). This is also the reading available for 'the children, who were playing with a balloon, are such that some of them started fighting'. The availability of this reading in both cases suggests that 'the children' functions semantically as a definite description even when it occurs in a partitive structure.

Second, it is well-known that definite descriptions differ from other quantified noun phrases with strong determiners by occurring regularly in predicative position (Fara, 2001, 2006; cf. Brogaard,Forthcoming a).[18] 'Bill, Amy and Sue are the singers', for example, sounds perfectly fine, but 'Bill, Amy and Sue are most singers' is strained. Like definite descriptions, partitive noun phrases occur regularly in predicative position, witness 'Bill, Amy and Sue are most of the singers'. The fact that partitive noun phrases, like definite descriptions but unlike other quantified noun phrases, occur predicatively suggests that partitives function as definite descriptions at the level of logical form.

Third, regardless of one's preferred analysis of partitives, it is arguable that the semantic import of definite descriptions ought to be the same regardless of whether they occur in isolation or are embedded in a partitive structure. Otherwise, we would either violate compositionality or be required to posit an unwelcome ambiguity in the definite article. For these reasons I think a rejection of the hypothesis that partitives like 'all the children' function as definite descriptions at the level of logical form would be unmotivated.

4. Plural Definite Descriptions as Partitives

The unitary analysis and the Russellian account both have problems. Instead of trying to decide which of them has the fewest, I suggest that we look at the matter differently. Consider again:

(14) The students asked questions
(15) Every one of the students asked questions

If the above considerations are right, then the logical form of (14) and (15) may be represented as follows:

(14a) [the X: students X](X asked questions).
(15a) [the X: students X]([every x: Xx](x asked questions)).

[18] For simplicity's sake, I shall assume without argument that definite descriptions are quantified noun phrases that undergo a type shift when they occur predicatively.

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What are the truth-conditions for these structures? Well, barring issues about incompleteness, it seems relatively harmless to assign to them truth-conditions in accordance with the following schema, repeated from above.

$$\text{(Plural)} \quad G[\text{the}X{:}FX] =_{\text{def}} \exists X(FX \;\&\; \forall Y(\, FY \rightarrow Y \subseteq X) \;\&\; GX)$$

For (Plural) does not specify how the predicate distributes. According to (Plural), (14a) is true just in case there are some things$_X$ such that 'students' is true of them$_X$, and any things$_Y$ of which 'students' is true are such that they$_Y$ are some of them$_X$ and 'asked questions' is true of them$_X$. Likewise (15a) is true just in case there are some things$_X$ such that 'students' is true of them$_X$, and any things$_Y$ of which 'students' is true are such that they$_Y$ are some of them$_X$ and 'every one of them$_X$ asked questions' is true of them$_X$. Thus, for (14) to be true, the Xs must satisfy the plural predicate 'λX(X asked questions)'.[19] For (15) to be true, on the other hand, the Xs must satisfy the plural predicate 'λX(every one of them$_X$ asked questions X)'. But (Plural) does not specify what it takes for the Xs to satisfy these predicates.

When I outlined the so-called Russellian analysis of plural definite descriptions above, however, I mentioned that for distributive Gs we could tentatively take [the X: FX](GX) to have the following underlying form:

$$\text{(Dist)} \quad [\text{the } X{:}\ FX]([\forall x{:}\ Xx](Ax)),$$

where A is a singular form of the plural predicate G.

But this is a mistake. Whether there is a singular form of the plural predicate G that is satisfied by every one of the Fs cannot be determined by investigating the syntax of the sentence in question. Compare 'the first battalion was wiped out' with 'the first battalion handles ammunition' (Carlson, 1977, pp. 61ff). Intuitively, the former would be true if and only if every member of the battalion was wiped out. By contrast, the latter could be true even if a minority of the members of the battalion handle ammunition. But how did we reach this conclusion? Well, not by examining the syntax of the sentences in question. For the only relevant grammatical difference between the two is that the latter, but not the former, is in the present tense (Carlson, 1977, pp. 64ff). Rather, as Greg Carlson (1977, pp. 64ff) has famously argued,[20] it seems that we made the inference on the basis of knowledge of the 'lexical nature' of the predicates. As he puts it,

> We cannot simply look at the sentence before us and note (for instance) that it is in the simple present tense, and on that basis assign some quantifier which

[19] The lambda formula reads: X are some things$_X$ such that they$_X$ asked questions.

[20] The idea of a two-level semantics goes back to Davidson (1967) and has more recently been defended by Koslicki (1999, p. 461). For expository simplicity I shall assume that the subsequent level of analysis is a level of assertoric content. For discussion see Stanley, 2002 and Soames,Forthcoming. But I have no principled reason against treating it as purely pragmatic. Thanks to Zoltan Szabo here.

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> will determine the truth-value of the whole sentence. Since the lexical nature of the predicate is so crucial in determining the quantification it appears to rob the quantifier itself of any GENERAL role that it might play in the semantics of sentences with similar syntactic structure (1977, p. 64).

Carlson concludes that we must deny that there is, at the level of logical form, either a quantifier associated with the determiner phrase or with the predicate of the sentence.

Carlson's point generalizes to the present case. We cannot by examining the syntax of the sentence in question determine whether there is a singular form of the plural predicate G which is satisfied by every one of the Fs. To apply Carlson's view, it seems that we must know the lexical nature of the plural predicate in order to determine what it takes to satisfy it. Knowledge of the lexical nature of a predicate requires, as Carlson (1977, p. 64) points out, knowledge of the background assumptions concerning 'the situations in which we are to evaluate the sentence in which it occurs'.[21] But none of these features enters into the 'determination of form'.

The syntax of (14) will thus determine that (14) is true iff there are some things$_X$ such that 'students' is true of them$_X$, and any things$_Y$ of which 'students' is true are such that they$_Y$ are some of them$_X$ and 'asked questions' is true of them$_X$. But it does not determine how many students must ask questions in order for the Xs to satisfy the plural predicate 'λX(asked questions X)'. This is determined only at a subsequent level of analysis. For example, it is quite plausible that knowledge of the lexical nature of the predicate will determine that the Xs satisfy the plural predicate 'λX(X asked questions)' just in case some of them$_X$ satisfy the singular predicate 'λx(x asked questions)'. This being so, (14), in the envisaged circumstances, has the same semantic import as:

(17) Some of the students asked questions.

(17) is true just in case there are some things$_X$ such that 'students' is true of them$_X$, and any things$_Y$ of which 'students' is true are such that they$_Y$ are some of them$_X$ and 'some of them$_X$ asked questions' is true of them$_X$. 'The students' as it occurs in (14) thus has the semantic import of a partitive construction with existential force. The semantic difference between (14) and (17) is that in the latter case existential quantification over individual students is represented at the level of logical form, but in the former case it is derived at a subsequent level of analysis. The logical form of (14) and (17) can be given as follows:

(14a) [the X: students X](X asked questions)
(17a) [the X: students X]([some x: Xx](x asked questions))

[21] It is not crucial to my proposal that we define 'lexical knowledge' to include 'world knowledge'. Following Fodor and Lepore (1998) one could distinguish knowledge that is encoded in the lexicon from world knowledge. However, I shall ignore this complication here.

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But even though (14) and (17) differ in logical form, the present proposal predicts that they may still both be true if four of the ten students (in the domain) asked questions.

Precisely the same points can be made with respect to plural definites that occur with non-distributive predicates. Consider example (9), repeated from above:

(9) The US senators met yesterday to discuss the effects of the budget situation.

The logical form of (9) can be given as follows:

(9a) [the X: US senators X](X met yesterday to discuss the effects of the budget situation).

The syntax of (9) will determine that (9) is true iff there are some things$_X$ such that 'US senators' is true of them$_X$, and any things$_Y$ of which 'US senators' is true are such that they$_Y$ are some of them$_X$ and 'met yesterday to discuss the effects of the budget situation' is true of them$_X$. But it will not determine how many US senators must have met yesterday to discuss the effects of the budget situation in order for 'met yesterday to discuss the effects of the budget situation' to be true of the Xs. This is determined only at a subsequent level. Knowledge of the lexical nature of the predicate may determine, for example, that the Xs satisfy the plural predicate 'λX(X met yesterday to discuss the effects of the budget situation)' just in case many of them$_X$ met yesterday to discuss the effects of the budget situation. Plural definite descriptions may thus have a partitive structure at a subsequent level of analysis even though there is no overt or covert partitive structure. The partitive account can be formulated as follows.

(PA) Plural definite descriptions have a partitive structure at the surface level (like 'each of the students'), at the level of logical form (like 'both students') or at a subsequent level of analysis (like 'the students').[22]

Given this account of plural definite descriptions, do plural definite descriptions carry an implication of universality? Well, yes and no. Not every sentence of the form 'the Fs are G' implies that there is a singular form of the plural predicate which is satisfied by every one of the Fs. This is obviously not the case when G is non-distributive. But it need not be the case either when G is distributive. But the definite description itself has a semantic implication of universality. Suppose (17) adequately captures the semantic content of (14):

(14) The students asked questions
(17) Some of the students asked questions

[22] Zoltan Szabo offered this amended formulation of the partitive account in his commentary on this paper.

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Employing (Plural), (17) is true just in case there are some things$_X$ such that 'students' is true of them$_X$, and any things$_Y$ of which 'students' is true are such that they$_Y$ are some of them$_X$ and 'some of them$_X$ asked questions' is true of them$_X$. In other words, (17) is true just in case *all the students*$_X$ in the domain are such that some of them$_X$ asked questions. 'The students' thus has a semantic implication of universality, even though the sentence containing it merely implies that some of the students asked questions. Since, *ex hypothesi*, (17) adequately captures the content of (14), the definite description in (14) also has a semantic implication of universality.

5. Some Problems for the Partitive Account

I argued that the semantic import of plural definite descriptions depends, to a large extent, on the lexical nature of the predicate. For example, 'the students' is interpreted as a partitive construction with existential force when it occurs in 'the students asked questions' but as a partitive with universal force when it occurs in 'the students passed the exam'. Two difficulties arise for this approach, however.[23] One is that the semantic import of sentences with plural predicates seems to depend on the *semantic* nature of the subject term. For example, unlike 'the senators met yesterday to discuss the budget situation', 'Tom, Dick, and Harry met yesterday to discuss the budget situation' seems to entail that Tom, Dick and Harry all turned up to the meeting. Likewise, 'after the lecture, Tom, Dick, and Harry asked questions' entails that Tom, Dick and Harry all asked questions. But this seems to suggest that if 'met yesterday to discuss the budget situation' and 'asked questions' are true of them$_x$, then all of them$_x$ must turn up to the meeting or ask questions.

By way of reply, the account presented here is not at odds with the fact that sentences like 'after the lecture, Tom, Dick and Harry asked questions' are associated with a universality implication. For I only argued that plural definite descriptions are to be interpreted as partitive constructions, not that plural terms in general are to be so interpreted. For the plural predicate to trigger a partitive interpretation, it is required that the subject term in question admits of such an interpretation in the first place.

The other difficulty is that the semantic import of sentences with plural predicates seems to depend on the *lexical* nature of the subject term. For example, while 'the senators met to discuss the budget situation' may not entail that all the senators met, 'the important senators met to discuss the budget situation' does entail that all the important senators met. Likewise, 'after the lecture, the bravest students asked questions' entails that all of the bravest students asked questions. We need an explanation of this asymmetry.

[23] Thanks to an anonymous referee here.

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Here is the beginning of such an explanation. Though it is true in general that the lexical nature of the predicate determines the interpretation of plural definite descriptions, various linguistic and extra-linguistic factors can cancel out the effects of the predicate on interpretation. Here are just a few. First, the smaller the number of individuals in the domain the more likely it is that all the individuals are taken to satisfy the predicate (individually or collectively). For example, where 'after the lecture, the fifty Chinese students asked questions' is likely to be taken to imply that some of the fifty Chinese students asked questions, 'after the lecture, the three Chinese students asked questions' is more likely to be taken to imply that all three Chinese students asked questions.

Second, the specificity of the adjectives or adjective clauses that occur in the description may play a role as well. For example, 'the German students who entered the room towards the end of the lecture asked questions' is very likely to be taken to imply that all the German students who entered the room towards the end of the lecture asked questions. The more specific the adjectives the more likely it is that the speaker went to the effort of singling out the individuals in the domain because she wanted to predicate something of all of them. This might also be the reason that 'the important senators met to discuss the budget situation' is more likely to be given universal truth-conditions than is 'the senators met to discuss the budget situation'.

Third, adjunct phrases, such as 'for the most part' may affect interpretation. For example, where 'the students passed the exam' is likely to be read as meaning 'all the students passed the exam', 'for the most part, the students passed the exam' can only be read as meaning 'most of the students passed the exam'. The question as to which linguistic and extra-linguistic factors can affect the interpretation of sentences with plural definite descriptions clearly merits further investigation.

A further, but unrelated, problem for the partitive account is this. The partitive account cannot by itself handle cases analogous to (1).[24] Consider, for instance (1★):

(1★) [Two men]$_1$ entered the room with five others. [The two men]$_1$ took off their hats and gave them to the others.

(1★) seems possibly true. But on a Russellian account it would appear to be contradictory. How might a Russellian reply? For starters, note that that the occurrence of 'two men' in the first sentence can be read in two different ways. It can be read as 'exactly two men' or as 'at least two men'. The 'exactly' reading is not always required for the continuation 'the two men took off their hats …' to be appropriate. For instance, if the speaker intends 'the two men' to be equivalent to 'the (only) two men who wore hats', then the continuation 'the two men took off their hats …' may be appropriate even when 'two men' is not given the 'exactly' reading.

[24] Thanks to Zoltan Szabo for raising this objection. The example in (1★) is his.

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If seven men entered, four wore hats, the speaker believes exactly two wore hats and intends 'the two men' to be equivalent to 'the (only) two men with hats', then I think the asserted content would be false but it may well be appropriate (faultless) if the hearer also thinks two men wore hats and thinks the speaker intended 'the two men' to be equivalent to 'the (only) two men with hats'. But then it is not clear that the sequence in (1★) is a contradiction. For 'two men entered the room with five others. The (only) two men with hats took off their hats and gave them to the others' is not contradictory. Whether the sequence in (1★) is contradictory will depend on the effect of domain restriction on truth-conditions.

If, however, we consider cases where the speaker infers the two sentences in (1★) from general clues and has no explicit information concerning the men in question, then 'two men entered with five others. The two men gave the hats to the others' seems appropriate only if the speaker believes exactly two men entered the room with five others. That *is* a contradiction. But note that a similar problem arises with 'exactly' made explicit:

(1★★) [Exactly two men]$_1$ entered the room with exactly five others. [The two men]$_1$ took off their hats and gave them to the others.

(1★★) may be appropriate even if the speaker inferred it from general clues, yet the first sentence in (1★★) is a contradiction. In such cases it is reasonable to think that the speaker implicitly assumes that there is a restriction on the domain specific to the occurrence of 'men' in the first sentence and uses 'the two men' to mean 'the two men in the extension of the occurrence of 'men' in the previous sentence'. (1★★) can then be true only if the domain specific to 'men' in the first sentence is restricted to a set containing exactly two men. If there is no restriction on the domain specific to 'men', then either (1★★) is false, or the first sentence fails to express a proposition (Buchanan and Ostertag, 2005).[25]

Should this reply fail, a compromise is possible. As Zoltan Szabo suggested in his commentary on this paper, 'if [he] permits a partitive interpretation at the

[25] Buchanan and Ostertag argue that when context is incapable of providing 'a completing property' the sentence in question fails to express a proposition. They reply as follows to the example given in (1): 'if we assume, with Szabo, that the contextual information is limited to what is provided by the first sentence, it is not at all obvious that (1) can express a proposition, false or otherwise. If 'a man' is used attributively in (1), it becomes difficult to see how the utterance of (1) could be felicitous. (Note: if 'a man' is used referentially, then the speaker will mean an object-dependent proposition regardless of what the utterance expresses. To ensure that our intuitions about the utterance's felicity are not based on what the speaker means, it is important to consider only attributive cases.) This difficulty is highlighted if we consider (ii):

(ii) Six men entered the room. The man took off his hat and gave it to one of the others.

As far as we can see, if (i) expresses a contradiction, (ii) must as well; but, … (ii) isn't even intelligible' (Buchanan and Ostertag, 2005, p. 898, note 18).

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subsequent level of analysis and [I] drop maximality from [my] interpretation at the level of logical form, we can both have what we need' (2006, p. 7). If no plausible reply to (1*) can be found, I will be happy to make this move, as it allows us to retain the partitive account of plural definites.

6. Some Merits of the Partitive Account

Before concluding I would like to call attention to some merits of the proposed partitive analysis of plural definite descriptions. First, the proposed analysis seems able to account for the differences between weak and strong readings of donkey sentences. Compare:

(18) Every man who had a credit card paid the bill with it;

with:

(19) Every man who had a credit card kept it in a safe place.

It is widely agreed that (18) and (19) receive different truth-conditions. (18) is true, it seems, just in case every man who had a credit card paid the bill with a credit card he had, whereas (19) is true just in case every man who had a credit card kept every credit card he had in a safe place. (18) thus receives existential truth-conditions, whereas (19) receives universal truth-conditions. This is claimed to be a problem for a theory that takes the donkey pronoun to go proxy for a definite description.[26] If, however, donkey pronouns are interpreted as going proxy for plural definite descriptions, then this problem is solved. For (18) and (19) then have the same underlying form as the following sentences:

(20) Every man who had a credit card paid the bill with the credit cards he had.
(21) Every man who had a credit card kept the credit cards he had in a safe place.

On the present account of plural definite descriptions, an utterance of (20) does not semantically entail that every man who had a credit card paid the bill with every one of the credit cards he had. For knowledge of the background assumptions concerning the situations in which the relevant sentence is to be evaluated will in part determine the force of the quantification over individual credit cards. In the

[26] See e.g. King (2004, p. 10). King is mainly criticizing the D-type account developed by Neale in his 1990b.

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normal run of things, it takes only one credit card to pay the bill. Hence, in the normal run of things, (20) is true just in case every man who had a credit card paid the bill with one of the credit cards he had.

Second, it is well known that the presence of an adverb of quantification in a conditional donkey sentence may affect the interpretation of the donkey pronoun. Consider, for instance:

(22) If a farmer buys a donkey, he sometimes vaccinates it.
(23) If a farmer buys a donkey, he often vaccinates it.
(24) If a farmer buys a donkey, he almost always vaccinates it.

Intuitively, the first three sentences could be true even if no donkey-buying farmer vaccinates all of the donkeys he buys.[27] A satisfactory paraphrase results if the relevant donkey pronoun is replaced with a partitive construction that inherits the quantificational force of the adverb:

(25) Most farmers who buy a donkey vaccinate most of the donkeys they buy.
(26) Some farmers who buy a donkey vaccinate some of the donkeys they buy.
(27) Almost all farmers who buy a donkey vaccinate almost all of the donkeys they buy.

In downward entailing/negative environments such as:

(28) If a farmer buys a donkey, he never vaccinates it,

we get a satisfactory paraphrase by replacing the relevant donkey pronoun with a partitive construction of the form 'any of the Fs':

(29) No farmers who buy a donkey vaccinate any of the donkeys they buy.

Thus, in the absence of conflicting background information the interpretation of donkey pronouns varies as a function of the quantificational force of the adverb of quantification. This variation is easy to account for if (i) donkey pronouns go proxy for plural definite descriptions, and (ii) the semantic import of plural definite descriptions depends on linguistic and extra-linguistic context, as I have argued above.

[27] This is exactly what the unselective treatment of adverbs of quantification developed by Hans Kamp and Irene Heim predicts. See e.g. Kamp, 1981 and Heim, 1982, pp. 234ff. The unselective treatment of adverbs of quantification, however, is not empirically adequate. For discussion see Kadmon, 1987.

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7. Conclusion

On a Russellian account of plural definite descriptions, sentences of the form 'the Fs are G' imply that every one of the Fs satisfies a singular form of the plural predicate G in distributive environments. Russellians thus fail to account for the difference in truth-conditions between the following two sentences:

(14) The students asked questions
(15) Every one of the students asked questions

In the light of examples like these it has been suggested that plural definites have the semantic import of existential quantifiers. Thus, (14) is true, on this view, just in case some students (in the domain) asked questions, which seems fine. The trouble with an analysis of plural definites as devices of existential quantification, however, is that partitives like that in (15) contain a plural definite description. So, if plural definite descriptions are devices of existential quantification, then (15) is true just in case there are some students every one of which asked questions. But the latter is equivalent to 'some students asked questions', which are the truth-conditions the unitary analysis will assign to (14). Hence, the unitary analysis predicts that (14) and (15) should be truth-conditionally equivalent, which clearly they are not.

I have argued that the plural definites are best treated as having an overt or covert partitive structure. Partitives of the sort that is relevant here tell us how many of the Fs collectively satisfy the complement if the complement is non-distributive, or how many individually satisfy the complement if the complement is distributive. For example, 'every one of the students' as it occurs in (15) tells us that every one of the students satisfies the singular predicate 'λx(x asked questions)'. In the case of partitives, the force of the quantifier in the predicate is determined by the syntax. That is, the quantifier is present at the level of logical form. In the case of non-partitive plural definite descriptions in environments like (14), however, the force of the quantifier is at least partially determined by the speaker's knowledge of the lexical nature of the predicate. Following Carlson, knowledge of the lexical nature of the predicate requires knowledge of background assumptions concerning the situations in which we are to evaluate the sentence in which it occurs. In the case of (14), for example, knowledge of the lexical nature of the predicate will determine that the students$_X$ satisfy the plural predicate 'λX(X asked questions)' just in case some of them$_X$ satisfy the singular predicate 'λx(x asked questions)'.

The present account of plural definite descriptions inherits advantages of the alternative analyses considered above without suffering from their drawbacks. Unlike the Russellian analysis, the present account allows that sentences of the form 'The Fs are G' may be true even if some Fs are not G, and unlike the unitary analysis, it entails that plural definite descriptions carry a semantic implication of universality. For example, (14) is true just in case *all* the students$_X$ are such that some of them$_X$ asked questions. It thus semantically incorporates the possibility of

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varying truth-conditions for sentence containing plural definites, and it naturally handles partitive constructions.

The question that remains is whether the proposed account of plural definite descriptions can teach us anything important about singular definite descriptions. I believe it can. Though I won't put it to test here, I hypothesize that every occurrence of the definite article has the same linguistic meaning. If this is right, then singular definite descriptions carry a semantic universality implication as well, just as Russell envisaged.

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