**On the Quantified Account of Complex Demonstratives**

**Abstract** This paper argues for a different logical form for complex demonstratives, given that the quantificational account is correct. In itself that is controversial, but two aspects will be assumed. Firstly, that there are arguments to believe that complex demonstratives have quantificational uses. Specifically, there are syntactic arguments. Secondly, a uniform semantics is preferable to a semantics of ambiguity. Given this, the proposed logical forms for complex demonstratives that are prevalent do not respect a fundamental property of quantifiers: permutation invariance. The reason for this is the attempt to retain, in the logical forms proposed, the strong intuitions of reference that uses of complex demonstratives display. The paper suggests that the directly referential intuitions surrounding complex demonstratives cannot be taken to be part of the semantics of the expression. There appears to be no need to do so, either. The paper defends the new logical form against various objections.

Keywords Complex Demonstratives, Quantifiers, Permutation Invariance, Logical Form

**Introduction**

Complex demonstratives are phrases like *that giraffe* or *this cup of tea*. These are contrasted with bare demonstratives which do not have a noun phrase attached to the demonstrative, as in the sentence, “That is a man”. It is an open question as to what logical form can be ascribed to complex demonstratives.

There are both referential and quantificational views regarding the logical form of complex demonstratives. Direct referentialists (Kaplan 1989a, b; Borg 2000; Salmon 2008) argue that the logical form for an expression like “That F is G” is like (1) below:

1) Ga

Here, *a* is the individual, who is part of the proposition, and G is predicated of *a*. The proposition expressed is singular, as one would expect on a directly referential analysis. If one has to evaluate this proposition for its truth value in another circumstance of evaluation then it is the individual *a,* and not someone else, who must satisfy the predicate G in the altered circumstance. Direct referentialists have to say something about the role of F. One may say, taking the cue from Glanzberg and Siegel (2006), that the F plays a “policing” role. The common thought that runs through many direct referentialist accounts is that if the F is not satisfied by the individual pointed to or demonstrated, then no proposition is expressed.

Quantificationalists like King (2001) and Ludwig and Lepore (2000) try to retain the nature of the singular proposition that complex demonstratives express but reformulate it in quantificational terms. The logical forms they cite are (2) and (3) below.

2) Being F and Being =a are uniquely jointly instantiated in an object x in a world w and time t and x is G.[King, 2001]

3) [The x: x=that and x is F] (x is G) [Ludwig and Lepore, 2000: 215]

King’s logical form for complex demonstratives has an explicit role for intentions. These intentions “determine” the property of identity of the object demonstrated by the demonstrative. Thus, (2) retains the insight of the direct referentialists that the same individual has to be accessed from one circumstance of evaluation to another, but denies that the individual herself has to enter the proposition. Ludwig and Lepore’s logical form embeds the singular referring term “that” *in* the logical form to accommodate the direct referentialist intuitions. This makes Ludwig and Lepore think that their view is really quasi-quantificational.

This paper argues for two claims. One, if the quantificationalist must accommodate referentialist intuitions then a significant property of quantifiers is lost: permutation invariance. King (2001: 124/5) notes this fact and tries to get around it. The permutation invariance property of quantifiers is that, roughly, the truth value of quantificational statements is identity insensitive, that is, it does not matter which object is satisfying the predicates in question, as long as they do. Two, if the arguments for the quantificational view have some weight, and the permutation property has to be retained, then a different logical form has to be proposed. The logical form I will propose is (4) below.

4)

This logical form has the problem of losing the direct referentialist’s intuition, which King, and Ludwig and Lepore, were trying to retain. It will be argued that if we *assume* that the quantificational arguments are on the right track then we must accept this consequence. This further implies that either we must accept that complex demonstratives are semantically ambiguous or else believe that direct referential intuitions are not part of the semantics of such expressions. I opt for the latter option.

**The Quantificational Account and Permutation Property**

The quantificationalist account of complex demonstratives flows from various arguments related to scopal phenomena, quantification-in, syntactic arguments from antecedent contained deletion and weak crossover. These arguments are controversial and have been challenged by philosophers (Salmon, 2008, Braun, 2008). This paper does not aim to adjudicate this debate. Let us assume, just for the sake of argument, that the quantificationalist is right about these arguments. Let us assume that there are quantificational uses of complex demonstratives. We are already aware of the directly referential intuitions from Kaplan’s (1989a,b) seminal work. The remaining question is whether quantificationalists are able to achieve a unified semantic account for complex demonstratives.

It is usually taken for granted that the unified semantic account must account for the intuitions that direct referentialists have. This follows from the circumstances in which a demonstrative is used. Usually, there is a salient object and the utterer of a sentence of the form *That F is G* intends to say something of that object. The logical forms (2) and (3) above capture this intuition. Since King retains the role of intentions, he can easily capture singular thoughts without importing the object in to the proposition. Now, quantifiers are well known for possessing a property, namely permutation.

Larson and Segal explain the property of permutation in the following way:

...quantification has the property that if we were to change the identities of the individuals in X and Y in a consistent way, preserving the numbers in each and their relative proportions, then the relation would continue to hold. A relation that holds only in virtue of the relative numbers of X’s and Y’s and not their identities, is a quantificational relation. [1995:302]

If I say, “Every man is vaccinated against small pox”, then the truth of the sentence is not going to change if Peter, Paul and Patrick are changed for Joe, Jack and Jake in the set of men, as long as both are vaccinated against small pox. The identities of the men are simply irrelevant. This is clearly not so for the case of complex demonstratives that are used to convey some information about some salient object. If I say, “That man is a liar”, pointing towards someone, then I have said, of *that* man, and no one else, that he is a liar. If one changes the circumstance of evaluation for the utterance, then in that circumstance of evaluation, it is of *that* man in the original circumstance of whom we have to decide whether he is a liar or not in the new circumstance. Complex demonstratives, at least in their perceptual uses, do not retain truth value under permutation. If King, and Lepore and Ludwig, wish to retain the standard referentialist intuitions and retain the quantificational view, then, they must believe that the permutation property is not definitive of quantifiers.

But quantifiers are logical expression precisely because they obey permutation. It is difficult to imagine why one should give up the permutation property *just* for the sake of complex demonstratives. If we wish to retain referentialist intuitions, then we might as well be referentialists. Or settle for ambiguity. It seems that both the logical forms (2) and (3) suggested suffer from the same problem: they lose the logicality of quantifiers, the fact that quantifiers are identity-insensitive. In trying to gain a unified semantics, we lose a significant property of quantification. That is an undesirable result. Given this, it appears that the logical form (4) above may be one option to go for. There are quite a number of arguments against (4) though. Let us consider them one by one, the first being that King is well aware of the permutation problem and does *not* think that it is a problem for his view.

**Objections**

Objection 1: Lack of Permutation is no Problem

Noting the general problem, King writes

“…it may be that all *syntactically simple determiners* other than ‘that’, assuming we are correct about how it works, are logical. Thus, my view may require us to say that ‘that’ violates an otherwise universal semantic constraint on *syntactically simple* determiners.” [King, 2001: 124]

How can this violation be made sense of? King suggests that complex demonstratives are like other nonlogical determiners like “Every \_\_ but John” which are non-logical because of the lexical item *John* present in them. Complex demonstratives are non-logical because of the *intentions* of the speaker involved. I think the appeal to intentions is right. However, the role that King gives to intentions in the theory need not match the evidence he brings from syntax to support his theory.

It is clear enough that King (2001) takes syntactic evidence like Weak Crossover or Antecedent Contained Deletion seriously and quite a number of his arguments for the quantificational nature of complex demonstratives come from the syntactic behavior of these expressions.

It should be noted that intentions play no role in syntactic theory in generative grammar. Intentions are not part of the numeration and are not Merged or don’t suffer Internal Merge. But the notion of a numeration or the operation of Merge or Internal or External Merge are very much parts of what we call syntax today. Indeed, if one is to go by what Chomsky (2016) says, then Merge is the fundamental operation of language. Chomsky calls Merge “…the simplest computational operation” (2016:16). The numeration is where all the lexical items are placed to be exhausted by syntactic operations later. Merge takes two lexical items and puts them together, projecting one of them as a “head”. The merger operation keeps going till one exhausts the numeration.

To see this in practice, let us borrow one of Chomsky’s own examples. How do we get the sentence “*Which book did John read.”* We use the operation Merge to put together *read* and *which book* and get *read which book.* This new object is then Merged again with *John* to get *John read which book.* Now another application of Merge takes place. This operation is called Internal Merge. We take *which book,* already available in the Merged items, and Merge it again, getting *which book John read which book.* The occurrence of *which book* down below gets erased later giving us finally the sentence *which book did John read.* We know when we hear the sentence that we are asking what was the book that John was reading, that is, the book is the *object* of *read.* But on surface, when we hear or read the sentence, we see/hear *which book* displaced from the object position. This is the phenomenon of displacement, captured by Internal Merge. No intentions are needed or used here nor do intentions carry out the operation of Merge or Internal Merge.

Chomsky (2016) stresses that language employs the operation of Merge to generate hierarchical structures as opposed to linear structures. So, in the sentence, *which book did John read,* the phrase *which book* is *higher* in some crucial sense of “higher” than the other parts of the syntactic derivation *John read which book.[[1]](#footnote-1)* The first occurrence of *which book* in *which book John read which book* is not on the same flat surface the way we see the sentence on a page. The generation of heirarchy is certainly no work of intention. One can intend as much as one wants but get neither hierarchy nor linearity in one’s linguistic representations[[2]](#endnote-1).

Even in King’s own arguments for complex demonstratives being quantificational, the role of intention is not required. Take Antecedent Contained Deletion (ACD). This complex term refers to a phenomenon related to quantifiers. Linguists and semanticists believe that quantifier phrases like *every* or *some* move from their positions – as we saw above with the example of *which book* moving to a clause initial position – to a higher position. In some cases, this movement is covert and hence evidence is not easily available. If so, how do we know they move? Amongst many other reasons, ACD is given as an example. ACD involves the notion of ellipsis. Ellipsis can be seen in the following sentences, from Lasnik, Uriagereka and Boeckx (2005:196). I have made some slight changes to the representation of the phrase marker.

(A) John [verb phrase loves his mother] and Bill [verb phrase loves his mother]

(B) John loves his mother and Bill does too

The basic idea here is to understand the (B) sentence. So, what is it that Bill does? Bill loves his mother, naturally. So, it is the verb phrase – syntactically - that is ellipsed and replaced by *does too.* Now take a sentence like (C) below, used by King (2001:17).

(C) Tiger birdied every hole that Michael did.

Here the verb phrase is *birdied every hole that Michael did.* But if it is the verb phrase – which is higher up - which is to be replaced in the ellipsis site, then we get (D).

(D) Tiger birdied every hole that Michael [birdied every hole that Michael did].

We don’t want this for the obvious reason that the ellipsis site recurs again and we are off on an infinite regress. The original sentence (C) is grammatical but we appear not to have any way of deriving it that blocks the infinite regress. It is the movement of the quantifier phrase that comes to the rescue.

(E) [quantifier phrase Every hole that Michael did] [Tiger [birdied t]

Here, the quantifier phrase has moved out of its initial position and the verb *birdied* is not higher than the ellipsis site. Now, we can copy *birdied* into the ellipsis site and we get the right meaning of the sentence, which is that every hole that Michael birdied was also birdied by Tiger. But this movement of the quantifier is not available to us anywhere in our sensory evidence: so it must be covert. The argument here is that quantifiers move covertly at a level of linguistic representation called Logical Form (LF). We see the same effect with complex demonstratives, as suggested by King (2001: 17).

(F) Tiger birdied that hole that Michael did.

The same problem of ellipsis occurs here and the suggestion is that if complex demonstratives were not quantificational we would not be able to find a solution to the infinite regress problem. This shows that complex demonstratives are quantificational. Again, we don’t need any intentions to resolve the problem of infinite regress nor does King ever suggest that any intentions are required here.[[3]](#footnote-2)

The remaining question is whether intentions should play a role in semantic theory. If no intentions are required to set up the case that complex demonstratives are *at least* quantificational, then bringing intentions in to shore up the referential use of complex demonstratives seems to add an extra wheel we can do without.

Furthermore, it appears to me that if the logicality of quantifiers is violated by giving an explicit role to intentions, then it is a clear choice regarding whether we make an exception for complex demonstratives or not, given that all other quantifiers (not necessarily all determiners, as “he” , “she” are determiners too) obey logicality.

At least one traditional point of distinguishing names from quantifiers is that quantifiers are logical expressions (i.e, they obey permutation invariance) but names are not logical expressions in that sense[[4]](#endnote-2). If we lose logicality, as on King’s views we do, then we lose the distinction between names and complex demonstratives, at least on the latter’s perceptual uses. This appears to me to be a costly move. We lose a prime property of quantifiers without any gain in a perspicuous analysis. It is better to adopt (4) above as the logical form of ‘That F is G’, pushing intentions out of the linguistic account of complex demonstratives.

This has the advantage of drawing a tighter connection between syntactic work and semantic accounts of quantifiers and we have to make no exceptions at all for the logical nature of complex demonstratives. It may be complained that we have lost the referential aspect of complex demonstratives. But we haven’t. These have been relegated to intentions. Intentions can always come in to play a role in rigidifying the content of an expression.

We can see the effect of intentions with other quantifiers. Thus, I can use the phrase “some man” in a rigid way, if my intentions come into the picture. If a public bus driver is driving dangerously, and I am one of the passengers, I can turn to a co-passenger and say, “*Some* bus driver is driving crazy here”, intending to talk about the driver who is doing so. If we travel to another possible world to evaluate the truth of this sentence, then we must pick the *same* bus driver to see whether he is driving crazy or not. This is because my intentions had picked that person out. But this does not mean that the quantifier “some” remains a quantifier but has lost the property of permutation invariance. It means that “some” can be used with intentions that in effect make it lose the property of permutation. The same could be the case with complex demonstrative. They do have the property of permutation but intentions seem to mask it. King says as much, but he chooses to give intentions a role in the semantics. There seems to be no need to do so. It would be simpler not to involve the intentions in the semantics.

Also, it is important to understand that having an individual in mind, or thinking about some specific individual – what is roughly called *specificity –* is not necessarily a matter of intentions[[5]](#footnote-3). Mürvet Enç (1991) notes that specificity effects in English can be achieved by attaching words like *certain, specific,* and *particular.* Here is an example by Enç.

(G) Ned must speak to a particular congressman who has sworn to vote against the bill.

(Enç, 1991:2)

In this example the words “a particular” makes the point of the statement clear: Ned need not speak to any old congressman, he has to speak to a specific one. Hence, here *a particular congressman* has wide scope.

Interestingly, Enç suggests that specificity on an indefinite noun phrase can be marked by an accusative case morpheme in Turkish, -(y)i. When this accusative case morpheme is there, the indefinite noun phrase is understood as specific.

(F) Ali bir piyano-yu kiralamak istiyor.

Ali one piano-Acc to-rent wants '

Ali wants to rent a certain piano.' [Ibid: 4]

Enç also gives evidence that in Turkish when demonstratives occur in object position, they must have accusative case. This means that whatever my intentions are, if the accusative case is not there in object position for the complex demonstrative, the sentence would be ungrammatical. That suggests that intentions are not the only way of gaining specificity. There are other markers of having an individual in mind in other languages. This is all the more grist to my mill because I don’t think that intentions are part of the semantics of complex demonstratives.

But what if the intention to refer to an individual is just being marked by the use of grammatical resources in the language, as in the case of Turkish? The fact that there are other markers for specificity does not mean that the intention is not there. One can still argue that the intention came first, the marker later or simultaneously, and it was the intention that loaded the object into the proposition.[[6]](#footnote-4) To help us out of this objection, we need to distinguish between semantic and meta-semantic notions at play here. This distinction was made by Kaplan (1989b). For a proper name, what allows the name to get to its referent, a la Kripke, is the causal chain. But this causal chain does not play any part in the semantics of the proper name. The semantic value of “Kaplan” is Kaplan and it is a meta-semantic issue as to how the use of the name referred to the bearer. A causal chain may be in operation or something else. We can use the same distinction to say that the intention’s getting hold of the object in question, while a complex demonstrative is in use, is a meta-semantic issue. Just like a causal chain gets us to refer to the object, the intention determined which object is being referred to. But the use of the intention or its existence is a meta-semantic issue.

Objection 2: The improvement suggested is only in name

It might be protested that (4) is really no improvement. As a matter of fact it has a serious flaw in it. It only looks better but has the identity of the object *displayed on its sleeves* since it uses the expression, *x is the demonstratum*. The word “demonstratum” seems to involve the object. After all, how did we know there was a demonstratum at all if there wasn’t an object being demonstrated? If this is admitted we are really back with Kaplan’s directly referential views. Thus the suggested logical form made no improvement.

Responding to this objection, one may contend that the phrase *x is the demonstratum* only suggests that a unique object is being referred to when we utter *That F is G* in the situation where there is a salient object in presence of the speaker and the hearer. Uniqueness does not involve identity, though. Uniqueness is part of definite descriptions too, but they don’t involve the identity of the person. The objection arises because the word “demonstratum” is being taken in isolation from the phrase *x is the demonstratum*. If one does that, there is an impression that the object demonstrated has been smuggled in without it being explicitly mentioned. But that is not so. The logical form in (4) is trying to capture what we linguistically understand by the expression ‘That F is G’. It is clear that we should understand that there is a demonstratum – whether it is really there or not – since a demonstrative phrase has been used. That is the intuition being captured when the phrase *x is the demonstratum* is included in the logical form. If the object was to be smuggled in then there was no reason to use the variable. Even Lepore and Ludwig (2000) use “x=that” in their logical form. The idea is the same: it is to ensure that there is something corresponding to the demonstrative without committing oneself to the identity of the object. I think the logical form i have suggested is more perspicuous than Lepore and Ludwig since I am using the “is” of predication and not that of identity. I am not trying to accommodate for the referentialist’s intuition of capturing the individual in the thought but to acknowledge that our understanding of their being a demonstratum in the world is contained in the syntax/semantics of complex demonstratives.

Objection 3: No way to account for the direct referentialist’s intuition

Given the logical form (4), how is one supposed to explain the direct referentialist’s intuition? Surely, Kaplan, King and Ludwig and Lepore have a serious advantage over the suggested alternative. They are all able to account for the direct referentialist’s intuitions. But the alternative I have suggested cannot. This is a damaging drawback. After all, *x is the demonstratum* leaves us the option of picking up the demonstratum from just anywhere. There are zillions of demonstrata.

In reply, one has to say that these referentialist intuitions spring from the intentions of the speaker. We are not having *linguistic* intuitions here, intuitions about what we mean by what we say, but general intuitions to come up with an idea as to how the object is to be located and picked out of the number of options present to pick out something from the context.

These intentions are required, for mere use of the demonstrative is not enough to latch on to the object. This fact has been recognized for long. An argument can be made that the very fact that complex demonstratives require intentions to capture the object, coupled with all the arguments for quantification, show that complex demonstratives are semantically quantifiers and require something extra, a non-semantic mechanism, like the presence of intentions, to complete the communicative act of the speaker. The idea is that all that the complex demonstrative semantically ensures is uniqueness relative to context; identity is delivered by the intentions. This thought is already present in King’s analysis (as well as Kaplan’s).

The argument here is that, given the violation of the permutation property in the quantificationalist accounts, if one wishes to retain the quantificationalist account one must settle for treating the object determined by intentions to be *not* part of the semantic mechanisms made available by language. The architecture of language as is imagined in syntactic theory may interface with a conceptual-intentional system (Chomsky, 1995), but the architecture does not have any place for them – the concepts and the intentions - *within* the system. It is not intentions and concepts that suffer computational process. We do not need to account for the direct referentialist intuitions linguistically. This also means that the semantical system and the intentional mechanisms are distinct from each other. This is of course a controversial point. Chomsky has often stressed that there is just syntax and pragmatics implying that there is no semantics playing any useful role “in between.” However, he has also pointed out that much work in formal semantics is to be taken as really work on syntax. What he means is that the work in formal semantics can be taken to be a contribution to the internal computations of the mind on mental representation, where the word “representation” does not mean “representing something in the outside world.” It is in this sense that I use the phrase “semantical system.”

Objection 4: No account of quantificational uses!

Another objection to (4) might be that even if one accepts such a logical form, and accepts that it is able to avoid the permutation problem for King, and Ludwig and Lepore, it runs into an *opposite* problem. The problem is that it cannot account for the quantificational readings of complex demonstratives! This problem can be illustrated in the following way. To take a leaf from one of King’s (2001) examples, take someone teaching the development of hominids. She says, praising the hominid, who developed fire:

5) That hominid who developed fire was a genius.

In such an expression, it is clear enough that there is no demonstratum present in the classroom. There is no demonstratum at all anywhere in the present. Maybe there is one in the remote past. Given this, the objection will run, how is it possible for the logical form (4) above to capture the truth conditions of (5)? If there is no demonstratum then nothing can satisfy *x* in *x is the demonstratum*.

This objection can be met in the following manner. It can be said that there are two ways to utilize the logical form in (4). When a complex demonstrative is uttered where the object is present, we may utilize the logical form (4) above where *x is the demonstratum* is subscripted with the word *present*, to suggest that the object is salient. The word *present* may not be the right word to use though, since it has connotations with time and may itself need a directly referential analysis. A better option may be to subscript *contextually salient.* When the object is not present, then one may use the subscript *not contextually salient.*

The latter will capture the truth-conditions of (5). The reason is that the hominid is not present, the speaker does wish to convey something about a particular hominid which is the purported demonstratum of the speech act, and the identity of the demonstratum is permutable. It would not matter which hominid was the genius.

It may be suggested that providing these subscripts makes complex demonstratives ambiguous between contextually salient and not so contextually salient uses. But that is the case with King and Ludwig and Lepore as well. Clearly, they too have to account for general readings of complex demonstratives and “singular” readings of complex demonstratives. There are clearly two different uses we make of complex demonstratives, if the quantificationalist view is right. One is where the object is contextually available and one where the object is not contextually available as in (5). No one has blamed King of producing a theory that gave ambiguous readings. His whole point was to unify the readings available for complex demonstratives. An ambiguity charge cannot be laid against me if it cannot be laid against King.

Objection 5: Where is the role for Context?

This objection can be made to run in the following way. There appears to be no role for context in the logical form suggested. There is a role for context in all other logical forms that are prevalent. Therefore, the logical form suggested in (5) is not quite right. Surely, one cannot give up referential intentions and also give up context. At this rate, one might as well give up theorizing about complex demonstratives. Every single vestige of a successful available theory has been taken away.

In reply, I have already suggested that when a complex demonstrative comes to be used, ultimately, to understand and account for quantificational uses, one must use subscripts like *not contextually salient* or *contextually salient*. This shows that a speaker must recognize that contextual evaluation of the expression is important. A contextual restriction is assumed in other uses of quantificational expressions as well. When we say “Every student failed” we do not want to make this statement entirely out of context. Not every student in the world failed, but only some did who are being referred to in the context of speech. There are restrictions of domain. There is a question whether one is supposed to build it into the syntax or semantics or not. In the case of complex demonstratives, one can say that whether such subscripts as I have mentioned are to be allowed or not is going to depend on the general arguments for whether contextual evaluation is a matter of syntax of semantics or pragmatics for other quantifiers or not. It is a general problem, not something that specifically affects complex demonstratives.

It is well known that in the current version of research into the syntax of natural languages subscripts or indices are not available *in the syntax.* So where do they come in? They might come in useful in the semantics or the pragmatics. Given the ubiquity of contextual determination of quantifiers and the restriction that such subscripts are not available in the syntax, we have to settle for such subscripts to be available either in the semantics or the pragmatics. This issue depends on what the semantics/pragmatics distinction is and whether such a distinction exists. One cannot however say that no subscripts can be there just because they are not there in the syntax for the simple reason that use of subscripts is quite common in semantics. A look at the semantics of modality suggests that even an ordinary judgement that is *non-modal* is true at a world, where the world is taken as actual. This understanding is so obvious that we never think of using the subscript of “actual world” but it is required when one works out the semantics. And when we use words like “would” or “may” then other worlds come into play, and there is no way to accommodate this fact except through using subscripts or some other mechanism to make the thought expressed by such sentences clear[[7]](#footnote-5).

Objection 6: The infinite regress problem

Here is how the objection runs. When the phrase *x is the demonstratum* is used in (4) above, one wonders x is the demonstratum *of what?* The answer is, obviously, of the use of the word “that” by the speaker. This means that our linguistic understanding of ‘That F is G’ is really of the sort *There is an x such that x is the demonstratum of ‘that F is G’ and x is F and x is G.* But this only re-introduces the expression ‘that F is G’. So we must analyze this again. It is obvious that we have an infinite regress looming here. So, the purported logical form sinks, along with the pretensions of a better analysis.

The objection arises because of the initial question: *x is the demonstratum* of what? This question need not be a serious one. This is because we are analyzing the expression “That F is G” and in its analysis it becomes clear that a linguistic understanding of the phrase involves understanding that there is a demonstratum that such expressions are being used to pick out. So, we antecedently understand of what the demonstratum is a demonstratum of. Moreover, adding ‘That F is G’ as suggested by the imaginary objector is harmless, since we are only mentioning and not using the expression anymore inside the logical form for ‘That F is G’.

**Conclusion**

We arrive at the following results. One, suppose that the quantificationalist arguments are right. If one wants a unified semantics for complex demonstratives, it appears that we must retain the intuitions of direct referentialists. But this cannot be done without violating the permutation property of quantifiers. Both (2) and (3) do so. Two, continuing to assume that the quantificationalist view is right, the option of (4) above is a proposal that can be offered for the logical form for complex demonstratives.

If we take option (4) seriously, then we have to admit that the intuitions of direct reference are not part of the semantics of complex demonstratives. It also seems that we have to maintain that particular subscripts are required for adjusting to varying uses of complex demonstratives.

We gain in two respects: one, we retain logicality; two, we retain a tighter connection with syntactic theory and a neat enmeshment of it with semantic theory in the sense that what is a quantifier in syntax is also a quantifier in the semantics. We lost a lot too, but I have contended that the losses can be borne with greater equanimity than the fear of the change may suggest.

1. The notion of hierarchy is usually expressed through the notion of c-command in linguistics. One characterization of c-command offered by Lasnik and Uriagereka (2005: 51) is “A c-commands B iff A does not dominate B and all nodes dominating A dominate B.” This definition is meant for a binary branching structure. [↑](#footnote-ref-1)
2. I am working with a conception of the mind as proposed by Noam Chomsky in various publications. In this conception, many aspects of the mind are “mental” in some rough sense of mental – intentions, desires, beliefs, etc - but what is specifically human to the human mind is the language faculty. This faculty at least consists of the operation Merge which takes two lexical items, say X and Y and forms the new object Z. Chomsky’s idea is to merge the study of language within the general ambit of psychology and biology. Like any other theory of the mind within psychology and biology, Chomsky’s theories are open to revision and challenge. I think there is enough evidence for the fact that there is some innate component to language which is instrumental to language acquisition. This does not mean that there is anything called a *lingua mentalis*. The existence of any such thing is a matter of adducing further evidence and argument. Semanticists can continue their investigation without assuming any *lingua mentalis*. Whether they are to necessarily accept any such thing is an open question. [↑](#endnote-ref-1)
3. ACD, and the solution through QR, have been challenged and King’s use of ACD has also been challenged, the latter by Altschuler (2007). It will change the course of the article to defend both. It should be noted that QR is an independently robust phenomenon and its use in ACD is well-motivated. Syrett and Lidz (2009) give arguments for their relevance in child language acquisition. [↑](#footnote-ref-2)
4. In the conception of quantifiers that I am working with it is at least a pre-theoretic requirement that names are different from quantifiers. There are of course other conceptions of quantifiers like the Montogovian one where names are treated as quantifiers. My motives tend to be more influenced by philosophy of language in this paper rather than formal semantics or questions related to how far do first order quantifiers extend in their treatment of ordinary language quantifiers. Much of what is written in the paper follows from Russell’s idea that the “variable is fundamental” to our understanding the elements of thought. To look at complex demonstratives from the perspective of various theories of quantification – whether of Kamp, Heim or Keenan or Barwise and Cooper is outside the scope of this paper though I admit that it would be an instructive and valuable piece of research to do so.

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   Syrett, Kristen and Jeffrey Lidz. (2009). QR in Child Grammar: Evidence from Antecedent Contained Deletion. *Language Acquisition,* 16, 67-81. [↑](#endnote-ref-2)
5. I thank an anonymous reviewer for making me aware of this issue. [↑](#footnote-ref-3)
6. I thank an anonymous reviewer for this objection. [↑](#footnote-ref-4)
7. An anonymous reviewer has pointed out that, in contrast to English, Japanese has a three-way use of complex demonstratives and therefore may need more subscripts than just *contextually salient* or *not contextually salient.* Or it is possible that the notion of subscripting is not getting things right. Not knowing Japanese it would be incorrect of me to hazard a guess. It appears to me, given the evidence presented by the anonymous reviewer, that in Japanese there is an interplay going on between how rich the lexicon is in its features which are present for complex demonstratives and the subscripts that get attached later because of context. Thus, if one uses “Sono F” (that F within your orbit), then it seems to me that the lexicon records the fact that the demonstrative is used for something “within the orbit.” Here “within the orbit” may well be a feature of the demonstrative and later subscripts may be added, if necessary. Same for “Ano F” (that F outside your orbit). This suggests that languages of the world tend to differ on how rich the feature systems are for complex demonstratives. English appears poor in this respect, as it is in many others, for instance Case marking. I thank the anonymous reviewer for pointing out this remarkably interesting phenomenon in Japanese. [↑](#footnote-ref-5)