<u>Rearming the Slingshot?</u>

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1. Introduction

Slingshot arguments aim to show that an allegedly non-extensional sentential connective—such as "necessarily (_)" or "the statement that Φ corresponds to the fact that (_)"—is, to the contrary, an *extensional* sentential connective. That an alleged non-extensional sentential connective would turn out to be extensional is devastating for it would lead to such radical conclusions as: (i) if sentences or proposition refer to facts, then all facts collapse into one big fact, (ii) if sentences or propositions refer to anything, then they refer to their truth value (which means there is just one thing to which all true sentences refer (e.g., the True), and just one thing that all false sentences refer (e.g., the False)), (iii) modal distinctions collapse, such that 'necessarily p' and 'possibly p' reduce to 'p,' etc.[1]

Neale (1995, 2001) argues that a reformulation of Gödel's slingshot puts pressure on us to adopt a particular view of definite descriptions. More specifically, Neale thinks that (certain) theories of facts are forced to adopt a Russellean or non-referential theory of descriptions, on pain of metaphysical collapse.[2]

In what follows, I will review Neal's reformulation of Gödel's slingshot, and his claims that such an argument provides a descriptive constraint for certain theories of facts. I

[1] Slingshot arguments have been used by philosophers such as Davidson (1967), Church (1943) and Quine (1953), (1960); their validity has been attacked by Lycan (1974), Cummins and Gottlieb (1972), Barwise and Perry (1983), et. al..

[2] Neale's claims, however, are not without their critics. In particular, Graham Oppy (1997) and (2004) argues that no plausible theory of facts would be constrained by Neale's reformulation of Gödel's slingshot, and as a result, such slingshot arguments are *not* particularly philosophically significant. I will not have the space here to elaborate on Oppy's objections, except for one (section 4).

will then formulate a *revised* version of the slingshot argument—one that piggy-backs on Neal's formulation. This revised version will rely on Kaplan's notion of 'dthat'[3]—a stipulated, technical operator that will allow us to secure a referential treatment of the terms used in the principles underlying the argument. I do not claim that Neale's original argument is valid (or sound). Nor do I claim that *any* slingshot argument is valid (or sound). I only aim to show, conditionally, that *if* Neale's version of the slingshot argument is successful, then there is another slingshot argument available, parallel in structure to Neale's, but independent of definite descriptions. Any objections to the revised slingshot, I maintain, will apply likewise to Neale's version of the argument. So either (i) there is a version of the slingshot that succeeds independent of any particular theory of descriptions (which would presumably be bad for most of us), or else (ii) Neale's slingshot was never threatening to begin with.

2. *Neale's Formulation of Gödel's Slingshot*

Neale's formulation of Gödel's slingshot relies on several principles of substitutivity and conversion: ι-SUBSTITUTION (ι-SUB), *The Principle of Substitutivity for Material Equivalents* (PSME), ι-INTRODUCTION (ι-INTRO), and ι-ELIMINATION (ι-ELIM).

ι-SUB:

$$\frac{(\iota x)\phi = (\iota x)\psi \qquad \Sigma[(\iota x)\phi]}{\Sigma[(\iota x)\psi]} \qquad \frac{(\iota x)\phi = \alpha \qquad \Sigma[(\iota x)\phi]}{\Sigma[\alpha]} \qquad \frac{(\iota x)\phi = \alpha \qquad \Sigma\alpha}{\Sigma[(\iota x)\phi]}$$

[3] Kaplan (1978).

PSME: $\phi \leftrightarrow \psi$
$\Sigma[\phi]$
———
$\Sigma[\psi]$

ι-INTRO[4]: $\Sigma[x / \alpha]$
———————
$\alpha = (\iota x)(x = \alpha \bullet \Sigma[x])$

ι-ELIM: $\alpha = (\iota x)(x = \alpha \bullet \Sigma[x])$
———————
$\Sigma[x / \alpha]$

PSME says that if ϕ and ψ are materially equivalent—i.e., if ϕ and ψ have the same truth value—then the replacement of one for the other in a sentence Σ is allowed. Neale reserves "+ι-CONV" as shorthand for a sentential connective that is both +ι-INTRO and +ι-ELIM; I propose we do the same here. The unwelcome conclusion of the slingshot argument will be that any sentential connective that allows both ι-CONV and ι-SUB will also allow PSME.

ι-CONV are two inference rules that allow the replacement of $\Sigma[x / \alpha]$—a sentence where x is everywhere replaced by a singular term α—for $\alpha = (\iota x)(x = \alpha \bullet \Sigma[x])$, and the other way around.

The argument, then, runs as follows, where we assume that "❸" stands for an arbitrary non-extensional S-connective that is +ι-CONV, +ι-SUB, and does not obey PSME:

1	[1]	Fa	premise
2	[2]	$a \neq b$	premise
3	[3]	Gb	premise
1	[4]	$a = (\iota x)(x = a \bullet Fx)$	1, ι-INTR
2	[5]	$a = (\iota x)(x = a \bullet x \neq b)$	2, ι-INTR

[4] Neale explains the notation: "$\Sigma[x]$ is any sentence containing *at least one* occurrence of a variable x, and $\Sigma[x / \alpha]$ is the result of replacing *every* occurrence of the variable x in $\Sigma[x]$ by the (closed) singular term α.)." Neale (*ibid.*), emphasis his.

2	[6]	$b = (\iota x)(x = b \bullet x \neq a)$	2, ι-INTR
3	[7]	$b = (\iota x)(x = b \bullet Gx)$	3, ι-INTR
1, 2	[8]	$(\iota x)(x = a \bullet Fx) = (\iota x)(x = a \bullet x \neq b)$	4,5, ι-SUB
2, 3	[9]	$(\iota x)(x = b \bullet Gx) = (\iota x)(x = b \bullet x \neq a)$	6,7, ι-SUB
10	[10]	❽(Fa)	premise
10	[11]	❽$(a = (\iota x)(x = a \bullet Fx))$	10, ι-INTR
1, 2, 10	[12]	❽$(a = (\iota x)(x = a \bullet x \neq b))$	11, 8, ι-SUB
1, 2, 10	[13]	❽$(a \neq b)$	12, ι-ELIM
1, 2, 10	[14]	❽$(b = (\iota x)(x = b \bullet x \neq a))$	13, ι-INTR
1, 2,3,10	[15]	❽$(b = (\iota x)(x = b \bullet Gx))$	14, 9 ι-SUB
1, 2,3,10	[16]	❽(Gb)	15, ι-ELIM

Assuming that ❽ is +ι-CONV and +ι-SUB, this argument shows that ❽ obeys PSME, which contradicts our original assumption. In other words, ❽ has been shown to be truth-functional—i.e., that materially equivalent sentences may be replaced within the scope of ❽ *salva veritate*—thus contradicting our assumption that ❽ does *not* obey PSME. We can see the philosophical consequences of this conclusion more clearly if we replace ❽ with "necessarily (_)" or "the statement that ϕ corresponds to the fact that (_)".[5]

The strength of (this version) of Godel's slingshot relies on definite descriptions, and the inference rules that we deem valid for them. In particular, we need to be able to grant that ι-SUB is a valid rule of inference to get the slingshot up and running. However—and as Neale is enthusiastic to point out—if one is Russellean about definite descriptions, then one will already be motivated to reject ι-SUB, rendering the slingshot ineffective. This is because ι-SUB claims that singular terms and definite descriptions can be swapped for each other in a sentence, *salva veritate*. But on a Russellian view singular terms refer, whereas descriptions

[5] Interestingly, Colin McGinn (1976) has suggested that the Curch-Davidson-Quine slingshot argument can be altered in just such a way to avoid Lycan and Cummins and Gottlieb type objections. McGinn does not, however, attribute the suggestion to Gödel, and Neale does not seem to have recognized that McGinn's suggestion closely resembles his own interpretation of Gödel.

do not, thus invalidating ι-SUB, and (in particular) steps [8], [9], and [12] in Neal's version of Godel's slingshot argument.

Fortunately, there are plenty of reasons to be a Russellean about definite descriptions. First, as lauded by Russell himself, the quantificational treatment of definite descriptions gets us out of four well-known semantic puzzles—negative existentials, apparent reference to non-existent entities, Frege's puzzle, and substitutivity puzzles. Moreover, in light of Donnellan-type cases[6], Saul Kripke has provided a convincing pragmatic story to account for apparently non-Russellean-behaving descriptions.[7] Finally, there are all of the other reasons that Neale himself points out such as the fact that no other competing non-Russellean theory of descriptions seems quite up to snuff, etc.[8]

So the moral of the Slingshot (according to Neale): tough luck for those particular fact theorists who are not Russelleans about definite descriptions,[9] but no worries for those of us who are.

3. *Kaplan's "dthat" and Rearming the Slingshot*

Let us assume (for a moment) that Neale's formulation is valid and that his verdict is correct: one can escape his version of the slingshot by having a particular view of descriptions. Even if this is right, we may be able to show that definite descriptions are not

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[6] Donnellan (1966).

[7] Kripke (1977)

[8] Neale (2001), Neale (1990), etc.

[9] By "those particular fact theorists" I mean those fact theorists whose theories are +ι-CONV.

the issue at all—i.e., that one can be a Russellian about definite descriptions and still fall victim to a different slingshot argument, which is parallel in structure to Neale's.

To do this, let us utilize Kaplan's notion of 'dthat'—a demonstrative use of 'that.'[10] Kaplan proposes that 'dthat' is followed by a demonstration (paradigmatically, a pointing or an indication of some sort), such that we somehow *get* the object that we are pointing to *into* our proposition. We are forced, by way of 'dthat' (and an accompanying successful demonstration), to treat the relevant demonstrative referentially. Importantly, Kaplan sets up "dthat" so that it is typically followed by a bracketed description in single quotes, which is not itself part of the proposition. Instead of the demonstration acting *as* a description and being part of the content of the proposition, we let a description serve as an (unvoiced) demonstration. Consequently, the demonstration allows us to get objects directly into the proposition, as would any rigid designator, or any other genuinely singular, referential term.

For example, Kaplan claims that statements such as (1) and (2)[11]

(1) Dthat ['the guy standing on the demonstration platform nude, clean shaven, and bathed in light'] is suspicious.

(2) Dthat ['the guy lurking in the shadows wearing a trench-coat, bearded, with his hat pulled down over his face'] is suspicious.

both express the same proposition—viz., (3):

(3) <John, p>

where "John" in (3) is the individual, John, and "p" is the property of *being suspicious*.

[10] Kaplan (1978)

[11] I've modified these examples, changing "he" to "dthat," and using the single-quoted device he introduces later in the article. Yet incorporating all that Kaplan (1978) says, this change should be harmless, and merely allows me to make my point more efficiently.

Kaplan admits that having an operator that behaves in this way will lead to a sort of epistemic opacity with regard to some of our utterances and beliefs. For example, since "dthat" is posited as being audibly indistinguishable from "that," one might utter (2) mistakenly—i.e., someone might really intend to utter the Russellean (4):

(4) The guy lurking in the shadows wearing a trench-coat, bearded, with his hat pulled down over his face is suspicious.

So, Kaplan claims, sometimes we use "that" in a Russellean way, letting our demonstration serve a description. When this is the case, then the *pointing* gets into our proposition and is treated *as* a description, just in the way that a Russellean description is.[12]

Let us use 'δ['(ιx)ϕ']' to stand for '*dthat* ['the x satisfying ϕ'].' Then we can rewrite the ι-SUB rules as δ-SUB:

δ-SUB:

$$\frac{\delta[`(\iota x)\phi'] = \delta[`(\iota x)\psi'] \qquad \Sigma[\delta[`(\iota x)\phi']]}{\Sigma[\delta[`(\iota x)\psi']]} \qquad \frac{\delta[`(\iota x)\phi'] = \alpha \qquad \Sigma[\delta[`(\iota x)\phi']]}{\Sigma[\alpha]} \qquad \frac{\delta[`(\iota x)\phi'] = \alpha \qquad \Sigma\alpha}{\Sigma[\delta[`(\iota x)\phi']]}$$

δ-SUB is a triple of inference rules, the first of which says that if dthat ['the thing that satisfies ϕ'] is identical to dthat ['the thing that satisfies ψ'], then for any sentence Σ in which the demonstrative description δ['(ιx)ϕ'] occurs, δ['(ιx)ψ'] can be substituted in for δ['(ιx)ϕ'], *salva veritate*.

[12] This will become relevant for an objection I address in the last section.

Let us also rewrite ι-INTRO and ι-ELIM as δ-INTRO and δ-ELIM, respectively, (and, following Neale, let us call something '+δ-CONV' if it allows both δ-INTRO and δ-ELIM as valid rules of inference):

δ-INTRO: $\dfrac{\Sigma[x / \alpha]}{\alpha = \delta[\text{'}(\iota x)(x = \alpha \bullet \Sigma[x])\text{'}]}$ **δ-ELIM**: $\dfrac{\alpha = \delta[\text{'}(\iota x)(x = \alpha \bullet \Sigma[x])\text{'}]}{\Sigma[x / \alpha]}$

Finally, assuming that '❽' is a non-extensional sentential connective that is both +δ-CONV and δ-SUB, the argument rewritten runs as follows:

1	[1]	Fa	premise
2	[2]	a ≠ b	premise
3	[3]	Gb	premise
1	[4]	a = δ['(ιx)(x = a • Fx)']	1, δ-INTR
2	[5]	a = δ['(ιx)(x = a • x ≠ b)']	2, δ-INTR
2	[6]	b = δ['(ιx)(x = b • x ≠ a)']	2, δ-INTR
3	[7]	b = δ['(ιx)(x = b • Gx)']	3, δ-INTR
1, 2	[8]	δ['(ιx)(x = a • Fx)'] = δ['(ιx)(x = a • x ≠ b)']	4,5, δ-SUB
2, 3	[9]	δ['(ιx)(x = b • Gx)'] = δ['(ιx)(x = b • x ≠ a)']	6,7, δ-SUB
10	[10]	❽(Fa)	premise
10	[11]	❽(a = δ['(ιx)(x = a • Fx)'])	10, δINTR
1, 2, 10	[12]	❽(a = δ['(ιx)(x = a • x ≠ b)'])	11, 8, δ-SUB
1, 2, 10	[13]	❽(a ≠ b)	12, δ-ELIM
1, 2, 10	[14]	❽(b = δ['(ιx)(x = b • x ≠ a)'])	13, δ-INTR
1, 2,3,10	[15]	❽(b = δ['(ιx)(x = b • Gx)'])	14, 9 δ-SUB
1, 2,3,10	[16]	❽(Gb)	15, δ-ELIM

Parallel to Neale's argument, given that ❽ is +δ-CONV and +δ-SUB, this argument shows that ❽ also obeys PSME, contrary to our assumption. All we have done is swap rules involving referring demonstratives for ones involving definite descriptions. So *if* Neale's version of the slingshot is valid, then so is this one.

And to the extent that Neale thinks that his formulation of Gödel's slingshot is a threat to theories of facts, this version of the argument should be, too. However, unlike Neale's version, there is no escaping metaphysical collapse *via* a theory of definite descriptions. Our "dthat" operator was specifically hand-picked to ensure that one cannot make a Russellean escape. Moreover, moving to a Russellean view about demonstratives is more controversial and less widely accepted than a Russellean theory of descriptions. One would need to provide independent reasons for holding such a view, on pain of being *ad hoc*. Finally, even Russell himself thought there was something special about the demonstratives 'this' and 'that'—something that prohibited them from receiving a purely quantificational analysis.[13] Treating demonstratives as non-referential would violate strong intuitions on the matter. So it seems we have a revised version of Godel's slingshot—one that tactically evades Neale's descriptive constraint.

4. *Objections, Replies*

One obvious place of resistance for is δ-SUB. Oppy (1997), (2004), for example, claims that there is already plenty of reason to deny ι-SUB in Neale's argument. It is *because* we reject ι-SUB, he argues, that we can account for the invalidity of the inference: "necessarily, nine is the square of three" to "necessarily, nine is the number of planets."[14] Similarly, one might argue, for the case of δ-SUB.

[13] Russell (1919).

[14] I am sticking with this example, familiar in the literature, even though it precedes Pluto's demotion.

However, consider the inference from (5) to (6):[15]

(5) Necessarily, nine is dthat [‘the square of three’]
(6) Necessarily, nine is dthat [‘the number of planets’].

Given how “dthat” works—given that demonstratives are rigid designators—we find the inference from (5) to (6) relatively less objectionable than a similar inference using descriptions. As another example, consider the inference from (7) to (8):

(7) Joe believes that dthat [‘the evening star’] is pretty.
(8) Joe believes that dthat [‘the morning star’] is pretty.

Since “dthat” was specifically designed to pick out objects directly, we might expect to validly deduce (8) from (7). Also, propositional attitudes are a much stronger case than the inference from (5) to (6). Given the hyper-intentional nature of propositional attitudes, if we can generate valid inferences involving “dthat” when imbedded inside the scope of propositional attitudes, then we can generate valid inferences involving content imbedded inside of modal operators. So if the forgoing inference from (7) to (8) is unproblematic, then so is the inference from (5) to (6), showing that δ-SUB is plausible.

Of course, one might protest that the inference from (7) to (8) is *indeed* problematic. Imagine that Joe is gazing up at the starry heavens, looking at Venus in the evening. He points to the star and utters, ever so slowly, (9):

(9) Dthat [‘the evening star’] is not identical to dthat [‘the morning star].

[15] Admittedly, this example inherits the oddity of having to ‘point to’ or demonstratively ‘pick out’ an abstract object. But given the way in which Kaplan sets up his “dthat” operator, there should in principle be no more difficulty in doing this than in picking out a concrete object. See below for elaboration on this point.

Suppose Joe utters (9) so slowly that it takes him over twelve hours to complete the utterance.[16] If so, then even in the case of directly referring demonstratives, propositional attitudes—and intentional contexts in general—are opaque with respect to their contents. In other words, if a coherent utterance of (9) is plausible, then we shouldn't expect a term that is explicitly directly referential—e.g., 'dthat'—to exhibit semantic innocence.[17]

But if "dthat" behaves in the way that Kaplan stipulates, then the content of (9) is best expressed by (10):

(10) <Venus, Venus, not-*i*>

where "Venus" is the planet, and "*i*" is the identity relation.

Yet self-identity is *a priori* if anything is. So Joe *couldn't* have uttered (9), if (9) is best expressed by (10). However, given Kaplan's claim that "dthat" is phonologically ambiguous between expressing a proposition that *includes* a particular demonstration and a proposition that does *not*—and given that he maintains that we are subject to epistemic opacity with regard to some of our utterances and beliefs—the correct diagnosis of our individual Joe who seemingly uttered (9) seems to be as follows. Joe, contrary to our assumption, utters (11), whose content is expressed by a proposition that *includes* descriptions of the relevant demonstrations.

(11) That [the speaker points at Phosphorus in the morning] is not identical to that [the speaker points at Hesperus in the evening].[18]

[16] Example adapted from Kaplan *ibid*.

[17] Thanks to Adam Sennet for helpful discussion on this section.

[18] Kaplan, *ibid*.

We were misled by the example into thinking that Joe uttered (9), because it is audibly indistinguishable from (11). But since the falsity of (9) is knowable *a priori*, it is more plausible that Joe utters (11) rather than (9).[19]

This point generalizes: it is more plausible *across the board* that any Frege case generated from the use of demonstratives is not an example of a case involving Kaplan's "dthat". Indeed, the fact that a Frege case can be generated is evidence that the relevant demonstrative is best expressed by a Russelian proposition, where the demonstration itself is part of the content of the proposition. Thus, in any case where there is a lack of semantic innocence, this very lack undermines any plausibility to the claim that the relevant proposition involves Kaplan's "dthat". Conversely, any proposition involving Kaplan's "dthat" will preserve semantic innocence. And hence, such propositions will obey δ-SUB.

Moreover, even if one rejects my arguments above, there is still a provoking consequence, and one that is decidedly unfavorable for Neale. If—despite my claim to the contrary—it is insisted that a referentialist about "dthat" would indeed deny δ-SUB, then so much more so for definite descriptions. That is, if demonstratives do not obey δ-SUB, then there is even less reason to think that definite descriptions obey ι-SUB, which would directly challenge Neale's claim to the contrary, and any related motivation for adopting a particular theory of definite descriptions to flee from the slingshot.

Thus, there is no reason to deny semantic innocence with regard to our "dthat" operator. And so, there is no independent reason to reject δ-SUB, making any theory of facts such that it will have to be +δ-SUB. If one is in disagreement with me—if one denies that the "dthat" operator is semantically innocent—then Neale's argument is undermined prior

[19] We could of course assume that Joe is in the habit of uttering *a priori* false propositions, but let's not.

to any particular theory of descriptions. For what goes for demonstratives goes for descriptions. So either (i) "dthat" is semantically innocent, in which case it obeys δ-SUB, and the revised slingshot goes through independent of definite descriptions, or (ii) "dthat" is not semantically innocent, in which case it does not obey δ-SUB, but in which case we are left with no reason to think that definite descriptions obey ι -SUB. Either way, an appeal to a particular view of descriptions—*a la* Neale—fails to contribute to a successful escape from the slingshot.

If δ-SUB is ok, then what about 'dthat'? One might argue that Kaplan's "dthat" cannot refer to or pick out things that we cannot see, touch, feel, etc., or abstract or unobservable entities. Kaplan himself does not have too much to say about this particular worry, but he does give an example that indicates he would find these cases unproblematic. Kaplan claims that it should be an easy matter to assert *of* the first boy born in the 22nd century[20] and say of *him* that he will be bald by saying (12):

(12) Dthat ['the first boy born in the 22nd century'] will be bald.

If we can pick out something that does not yet exist[21], but presumably will sometime in the future, then we certainly need not be able to see or be acquainted with the thing we are referring to. If this is right, then there seems to be no problem picking out abstract or unobservable entities either, since, as far as acquaintance-relations go, we seem just as far-removed from them as we do things in the future.

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[20] Original example modified.

[21] This example may hinge on one's view of time, and whether one admits the existence of future objects. I will ignore this complication for now, since the example can be harmlessly modified and the same point be made.

Finally, one might be tempted by several proposals that claim that demonstratives, like definite descriptions, should be given Russellean treatment. Jeffrey King (2001), for example, argues for just such a conclusion. However, there is an important difference between *complex* demonstratives and *simple* demonstratives. An example of a complex demonstrative is "that man drinking a martini" in (13):

(13) That man drinking a martini is drunk.

Notice that the noun phrase in (13) is the entire expression "that man drinking a martini." A simple demonstrative, however, is like "that" in (14):

(14) That is suspicious.

Notice that in this case, "that" just is the entire noun phrase. This is why Kaplan's notion "dthat" is helpful with respect to *simple* demonstratives; it illuminates how it is that context can help determine a referent in particular propositions.

As far as my interests in this paper are concerned, I am only worried about simple demonstratives, not complex ones. And as far as I can tell, all of the recent attempts to give a Russellean treatment of demonstratives are only concerned with complex demonstratives.[22] So until some plausible argument surfaces for thinking that *simple* demonstratives should be given Russellean treatment, I am unbothered by these sorts of considerations. Moreover, it is plausible that there is more than one way to do what I have done here—that is, any linguistic strategy that secures directly referring terms would have done the job. So even if it turns out that there are arguments for thinking that we should be Russelleans about simple demonstratives, this will not be enough to circumvent the stronger claim of this paper; such

[22] Indeed, King (2001: 171) maintains that "Kaplan himself was more concerned the word 'that' occurring by itself as a noun phrase ('That is a planet') than with [complex demonstratives]."

a move would have to eliminate all alternative methods of getting to the same point as I have made here.

5. Concluding Remarks

I have presented a slingshot argument, parallel in structure to Neale's, using Kaplan's notion of 'dthat'. The point of doing this was to show that if Neale's slingshot is valid, then so is the revised slingshot, but—unlike Neale's version—no theory of descriptions can save us. So either Neale's original argument is invalid, or else we have successfully rearmed the slingshot.

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