An argument concerning the unknowable

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Williamson has forcefully argued that Fitch's argument shows that the domain of the unknowable is non-empty. And he exhorts us to make more inroads into the land of the unknowable. Concluding his discussion of Fitch's argument, he writes:

> Once we acknowledge that [the domain of the unknowable] is non-empty, we can explore more effectively its extent. . . . We are only beginning to understand the deeper limits of our knowledge. (Williamson 2000: 300–301)

I shall formulate and evaluate a new argument concerning the domain of the unknowable. It is an argument about (un)knowability. More specifically, it is an argument about what we can(not) know about the natural numbers. Since the domain of discourse will be the natural numbers structure, the notion of knowability can for the purposes of the argument be identified with a priori knowability or – which amounts to the same thing – absolute provability (as opposed to provability in an antecedently given formal system).

Suppose, for a *reductio*, that there exists a property θ of natural numbers such that it is provable that for some natural number n, $\theta(n)$ is true but unprovable. Then, by the least number principle, there must be a smallest such natural number n. Then there provably exists exactly one smallest number n such that $\theta(n)$ is true but unprovable. Then it is provable that the smallest n such that $\theta(n)$ is true but unprovable is true but unprovable. But then $\theta(n)$ is both provable and unprovable. But this is a contradiction. So there can be no property of natural numbers $\theta(x)$ such that it is provable that for some number n, $\theta(n)$ is true but unprovable.

This argument is not specifically tied to the structure of the natural numbers. It is clear that a similar argument can be formulated for every mathematical domain for which we have a definable well-ordering. The structure of the (finite and transfinite) ordinal numbers constitutes one such domain. In the argument, no specific assumptions seem to be made about the property $\theta(x)$. If the description argument is valid, then its conclusion holds for purely arithmetical properties of natural numbers as well as for properties that also involve the notion of a priori knowability.

Because reasoning about a definite description ('the smallest n such that $\theta(n)$ is true but unprovable') is a crucial component of the argumentation,

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I shall call it the *description argument*. The principle that is needed to make the argument go through is the following:

> If it is provable that a given property $\phi(x)$ stated in the language of arithmetic plus the concept of knowability is uniquely satisfied, then there is a description term $\tau x\phi(x)$ ('the ϕ') such that $\phi(\tau x\phi(x))$ holds.

Intuitively, $\phi(\tau x\phi(x))$ says that the unique ϕ has the property ϕ.

Thus in the description argument, a definite description is treated as a *term*. Russell (1905) famously maintained that definite descriptions should not be logically treated as terms. Smullyan later showed how Russell's take on definite descriptions allows one to give a forceful reply to Quine's objections against quantified modal logic. Quine famously alleged that from the premises 'It is necessary that 9 is identical with 9' and '9 is the number of planets', Leibniz's law on the substitutivity of identicals allows us to draw the objectionable conclusion 'It is necessary that 9 is the number of planets'. Hence, Quine (1953) says, necessity is an intractable notion. Smullyan (1948) deftly replied that if the definite description 'the number of planets' is given a Russellian treatment, the objectionable conclusion (in its *de dicto* reading) just does not follow from the premisses. A reply to the description argument can be given which is similar to Smullyan's reply to Quine's objections against quantified modal logic. The description argument simply does not go through if descriptions are not treated as terms but are contextually analysed away.

This may be all right as far as descriptions occurring in the context of the notion of necessity go. And Russell may even be right that in natural language definite descriptions *never* logically function as terms. But it has since long been known that *extensional* open sentences do not lead to problems similar to the ones raised by Quine. So for extensional uniquely satisfied formulae description terms can safely be coined. If this is not the way natural language works, then we may simply invent a new kind of terms that are governed by the description principle and that are allowed in all extensional contexts. The question is how matters stand for knowability contexts. After all, the only intensional notion occurring in the description argument is the notion of a priori knowability. There is a legitimate question why we could not introduce a new kind of expressions which do function as terms which are governed by a meaning postulate such as the description principle given above, and which are allowed to occur in the context of the notion of a priori knowability. What is there to stop us? If by using these expressions in accordance with the meaning postulate we could never be led from truth to falsehood, then the description argument is still valid. After all, in this article we are interested in obtaining structural knowledge about the unknowable, rather than in faithfully representing the meaning of natural language expressions. And for all we have been told so far, we have every reason to think that the description principle governing the introduction of such description terms is sound.[1]

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Dispositional monism, relational constitution and quiddities

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1. Introduction

Let us call *dispositional monism* (DM) the view that all natural properties have their identities fixed purely by their dispositional features, that is, by the patterns of stimulus and response in which they participate. DM implies that natural properties are *pure powers*: things whose natures are fully identified by their roles in determining the potentialities of events to cause or be caused. As pure powers, properties are meant to lack *quiddities* in Black's (2000) sense. A property possesses a quiddity just in case its identity is fixed by something independent of the causal–nomological roles it may enter into. Paradigmatically, a categorical property is thought of as a property whose identity is fixed by a quiddity (Bird 2006; Black 2000; Mumford 2004).

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