Jody Azzouni Talking about Nothing: Numbers, Hallucinations and Fictions. Oxford and New York: Oxford University Press 2010. 288 pages US\$74.00 (hardcover ISBN 978-0-19-973894-6); US\$29.95 (paper ISBN 978-0199937684)

Suppose you are inclined to think that sentences like the following are literally true without qualification, and that their logical forms are just what they appear to be:

S1: Gailus is a hobbit that Tom hallucinates regularly. S2: Some fictional characters (like Sherlock Holmes) are more interesting than others (like Irene Adler).

S3: The tapestry makers thought about unicorns.

Then you should be puzzled: for do not singular truths like S1 require that 'Gailus' refer to something possessing the property of being regularly hallucinated by Tom? Do not quantified truths like S2 require that there be witnesses to the quantifier? Do not relational truths like S3 need relata? Yet, intuitively, Gailus, Sherlock Holmes, Irene Adler and unicorns do not exist. There is nothing to possess the property ascribed in S1, there are no witnesses to the quantifier in S2, and there is no second term to the relation ascribed in S3. The mystery is how these sentences can apparently be true.

There are at least three approaches to explaining it. One is to say that sentences like those displayed are not literally true, or are not true without qualification. For example, perhaps S1 is a careless way of expressing the thought that Tom regularly hallucinates that Gailus is a hobbit, and this can be true since 'Tom hallucinates that p' can be true even when p is not. Or perhaps such sentences belong implicitly or implicitly to a pretense.

Another approach is to introduce exotic—'bizarre' (254)—objects to be referents and witnesses: they are nonexistent or nonactual or nonconcrete things like Gailus, fictional characters, and unicorns. These are the kinds of thing that Tom hallucinates or tapestry makers think about, or which can be compared for relative interest, even though they are not part of reality as we customarily think of it.

A third approach is to decline to offer an explanation, simply insisting that our linguistic practices (and even our scientists) recognize sentences like those displayed as true; so they must be true; and there's an end of it. Of the three approaches, Azzouni's is closest to the third. He is certainly explicit in rejecting both of the other approaches.

He makes a contribution to explaining S1: he endorses the view that empty but genuinely singular thought is possible. Such thought counts as genuinely singular because

it is not descriptive, and may be properly used independently of whether there is a corresponding referent, and of whether the thinker believes there is. If there is in fact no referent, the thought is empty. At the level of language, a companion thesis is that empty names can have a perfectly intelligible yet non-descriptive role. Otherwise put, Azzouni distinguishes between a thought or expression being singular and its being object-involving.

He refers to this position as 'overlooked' (48), 'unnoticed' (49) and 'until now unrecognized' (60), but it can be traced back at least to the middle ages (Ockham, Buridan), to such thinkers as Prior, Grice, Bencivenga and Smiley in the latter part of the past century, and to too many theorists to list in the present century (all those who have taken the idea of free logic seriously, including Tyler Burge, claimed by Azzouni [49] to belong to the opposing camp). But the position does not fully dissolve the mystery. It can explain how a sentence like S1 can be intelligible, but has nothing to offer on the question of how it can be true. And it does not directly address examples not involving singularity, for example, quantificational ones.

Indeed one standard form of free logic, negative free logic, insists that any simple sentence with an empty singular term is false: truth for a unary simple sentence requires the singular term to have a referent that possesses the property expressed; falsity is absence of truth. This allows for plenty of truths containing empty names (something Azzouni seems not to appreciate [157]), but only when the names are embedded under operators (like negation or verbs of propositional attitude) that can form truths out of falsehoods. So although the familiar free logical approach provides a solution to part of the mystery, namely the intelligibility of sentences containing empty names, it is far from a full account: there seem to be *true* simple sentences containing empty names (like S1), and the account has nothing directly to say about problematic quantified sentences.

How does Azzouni address these remaining mysteries? At p. 156, having presented the problematic facts, he asks '*But how*? some may wonder.' 'This may all seem to be a little too much like magic' (157). We are less than a page from the end of Part 1, and what remains is devoted to the inadequacies of alternative explanations, rather than to a positive account. To this reader it still looked like magic: the problematic data were presented, but not explained.

The question is still alive on p. 220. Since Azzouni is a nominalist, and so denies that there are numbers, he says that the truth of 'Nine is a number' does not require there to be such a number. Referring to this sentence, he asks, 'What on Earth can its truth conditions look like, therefore?'. He describes some answers he rejects, and the section ends. He goes on to claim that one can give homophonic truth conditions even for sentences with empty names, but this does not begin to explain what needs explaining, namely how such sentences can be true. '[T]he concern is with what happens...when the term b^{M} [a metalinguistic equivalent of the object language empty singular term 'b'] fails to refer. ...It seems we get just the result many philosophers think we have to get when empty names show up: sentences without truth values' (235).

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The problem of how empty singular terms can feature in truths is matched by the problem of how there can be unwitnessed existential quantificational truths. Azzouni addresses the latter by declaring that some quantifiers are 'ontologically neutral': that is, a sentence governed by such a quantifier can be true even if there is no witness. But the problem was how this could be so. One does not solve a problem by restating it.

Azzouni attacks alternative approaches, especially those that posit nonexistent objects, and those that hold that the problematic alleged truths are only true if understood as implicitly within the scope of an intensional expression of some kind. He gives no reason not to accept Meinongian views, and indeed his positive views sound (as he realizes) suspiciously Meinongian: 'The varying domains of these languages [for scientific theories] contain different kinds of items (most of which don't exist...)' (172); 'token physicalism, therefore, must fail because nonexistent entities (hallucinated objects that present as hobbits) cannot be composed of elements from the domains of discourse of the physical sciences' (186); 'these discourse-domains will contain large numbers of nonexistent entities' (200). Yet, he assures us, 'nothing even faintly Meinongian is in the offing' (226), thanks to the ontologically neutral use of quantifiers. But how should we understand this use? In this book, Azzouni does not say (though perhaps he does in one or more of the 19 of his other publications listed in the bibliography). There's a simple problem: If I say that there is beer in the fridge, and you go to the fridge and find none, it would be silly for me to respond: 'Just as I told you: my quantifier was ontologically neutral'. Just as silly, indeed, as to respond: 'I was only talking about nonexistent beer'.

Azzouni also attacks approaches that attempt to treat the problematic truths as (perhaps implicitly) in the scope of an intensional expression. He points out, in my opinion correctly, that the following are not equivalent:

S4: Every hobbit that S hallucinates either resembles some movie character in a movie that S has seen, or it resembles a hobbit in the calendar poster that S keeps by his bed.

S5: S hallucinates that every hobbit either resembles some movie character in a movie that S has seen, or it resembles a hobbit in the calendar poster that S keeps by his bed.

But that does not show that there is no adequate intensionalist account. Intensional operators are very various. (For example 'In the fiction, p' has different truth conditions from 'According to the fiction, p'.) S4 seems to me equivalent to

S6: In S's hallucinations, every hobbit either resembles some movie character in a movie that S has seen, or it resembles a hobbit in the calendar poster that S keeps by his bed.

The 'In' intensional operators allow a more external perspective than the 'According to' ones, and also permit more externality than the 'He hallucinated that' operator.

Towards the end, Azzouni says that his 'external discourse demand' is the centerpiece of the book (215), so I should not close without mentioning it. An early formulation, applying it to talk of hallucinations, is this: 'statements directed toward hallucinated objects not only have to be pretence-truth-apt (truth-apt within the pretence), they also have to be truth-apt vis-à-vis statements outside of the pretence context' (51). (Note: 'truth-apt' seems not to be used as in debates about expressivism, but as roughly equivalent to 'true'.) He claims that whether 'a particular hobbit is wearing green and not blue, or [whether] he resembles a famous actor...may bear evidentially on one or another neurological theory' (80).

This is surprising. First, it seems clear to me that the most the neurologist could care about is how things seemed to the hallucinating subject. The relevant facts are not whether hobbits are dressed in green or blue, but what the hallucination is like for the subject. Second, it seems that the external discourse demand is simply a denial of fictionalism. A fictionalist like van Fraassen, for example, says that we can properly pass from macrophysical data, via *falsehoods* about elementary particles (for there are in reality no such things), to justified macrophysical predictions. Since fictionalism is such a prominent option in ontology, especially in the philosophy of mathematics (thanks to Hartry Field), it is astonishing that it gets no mention in this book, and that the book's unargued 'centerpiece' apparently flatly contradicts it. (A fictionalist view seems to be mentioned on the penultimate page, though I am not clear about its dialectical status: 'something rather subtle is called for, descriptions of how we use carefully chosen falsehoods to deduce truths about things' (253), but by then it's too late for this idea to have much role.)

Gilbert Ryle is reported to have advised contributors to *Mind* to avoid footnotes: 'If it's worth saying, put it in the text; if it's not worth saying, don't say it.' Azzouni's text bristles with footnotes: 560 of them in 254 pages. One does not get the impression that making the book a pleasure to read was a high priority for the author.

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