Speech acts, attitudes, and scientific practice
Can Searle handle ‘Assuming for the sake of Hypothesis’?* 

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There are certain illocutionary acts (such as hypothesizing, conjecturing, speculating, guessing, and the like) that, contrary to John Searle’s (1969, 1975, 1979) speech act theory, cannot be correctly classified as assertives. Searle’s sincerity and essential conditions on assertives require, plausibly, that we believe our assertions and that we are committed to their truth. Yet it is a commonly accepted scientific practice to propose and investigate an hypothesis without believing it or being at all committed to its truth. Searle’s attempt to accommodate such conjectural acts by claiming that the degree of belief and of commitment expressed by some assertives “may approach or even reach zero” (1979:13) is unsuccessful, since it evacuates his thesis that these are substantive necessary conditions on assertives of any force. The illocutionary acts in question are central to scientific activity and so cannot be plausibly ignored by a theory of speech acts. The problem is not limited simply to Searle’s theory, since even theories which depart markedly from Searle’s in other respects are often committed to similar characterizations of assertion.

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1. Introduction

John Searle’s (1969, 1975, 1979) classic and influential theory of speech acts, subsequently developed by Searle and Vanderveken (1985), has it that all acts can, allegedly, be divided into one (or some combination) of five basic categories. We can (1) assert (make claims about how the world is; that some representation matches an actual state of affairs), (2) direct (try to get others to do things), (3) commit ourselves to some course of action; (4) express feelings; and (5) create or modify social
relations by performing certain *declarations*. Searle’s predecessors, J.L. Austin and Ludwig Wittgenstein, maintained that there are a great many (perhaps on the order of ten thousand or even limitless) uses of language. So the organizational clarity achieved by grouping, in a principled and systematic way, what would otherwise be a bewildering variety of speech acts under these five categories is attractive.

While Searle’s analysis is not, of course, the only account on offer, it is widely accepted and he and others have continued to develop and refine the framework as part of an ongoing research program. Indeed, the success the account has enjoyed and its track record in dealing with potential challenges has led some to think that it lays bare certain insights about the formal structure of language. As Searle puts it, “Ilocutionary acts are, so to speak, natural conceptual kinds” (Searle 1979: ix). Searle (1983) drew heavily on his speech act theory in developing a closely parallel account of “the formal structure of intentionality” in the philosophy of mind and this work has influenced a lot of reflection on propositional attitudes.

An adequate theory must fit the phenomena, however, and Searle himself has always held up descriptive accuracy as a touchstone for judging the adequacy of his account:

> The method I use in this essay is in a sense empirical. I simply look at uses of language and find these five types of illocutionary point, and when I examine actual discourse I find, or at least claim, that utterances can be classified under these headings (Searle 1979: viii).

If there were, then, some large and important class of discourse which the account handled at best only inelegantly or in a contrived way, the challenge posed by such a potential counterexample would merit careful consideration. Scientific discourse and the associated cognitive attitudes adopted by working scientists are obviously areas for which any tenable theory of speech acts or intentionality must account. However, when we examine the role that hypothesizing and conjecture play in actual scientific activity, Searle’s account founders. In order to explain the problem clearly, I will first present the relevant aspects of Searle’s speech act theory and then discuss the question: Do items like “guess”, “speculate”, “conjecture”, and “hypothesize”, always, or even typically, belong on the list of assertives? My argument is that items like conjecturing, hypothesizing, guessing and the like often play a role in scientific discourse that serves neither to assert that an hypothesis is true nor to express such a belief and therefore do not meet the criteria that Searle and others set out for assertives.
2. Relevant aspects of Searle’s speech act theory

At the heart of both Searle’s speech act theory and his account of intentionality or attitude ascription in the philosophy of mind is the assumption that speech acts and attitudes can be factored into two components: (i) act or attitude state types (illocutionary force or psychological mode) and (ii) content. My belief that it is raining (here, now, in some context) involves both representing the world as being a particular way and the assessment that this representation matches or correctly describes the world. Similarly, if I assert that protons have a mass of about $1.672623 \times 10^{-31}$ kg, this proposition is either true or false and the illocutionary force or overall intention of my utterance is to make an assertion. The illocutionary point or communicative purpose of my statement about protons is to commit to the truth of the proposition and to express my belief in its content.

Attitudes such as belief and linguistic acts such as assertion are situated primarily within an activity aimed at forming correct opinions about reality and avoiding incorrect opinions. Assertives, as Searle defines them, are speech acts uttered with the aim of stating what is the case. As such, assertives commit their utterers to the truth of their content. Thus their content must always have truth-value or be representational in character:

The point or purpose of the members of the assertive class is to commit the speaker (in varying degrees) to something’s being the case, to the truth of the expressed proposition. All of the members of the assertive class are assessable on the dimension of assessment which includes true and false (Searle 1979: 12–13).

What we are after, when we form epistemic opinions, is a sober assessment of how things stand in the world irrespective of how we would like them to be. Assertives, then, have a representation-to-world direction of fit: With such goals in mind when we recognize a mismatch we change the representational content, like mapmakers who insist on revising their maps to conform to the terrain rather than the other way around.

The fact that we often use speech acts to express and communicate the psychological states that we adopt toward the content of our intentional attitudes gives speech acts what Searle calls sincerity conditions. A speech act is sincere exactly when the subject has the intentional state expressed by the speech act and insincere otherwise. A promise is only sincere if the person making the promise also has an accompanying intention to carry out what is promised. To assert that $p$, is to imply that one believes that $p$.

The framework developed by Searle and Vanderveken provides an attractive strategy for characterizing various nuances in our speech acts and cognitive postures. The illocutionary point, though only one component of illocutionary
force, largely determines the type of act that it is (assertive, directive, commis-
sive, expressive, or declarative) and how it is to be classified according to Searle’s
taxonomy. The approach looks initially promising: why not use the five basic il-
locutionary acts to provide recursive definitions of all the more complex attitudes
that fall under that category, subtracting or adding features from these basic acts
as needed (Vanderveken 1990: 125)? If we consider long lists of attitude verbs of-
ten associated with assertive discourse, we find that some of these items, such as
“claim”, “contend”, “declare”, “state”, and “maintain” are more or less synonymous
with “assert”. Others, such as “accuse”, “lament”, “warn”, and “retract” carry ad-
ditional illocutionary force or presuppose more conversational context but can
be characterized fairly cleanly. To accuse someone is to publically assert that they
are responsible for some state of affairs and that that state of affairs is bad (Searle
and Vanderveken 1985: 190).

3. The problem of classifying conjectural acts

So what is the alleged difficulty? The problem, stated simply and directly, is this:
There are certain illocutionary acts (such as hypothesizing, conjecturing, speculating,
guessing, and the like) that, contrary to what Searle claims, cannot be correctly clas-
sified as assertives. Searle regards the illocutionary acts in question as assertives
while at the same time maintaining that to make an assertion involves both ex-
pressing a belief and undertaking a commitment to the truth of the representational
content, neither of which, I shall argue, are required for acts such as hypothesizing.
More specifically, Searle holds both of the following:

(1) Among the necessary conditions for the successful and non-defective acts of
assertion that $p$ by a subject, $S$, are
   a. that $S$ believes that $p$ (a sincerity condition) and
   b. that $S$ undertakes a commitment to the truth of $p$ (an essential
      condition, given the illocutionary point of assertion).

(2) Acts like “guessing”, “speculating”, “conjecturing”, and “hypothesizing” that $p$
should be classified as assertives.
The problem is that when we attend to the role that conjecturing, hypothesizing and the like play in the actual practice and discourse of real scientists, it is smashingly clear that many acts such as those listed in (2), call them conjectural acts for short, need not express an underlying attitude of belief nor need they involve a commitment to the truth of the conjecture or hypothesis. Searle’s sincerity condition on assertives requires that one believe the content of the assertion, yet it is a commonly accepted scientific practice to propose and investigate a hypothesis without believing it. Searle’s essential condition on assertives requires a commitment to the truth of the content, yet one can conjecture without being at all committed to the truth of the conjecture.

It is clear not only that Searle is committed to (1) but, moreover, that it is central to his account of assertives. On his view, “the sincerity condition [on assertion] is that he must believe it to be true, and the essential condition has to do with the fact that the proposition is presented as representing an actual state of affairs” (Searle 1969:64; see also Searle 1979:62). There are indeed some very good reasons for accepting (1) or at least something like it. With respect to (1a), Searle’s claim that “to assert, affirm, state (that $p$) counts as an expression of belief (that $p$)” seems correct for genuine assertions (Searle 1969:65). To believe $p$, at least roughly, is to regard $p$ as true; to hold that $p$ is the case. When one asserts that $p$ one is putting $p$ forward as true and, given the norms of ordinary discourse, it would seem that one ought not to do this unless one regards $p$ as true. That is why, as Moore pointed out, first person performative utterances of the form “$p$, but I do not believe that $p$” strike us as paradoxical or pragmatically incoherent. Other major contributors to the classification of speech acts are also committed to this. Bach and Harnish require that all speech acts in Austin’s category of truth-valued “constatives” (statements of fact), which corresponds roughly to Searle’s assertives, “express the speaker’s belief and his intention or desire that the hearer have or form a like belief” (Bach and Harnish 1979:41). Vanderveken takes it that “all assertive illocutionary forces have the sincerity condition that the speaker believes the propositional content” (Vanderveken 1990:117; see also Searle and Vanderveken 1985:18 and Alston 2000:45). Grice takes belief to be a conversational implicature of assertion, given expectations as part of common discourse that we won’t assert what we disbelieve or that for which we lack adequate evidence (Grice 1989:27). Williamson (1996, 2000) goes even further, insisting that knowledge as opposed to mere belief is a norm of assertion in the sense that, one who asserts that $p$ but does not know that $p$ is subject to criticism for breaking the rules of ordinary discourse.

The idea that through the act of asserting $p$, one acknowledges or undertakes a commitment to the truth of $p$ is also quite plausible. Even speech act theories that diverge radically in other respects often find agreement on something like (1b). Indeed, it is now common to develop this idea even further and to hold that through
assertion we represent ourselves as knowing or at least having reasonable grounds for believing the proposition in question. Since one’s public assertions seem to invite others also to believe that \( p \) is the case, at least arguably, one ought to take responsibility for the assertion by being prepared to offer evidence and reasons for \( p \) when pressed and so on (see Grice 1989; Brandom 1994; Alston 2000).

Searle is also explicitly committed to (2). When he gives examples of speech acts to be classified as assertives, “guessing”, “speculating”, “conjecturing”, and “hypothesizing” appear on those lists (Searle and Vanderveken 1985:38, 182–183, 187). Nor is he alone in such judgments of classification (e.g., Vanderveken 1990:169, 180; Alston 2000:34). It is also quite clear, by process of elimination, that assertives are the only category under which many such acts could fall in Searle’s taxonomy. Conjecturing, for example, does not require that I try to get others to do things, it need not be promissory or expressive of feelings, and it isn’t like dubbing someone a knight, etc.

In order to see more clearly why the attempt to hold both (1) and (2) is problematic and to better appreciate the significance of the problem, we need to see how it fares when we consider cases of real scientific discourse and activity.

4. Cases of real scientific discourse and activity

When we attend to the epistemic and practical judgments that real scientists make about their theories, we find them quite naturally and effortlessly adopting complex cognitive attitudes that display an extraordinary richness, nuance, and variety. Despite the fact that qualified, partial, and tentative attitudes and expressions of commitment are a commonplace, our understanding of them remains oversimplified and underdeveloped (McKaughan 2007). For reasons of space, I will offer for your consideration just three instances of scientific judgment.

In *The Astonishing Hypothesis*, Crick steps back from the neurological details to consider a broader picture of consciousness and asks: “In spite of all such uncertainties, is it possible, after considering all these very diverse facts and speculations, to sketch some overall scheme, however tentative, that might act as a rough guide through the jungle ahead of us? Let me throw caution to the winds and suggest one possible model” (Crick 1994:251). Having offered such a proposal, Crick immediately distances himself from the model:

So much for a plausible model. I hope nobody will call it the Crick (or the Crick-Koch) Theory of Consciousness. While writing it down, my mind was constantly assailed by reservations and qualifications. If anyone else produced it, I would unhesitatingly condemn it as a house of cards. Touch it, and it collapses. This is because it has been carpentered together, with not enough crucial experimental
evidence to support its various parts. Its only virtue is that it may prod scientists and philosophers to think about the problems in neural terms, and so to accelerate the experimental attack on consciousness (Crick 1994:252).

Crick’s posture here vividly embodies the truth in Steven Weinberg’s observation that “It is a common error to suppose that scientists are necessarily devoted advocates of their own ideas” (Weinberg 1992:102). He clearly thinks that the model is worth entertaining and might well help advance further research in the field. But he neither unqualifiedly believes it nor is he committed to the truth of the model. The suggestion is offered for public consideration and critique, but is clearly not intended as a claim that it is supported by the currently available evidence. Were someone to insist that Crick was violating an expectation or norm of discourse unless Crick was able, when pressed, to provide adequate evidence for the truth of the model we should say that the person had misunderstood Crick’s use of the model in submitting this idea for scrutiny by the scientific community.

Consider next the relationship between quantum mechanics and general relativity. Both of these fundamental theories fit the empirical evidence exceptionally well and surely count among the best theories that contemporary science has to offer. Clearly, we can expect to find physicists adopting some sort of positive epistemic appraisal of these theories. Yet, there is an extensive literature on whether or not there are deep conceptual tensions between these theories and how such tensions could ultimately be resolved. If we thought that the two theories, at least as currently formulated, were logically incompatible with each other, then clearly the appropriate attitude will be something other than the full belief that both of them are true.

The project of developing a successor theory that reconciles these theories is, of course, an active area of cutting edge research in theoretical physics. Despite some of the conceptual and mathematical features that make some of the candidates for a unified approach to quantum gravity exciting, Carlo Rovelli thinks that many of the current research programs put forward during this interim period are speculative, incomplete, worth pursuing, uncorroborated empirically, and a long way from the final story:

The tentative theories we have, such as loop gravity, strings or noncommutative geometry, are courageous attempts that are worth pursuing but badly incomplete. Loop gravity has no ambition of being a theory of everything: it is just a background-independent theory of quantum space-time. In string theory, a background independent formulation seems as far away as ever. More crucially, none of these speculative theories has received any empirical support from experiment. Worse, phenomena such as proton decay, supersymmetric particles and signs of extra dimensions were predicted, but haven’t shown up. Rarely have we been so far from a theory of everything (Rovelli 2005:259a).
Finally, even in prose that appears to consist of straightforward declarative statements, an author’s implicit attitudes are often more complex than that of simple belief. Steven Weinberg’s *The First Three Minutes* is full of assertions like “At about one-hundredth of a second, the earliest time about which we can speak with any confidence, the temperature of the universe was about a hundred thousand million \((10^{11})\) degrees Centigrade” (Weinberg 1988: 5). Could the attitude he adopts toward such statements be anything other than that of belief that it is true? Though Weinberg senses that he tends to write with more self-assurance than some readers will take the current evidence to license, it is clear that what he is doing is exploring the consequences of the cosmological theory he favors:

In following this account of the first three minutes, the reader may feel that he can detect a note of scientific overconfidence. He may be right…. The standard model of the early universe has had some successes, and it provides a coherent theoretical framework for future experimental programs. This does not mean that it is true, but it does mean that it deserves to be taken seriously. Nevertheless, there is one great uncertainty that hangs like a dark cloud over the standard model…. In my opinion, the appropriate response to such uncertainties is not (as some cosmologists might like) to scrap the standard model, but rather to take it very seriously and to work out its consequences thoroughly, if only in the hope of turning up a contradiction with observation (Weinberg 1988: 119–120).

Even if Weinberg thinks that the standard model is the best theory we have currently got in this domain, his concern isn’t, in the first instance, to put forward propositions and proportion his assent to the evidence. It isn’t at all clear that what he is doing is best characterized as asserting that the standard model is in fact true, but doing so with something less than full confidence. Instead, his attitude is more relaxed. He acknowledges the highly speculative nature of the ideas under consideration, but he sees it as important to the progress of science that theories with some fairly definite content be put forward bravely for examination.

Here is the point of these examples for our present discussion. Without pretending to have offered any sort of thorough analysis of these brief but concrete illustrations, in each case the recognition of an attitude other than belief that the theory in question is true clearly makes a difference for our appreciation of what is going on in the episode. In scientific practice and inquiry, cognitive attitudes other than belief regularly and quite appropriately serve as the underlying psychological states that accompany speculating, conjecturing, and hypothesizing.

There is, then, a serious problem with requiring that the employment of hypotheses in science express an underlying attitude of belief or commitment to the truth of its representational content. Belief, where it is appropriate at all in the context of scientific inquiry, is primarily an attitude that we might take toward the finished product of inquiry.³ When I assume something as a working hypothesis,
although I may be interested in investigating how well it represents the world, in an important sense I need not be asserting it at all. Speculating seems to involve considering, inspecting, reasoning about, or thinking over some more or less definite proposal in circumstances in which one recognizes that the evidence for or against it (if there is any) is far from conclusive. Not only can hypotheses be entertained without endorsing them, using a representation as a tool for inquiry or interim proposal is compatible with a scientist being committed to its rejection. One can, for example, hypothesize that \( p \) while hoping that experimental investigation will lead to a better theory even when one has the full belief that \( p \) is false. Indeed, scientists often investigate and employ theories that they not only do not believe, but that they know are false. We see examples of this in the continued use of classical mechanics for some predicative or explanatory purposes. When NASA engineers decide to rely on Newtonian mechanics for a trip to the moon or to predict the trajectory of a rocket, this surely does not imply that they believe that Newtonian mechanics provides a true or even empirically adequate account of all relevant physical phenomena. Rather, some more qualified belief that “it’s good enough for government work” or that in some sense “it’s approximately true” is in play and that there is no need to correct for relativistic effects in this context. These are not weak affirmations of the representational content of the theory. Scientists use the theory with the full awareness that it is strictly speaking false, while believing that the predicted values are close enough for the purposes at hand. Similarly, scientific idealization involves the purposeful employment of assumptions known not to be true of the system of interest (e.g., treating bodies as point masses, surfaces as frictionless planes, non-isolable systems as isolated systems) or, at the very least, making assumptions known to hold only in a limited set of circumstances. Or again, if I ask you to assume \( p \) for the sake of argument, I am not asking you to believe that \( p \) but rather to consider what would follow if \( p \) were the case. Similar points could be made about attitudes expressed with verbs like “guess”, “speculate”, “suggest,” “forecast”, “predict”, “suspect”, and the like.

Some philosophers of science, such as C.S. Peirce, have even gone so far as to suggest that “really the word belief is out of place in the vocabulary of science” (Peirce 1898/1998:85); that “what is properly and usually called belief … has no place in science at all” (Peirce 1901/1998:33). While this may go too far in the opposite direction, the contrast with Searle’s characterization is stark. Consider also the attitudes displayed in Karl Popper’s influential philosophy of science. Popper (1959, 1963) famously defends a methodology which combines the proposal of bold conjectures with ruthless attempts at experimental falsification while eschewing inductive justification. The beliefs about corroborated theories that Popper takes to be most appropriate, however, are not even qualified commitments to the truth of the hypothesis, but rather beliefs such as that the hypothesis has so
far stood up in the face of rigorous attempts at falsification. Indeed, he had very little to say about positive epistemic commitments beyond some cryptic remarks about corroboration and verisimilitude. He famously avoided asserting that corroborated theories are true and set about trying to explicate a precise sense in which one false theory could be closer to the truth than another. Other things being equal, there is a tradeoff between exactitude or informativeness of content and the degree of confidence we can place in an assertion (Duhem 1906: 178–179; Rescher 1999: 31, 2006: 1). Thus, if we were to follow Popper in valuing empirically testable conjectures that are maximally contentful and informative, the ‘best’ (boldest) conjectures would also tend to be those to which we assign the lowest initial probability.

Scientists can and, of course, often do believe and assert theories. But we should not allow our admiration for the most visible hard won achievements produced by scientific inquiry to lull us into an oversimplified picture of attitudes familiar to practicing scientists, particularly in the earlier stages of inquiry. Although my conjecture that \( p \) has as its satisfaction conditions that \( p \) actually be the case, none of these attitudes require that one believe that the representational content of the attitude corresponds to the world. Postures like conjecture are important precisely because they are less committed and more tentative in that regard. These acts are not unusual, defective, marginal, or in any way out of place in the ordinary practice of science and yet they do not meet the necessary conditions Searle has laid out for assertives. Given that a scientist conjecturing or hypothesizing that \( p \) can also do so sincerely, even without believing that \( p \) or committing to the truth of \( p \), it looks like Searle is in a bind.

5. A way out? A partial diagnosis

How, then, do Searle and Vanderveken deal with acts of conjecture, assuming for the sake of hypothesis, guessing, and the like? Searle, Vanderveken, and others propose that we analyze conjecture still as a commitment to the truth of its content, still as an expression of belief, but as an assertive that expresses a belief of weaker degree of confidence or commitment than, say, a claim or bald assertion.

The illocutionary force of a conjecture differs from assertion in that the speaker who conjectures commits himself to the truth of the propositional content with a weaker degree of strength than the degree of commitment to truth of an assertion (Searle and Vanderveken 1985: 20).

Despite a surface plausibility and attractiveness, this characterization is descriptively inadequate for the same reason we saw above: in conjecturing one need
not be at all committed to the truth of the conjecture. Again, one might — without any inconsistency or even pragmatic incoherence — fully recognize that the model one currently adopts as a working hypothesis is demonstrably false and inadequate in quite specifiable respects but also be committed to exploring and investigating it for the purpose of developing better models.

We can see that there is a difficulty here by pressing the question: How seriously are we supposed to take the requirement that belief is a sincerity condition on assertives? In some places it looks like we are not supposed to take the requirement at all seriously, because it is compatible with a zero degree of belief or commitment! Commenting on assertives, Searle writes:

The direction of fit is words to the world; the psychological state expressed is Belief (that \( p \)). It is important to emphasize that words such as “belief” and “commitment” are here intended to mark dimensions, they are so to speak determinable rather than determinates. Thus, there is a difference between suggesting that \( p \) or putting it forward as a hypothesis that \( p \) on the one hand and insisting that \( p \) or solemnly swearing that \( p \) on the other. The degree of belief and commitment may approach or even reach zero, but it is clear or will become clear, that hypothesizing that \( p \) and flatly stating that \( p \) are in the same line of business in a way that neither is like requesting (Searle 1979: 12–13 italics in original).

Searle’s response seems to be that suggesting, hypothesizing, and stating are in the same “line of business” in the sense that they share the same illocutionary point. They are not, for example, promises or attempts to get someone else to do something. Rather, as Searle sees it, they share the illocutionary point of representing the state of affairs that \( p \) as actual in the world (Searle 1979: 13; see also Searle and Vanderveken 1985: 38–39). I grant that their representational content will be truth-valued and that the acts have a representation-to-world direction of fit. But it is incorrect, for the reasons we have seen, to demand that hypothesizing that \( p \) must be either an expression of weak or unconfident belief that \( p \) (1a) or a weak commitment to the claim that the actual world is as \( p \) has it (1b). What, one wonders, is the force of requiring belief as a necessary condition on sincere assertion if some assertions are admittedly compatible with a degree of belief of zero? Even if we charitably take “degree of belief of zero” simply to mean complete absence of belief rather than being certain that not-\( p \) (full disbelief or even belief that \( p \) is necessarily false), it renders the necessary condition totally empty. To say that hypothesizing can be done with zero degree of belief or commitment is to say that the hypothesis need not be asserted at all.4

I regard this problem as a real defect in Searle’s taxonomy. Something has to give here. But if it is correct, as I have argued, that (1) and (2) are incompatible, how could conjectural illocutionary acts and their accompanying attitudes be accommodated? One route would be to keep the characterization of assertives (1) intact.
while abandoning the attempt to classify such acts as assertives (2). The challenge then would be either to analyze the sorts of conjectural acts under consideration by appeal to Searle’s other four basic categories or, more radically, by making some kind of fundamental revision to Searle’s taxonomy such as acknowledging another basic category of speech acts and attitudes which has yet to find adequate analysis in the literature. These acts do not seem to fall neatly under any of Searle’s other four basic categories (directives, commissives, expressives, or declaratives). Perhaps some of the sorts of postures discussed above could be analyzed as commissives or as some combination of commissive and assertive discourse, as in the case of “I am committed to further investigating $p$, even though I believe that $p$ is false” or as directives or as expressions of desires, as might be allowed on various interpretations of “why don’t you go ahead and look into $p$?” But whether all such acts and attitudes could be thus understood merits further consideration.

Another route would be to retain the claim that all conjectural acts are assertives (2) while modifying the characterization of assertives (1). This would seem minimally to require giving up the claim that belief is a sincerity condition on all assertions, including hypothesizing and the like and, indeed, an acknowledgment that such acts are compatible with the full belief that the hypothesis is false. Although even this option will involve some substantive modifications of Searle’s view, it strikes me as the least revisionary and most in keeping with the spirit of his work and it is the possibility that I shall explore further here.

It is clear that Searle presents (and intended to present) (1a) and (1b) as necessary conditions. They are put forward as part of a project of philosophical analysis in which each condition is a necessary condition for the successful and non-defective performance of the act: “The methodology that I had used for analyzing speech acts was to analyze the necessary and sufficient conditions for the successful and non-defective performance of the act” (Searle 2002:7; see also Searle 1969:22 and 54, 1991:89; Searle and Vanderveken 1985:5, 21, and 74).

Might the problem be avoided, however, by withdrawing the claim to have provided necessary and sufficient conditions and appealing to the Wittgensteinian notion of family resemblance? We can get some sense for how Searle might attempt to reply by examining what he says about challenges to his analysis of promising in *Speech Acts*.

One of the most important insights of recent work in the philosophy of language is that most nontechnical concepts in ordinary language lack absolutely strict rules. The concepts of game, or chair, or promise do not have absolutely knockdown necessary and sufficient conditions, such that unless they are satisfied something cannot be a game or a chair or a promise, and given that they are satisfied in a given case that case must be, cannot but be, a game or a chair or a promise. But this insight into the looseness of our concepts, and its attendant jargon of
"family resemblance" should not lead us into a rejection of the very enterprise of philosophical analysis; rather the conclusion to be drawn is that certain forms of analysis, especially analysis into necessary and sufficient conditions, are likely to involve (in varying degrees) idealization of the concept analyzed. In the present case, our analysis will be directed at the center of the concept of promising. I am ignoring marginal, fringe, and partially defective promises. This approach has the consequence that counterexamples can be produced of ordinary uses of the word "promise" which do not fit the analysis. Some of these counter-examples I shall discuss. Their existence does not 'refute' the analysis, rather they require an explanation of why and how they depart from the paradigm cases of promise making (Searle 1969:55).

While one should resist the temptation to go Wittgensteinian simply to sidestep counterexamples to one's philosophical analysis, the perfectly respectable idea here would be that "assertive" is a cluster concept with a list of criteria typically associated with paradigm examples but which need not all be satisfied by other instances. If we wanted merely to use a speech act theory as a loose but useful way of grouping a variety of more specific kinds of acts (e.g., claiming, hypothesizing, predicting, etc.,) under the umbrella term of "assertives", perhaps it is sufficient simply to point out that conjecturing can differ from straightforward claims in the ways that I have noted.

Several remarks about this option are in order, however. First, the price of taking this route would require backing off of claims to have provided necessary and sufficient conditions for the successful and non-defective performance of acts of assertion or perhaps a reappraisal of what the account achieves. Searle and Vanderveken describe their main goals as follows:

In carrying out the general project of illocutionary logic some of the main questions we will attempt to answer are: (I) What are the components of illocutionary force and what are the necessary and sufficient conditions for the successful performance of elementary illocutionary acts? (Searle and Vanderveken 1985:5)

Those familiar with the smorgasbord of logical symbols for material implication, "if and only ifs", and the like, that accompany the analyses put forward in Searle's subsequent work and the role that these play in efforts to axiomatize illocutionary logic and talk of a parallel logic of propositional attitudes can be forgiven if they worry: if the claim that these are necessary conditions is illusory, is not also much of the alleged explanatory wealth of the theory? Second, the cases of scientific activity under consideration are not just odd, marginal, or bizarre fictionalized cases. The challenge I have presented is anchored in concrete examples of actual scientific reflection and we are talking about practices at the center of scientific theorizing and can therefore not be plausibly be ignored by a putatively general and comprehensive theory of speech acts.
Still, I think that something along these lines is probably the most attractive way forward for those looking to resist major modifications to Searle’s analysis. I remain open to the possibility that some sort of friendly amendment to Searle’s account which accommodates scientific inquiry could be developed along these lines. As a starting point for thinking about how one might develop such a response, I shall offer a brief diagnosis of where it seems to me that Searle goes wrong.

Notice that Searle appeals to features of content, in addition to illocutionary point, as a convenient criterion for identifying assertives: “The simplest test of an assertive is this: can you literally characterize it (inter alia) as true or false” (Searle 1979: 13). If we look at content, we can easily understand the temptation to classify conjectural acts as assertives. Since one important scientific aim is the representation of nature, or at least the empirical phenomena, a great deal of scientific discourse is indeed representational in the sense that it has truth-value and involves putting representations forward for consideration with an interest in evaluating them semantically (with respect to the relations they bear to the world). Scientific theories, hypotheses, and models are paradigmatic representations. I quite agree that they are the sorts of things that can be evaluated with respect to truth and falsity, they can stand in logical relations, and serve as the content of attitudes. Since at least 1980, this has been the common assumption of realists and antirealists alike in mainstream debates in the philosophy of science (van Fraassen 1980).

So we can grant, with Searle, that hypotheses have truth-value and, if you like, are entertained and assessed as part of an activity with the ultimate goal of providing theories that have a representation-to-world direction of fit. Of course, having propositional content or truth-value is not sufficient for an illocutionary act to count as an assertive or for a psychological state to qualify as a belief.

The problem with classifying acts like hypothesizing as assertives arises with respect to the demands Searle places on the act or attitude state types (illocutionary force or psychological mode); that is, with respect to what he takes assertives to require by way of (1a) expression and (1b) commitment. It is precisely with respect to these features of conjectural acts that attention to the details of contextual cues and language use pull us away from the claim that these are assertives. Indeed, the problem of classifying conjectural acts may arise due to a more general weakness in Searle’s program. Marcelo Dascal (1992) has pointed out that Searle’s project of analyzing and classifying how, in principle, linguistic expressions attach to illocutionary forces overlooks certain features of the use that speakers make of utterances in conversation. As we have seen, Searle’s account interprets representational discourse as expressing beliefs. But when we look at actual uses made of hypotheses and models in scientific discourse it is clear that the cognitive role or psychological mode associated with conjectural acts is often an attitude other than belief. Sometimes these conjectural acts are accompanied by explicit indications of
the particularly tentative or speculative character in the author’s meaning or that
the ideas are put forward provisionally with the aim of directing further research.
But often this goes without saying. And it does so for good historical reasons within
the scientific tradition.

The presumption that hypotheses are tentative, open to revision, and to be put
forward for consideration and subjected to experimental evaluation but not simply **asserted** until there is proper evidence, arguably forms part of the background
information structuring contemporary scientific communication. These shared
features that came to structure modern science as a form of ongoing conversation or collective inquiry aimed at understanding nature became a cornerstone of scientific activity as it emerged from natural philosophy in the seventeenth
century. We see in the writings of figures such as Kepler, Bacon, Descartes, Pascal,
Boyle, Huygens, Locke, and Leibniz a growing acknowledgement of the need to accord a much more significant role for hypotheses, probabilistic judgments, and non-deductive forms of reasoning alongside deductive logic and traditional mathematics than the Aristotelian ideal of demonstration permitted (McMullin 2001; Dascal 2005; Hacking 2006). Science developed characteristic modes of ampliative reasoning and argumentation, such as inference to the best explanation (McMullin 1992) and what Dascal (2005, 2008) has characterized as “soft rationality”, that are arguably now central to the scientific enterprise. In some respects the descriptive epistemology and philosophy of language used to characterize the propositional attitudes that these forms of reasoning involve has not yet caught up with these developments. The sorts of tentative and nuanced judgments involved in these sorts of reasoning do not all lend themselves easily either to the traditional triad of epistemic categories: believe, disbelieve, or withhold judgment. Searle’s mistake is to try to analyze all differences in commitment between straightforwardly asserting \( p \) and hypothesizing \( p \) as mere matter of degree, whether these be differences in strength of the illocutionary point or differences in strength of the sincerity conditions (Searle and Vanderveken 1985: 15, 19–20). But because there are often qualitative, not simply quantitative, differences in the way that the content of a scientific hypothesis is handled by scientists it is not clear that these can simply be reduced to probabilistic judgments on a scale between 0 and 1 (McKaughan 2007). Such differences need to be marked. Here is a place where attention to pragmatics, nuances in the actual use of language, may eventually yield a more fine-grained understanding of our cognitive attitudes of potential significance not just to speech act theory but possibly to epistemology as well. At any rate, this seems to me to be the place to start in developing the sort of accompanying account explaining how and why various conjectural acts depart from paradigm cases of assertion that a view like Searle’s would need.
6. Conclusion

The demand that our speech act theories fit actual and widespread communicative practices in science is a wholly reasonable one. Yet, I have shown that conjectural acts of the sort we have considered need not have the illocutionary point or sincerity conditions that Searle assigns to assertives. For the sake of clarity and simplicity, I have formulated the problem with respect to the details of Searle’s influential view. It should be clear, however, that the problem can be generalized. Searle’s conditions are not so outlandish or idiosyncratic that proponents of other major approaches can simply avoid asking themselves if their own views will face similar problems. In section three, we saw a wide range of influential theorists who affirm some version of (1a), that sincere assertions that $p$ express belief that $p$, or (1b), that through acts of assertion one undertakes a commitment to the truth of $p$. Notice that generating the problem does not require that a view affirm both (1a) and (1b) in conjunction with (2), that all conjectural acts are to be classified as assertives. Any view that affirms either (1a) or (1b) as well as (2) owes us an account of why conjectural acts should count as assertives. Similarly, the problem can arise for views that maintain variations on (2), even for views that use some other category, such as Austin’s “constatives”, rather than Searle’s assertives. For example, it won’t do simply to see conjecture and assertion as species of a more general genus, constatives as Bach and Harnish have it, if we also require that all acts that fall under the genus count as expressions of belief (Bach and Harnish 1979: 41). So there is work to be done. It is fitting, perhaps, to close not with an act of assertion, but by inviting others to join me in the larger project of developing a richer understanding of scientific attitudes.

Acknowledgments

* I thank two anonymous referees and Marcelo Dascal for very helpful comments on a previous draft of this paper. One of them pointed out that in two very perceptive paragraphs Mark Siebel (Siebel 2002: 131) forcefully objects to Searle’s claim that assertives involve “commitment to truth” along the same lines. Although I came to the conclusion independently (McKaughan 2007), I am happy to find myself in agreement with Siebel and to see myself as developing the objection with more explicit attention to real scientific examples and to the philosophy of science literature.
Notes

1. Searle and Vanderveken (1985: 12–19) hold that a full specification of the illocutionary force of an utterance requires a specification of the following seven components: illocutionary point, degree of strength of the illocutionary point, mode of achieving the illocutionary point, propositional content conditions, preparatory conditions, sincerity conditions, and degree of strength of the sincerity condition. However, Searle proposes to take “illocutionary point, and its corollaries, direction of fit and expressed sincerity conditions, as the basis for constructing a classification” (Searle 1979: 12) where “Direction-of-fit is always a consequence of illocutionary point” (ibid.: 4).

2. I am pleased to discover Mark Siebel raising the same sort of objection to Searle’s definition of having an illocutionary point:

Firstly, the commitment, or even the intention to commit oneself, to the truth of the propositional content is not always necessary for performing an act of the assertive class. Searle counts hypothesizing among the assertives. But hypothesizing includes cases where the utterer merely wants to present a proposition in order to consider its consequences. In such a case, he is in no way committed to its truth, and he surely does not intend to be so committed (Siebel 2002: 131).

3. If the theory mentions entities that are not observable, even in the best cases philosophers of science will disagree about whether the full belief that a theory is true, as opposed to empirically adequate (correct with respect to the observables), is the most appropriate attitude. It is worth noting, however, that all of the points I have made as part of the challenge I am presenting to Searle are compatible with a robust realism in the philosophy of science and in no way depend on an instrumentalist construal of scientific theories or other issues of controversy in the debate over scientific realism.

4. The same point obviously also holds with respect to Searle’s essential condition (1b). Here again, I find myself in agreement with Mark Siebel:

Searle (1975: 13) tries to capture these examples [certain cases of hypothesizing] by claiming that the degree in which an assertive commits the utterer to something’s being the case “may approach or even reach zero”. But if it is zero, as in the case of a mere hypothesis, then no commitment is left. An assertive which commits the utterer in degree zero to the truth of the expressed proposition is nothing else than an assertive which commits him in no degree to it. In a nutshell, it is an assertive which does not commit him. Therefore, I do not see how this notion should be able to solve the problem (Siebel 2002: 131).

References


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