# BELIEF AND KNOWLEDGE Mapping the Cognitive Landscape

KENNETH M. SAYRE

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KENNETH M. SAYRE

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#### **PREFACE**

Every decade or so, in most branches of philosophy, a new wave of recruits takes its place on the frontiers of research and helps mark out the way to be followed by the next generation. The trail is blazed at each turn to point the way forward, leaving divergent ways behind to disappear in the underbrush. Under the leadership of scouts with a good sense of direction, the line of research along a given branch may be expected to flourish. But if the trailblazers lose their bearings and take a series of wrong turns, then research along that way is likely to founder. The trail they blazed, in effect, will have reached a dead end.

The conceptual explorations documented in this book began in the 1970s, with my growing conviction that cutting-edge initiatives in cognitive science—which at that time was my major research commitment-had veered in a seriously wrong direction. In retrospect, the mistake appears almost unavoidable, given the reliance of pioneering research in the field upon technological metaphors for how the brain operates (e.g., La Mettrie's "watchworks" in the eighteenth century, Babbage's "analytical engine" in the nineteenth century, Rosenblatt's "perceptrons" and Ashby's "homeostats" in the mid-twentieth century). The innovation I am describing as a "wrong turn," of course, is the now prevalent view of the mind as a biological computer, with its attendant conception of cognitive attitudes as relations between the brain and its internal propositional states. While the computational view of the mind continues to draw recruits, the ranks of its critics are swelling more quickly; and it seems a good bet that computationalism (as we know it) will reach a dead end before cognitive science finds its bearings in the twenty-first century.

Another branch of cognitive studies that seems to have taken a wrong turn somewhere in the not too distant past is the theory of knowledge. The mistake here is not so straightforward as adopting a problematic model of cognitive operations, as with computationalism above, but is more a matter of failing to react critically to a problematic assumption

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that became more deeply embedded as the cutting edge pressed forward. The assumption is that knowledge is a form of belief—namely, true belief backed up by appropriate justification. Under the sanction of this assumption, a major portion of research in epistemology today is aimed at an explication of appropriate justification (in the manner of foundationalism, reliabilism, coherentism, internalism, externalism, etc.), with the common expectation that when this issue is settled, the problem of the nature of knowledge will be settled along with it. If knowledge is not a form of belief, however, then the question of how beliefs are appropriately justified has no direct relevance to the nature of knowledge, which means that cutting-edge research in epistemology proper (the study of knowledge) has lost its bearings. Arguments aimed at showing that this indeed has happened constitute a major strand of the discussion that follows.

While this book is critical of key aspects of current research programs in both cognitive science and epistemology, however, its main purpose is not to subject either program to detailed criticism. The primary purpose of the book is to undertake a descriptive analysis of a representative sampling of cognitive attitudes, focused in particular upon the attitudes of believing and knowing. One finding that emerges in the initial stage of analysis is that only a limited subset of those attitudes (e.g., believing) takes propositional objects. There are others whose objects are states of affairs—in some cases (e.g., knowing) states of affairs that are actual, in others (e.g., hoping and fearing) states of affairs with indeterminate status. It is in this regard, to be sure, that concern with the misdirections of cutting-edge cognitive science and epistemology intersects with pursuit of the book's primary purpose. Within the context of computationalism, on the one hand, cognitive attitudes in general are conceived as relations to neuronal states with propositional characteristics. Within the going paradigms of epistemology, on the other, knowledge and belief are both thought to take propositional objects, which sets up the view that their main difference is a matter of knowledge (but not belief) requiring truth and appropriate justification. The misdirection in either case traces back to the same origin: the notion that all cognitive attitudes (belief and knowledge included) are propositional in character.

Corresponding to these respective wrong turns abetted by the erroneous notion that all cognitive attitudes take propositional objects, there must be some "right turns" which trailblazers in these fields might have taken instead, in which belief and knowledge are distinguished with respect to their objects. Whereas computationalism seems to have

been on the wrong path from its beginning, there are moments in the development of recent epistemology when glimpses of the "right way" appeared to individual philosophers. Notable instances are H. H. Price ("Some Considerations about Belief," 1934–1935) and Zeno Vendler (chapter 5 of *Res Cogitans*, 1972). But the insights thus afforded were not developed systematically, leaving extensive territories of the affected landscape as yet unexplored. Another way of describing the main purpose of this book is in terms of a mapping of some of these territories. The book undertakes to chart in detail those portions of the cognitive landscape marked off by belief and knowledge and their respective objects.

While leaving room for brief side trips now and then into neighboring territories, this aim dictates the following sequence of topics. After a preliminary survey in chapter 1 of cognitive attitudes generally, the discussion turns in chapter 2 to belief specifically and to the correlative states of doubt and certainty. Since belief is paradigmatic of attitudes with propositional objects, chapter 3 considers what propositions must be like to serve in this role and to pass on their truth-values to the attitudes concerned. The essential features of a proposition are taken (following Wittgenstein) to be that (a) it represents a specific state of affairs to which (b) it ascribes a determinate status (being the case or not being the case). Chapter 4 takes up the issues of truth and falsity in turn, with special attention to the circumstances that render a proposition true—that is, to its truth-conditions. A general definition of truth is proposed, according to which a proposition is true just when the status it ascribes to a state of affairs is the status enjoyed by the latter in the actual world.

The discussion turns in chapter 5 to the conditions of knowledge and to its relation to justified true belief. Consideration is given to the relation between knowledge and certainty and to the threefold distinction among having access to how things stand in the world (i.e., knowing), gaining access of that sort originally (e.g., perceiving), and retaining access once it is gained (e.g., remembering). The next two chapters are given over to states of affairs in their characteristic role as objects of knowledge. Chapter 6 lays out a conception of states of affairs that makes them isomorphic with symbolic representations sanctioned for such use as part of public language. In developing this conception, two conditions are laid down for representation generally: (1) that a symbol must be capable of directing a subject's attention beyond the symbol itself to what it represents, and (2) that the relation between a symbol and what it represents does not require that the latter ever actually exists.

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Chapter 7 develops a conception of being (and not being) the case that applies to both empirical and nonempirical (e.g., mathematical and logical) states of affairs. In combination with the previous definition of propositional truth, this yields an analysis of the truth of counterfactual statements and a correlative analysis of dispositional properties.

The final three chapters address a variety of topics of enduring interest in cognitive studies, building upon the findings of the preceding chapters. Chapter 8 shows how the notion of representation "in the brain" typical of current computationalism runs afoul of requirement (1) of chapter 6 and goes on to develop a way of thinking about internal representation that meets this requirement without loss of scientific plausibility. Chapter 9 takes up the topic of intentionality and shows how this conception of internal representations can be extended, in accord with requirement (2) of chapter 6, to yield an account of the intentional character of cognitive attitudes generally. As a notable by-product, this account provides an explication of intensionality (with an "s") showing how referential opacity is a consequence of a manner of reference that relies upon the intentionality (with a "t") of a cognitive attitude in identifying the object to which reference is made.

Chapter 10, finally, takes up the vexing question of whether knowledge can be extended by rational inference. Its conclusion (contrary to prevailing forms of realism) is that, while inference can isolate circumstances in which previously unknown states of affairs become accessible, it is incapable (for reasons of intentionality) of generating new knowledge itself. Belief may transcend the bounds of cognitive accessibility, but knowledge—as a mode of access—is incapable of following.

Given the way this exploration diverges from the prevailing paradigms in epistemology, it should not be surprising that justification does not figure in the synopsis of topics above. While a search for evidence might sometimes lead to knowledge of the states of affairs concerned, this topic does not loom large in the present perspective. A consequence is that little is said about the issues of foundationalism, reliabilism, internalism, and so forth, that dominate current discussion in cutting-edge epistemology. Apart from its wide-ranging concern with topics of representation, this study similarly has little to contribute to ongoing debates in cognitive science. While I have addressed various issues on this front in other contexts recently, the present study provides no occasion to pursue these matters further.

As these considerations make clear, indeed, the book would be a poor choice for any class or seminar aimed at introducing students to prevailing research paradigms in either of these disciplines. The book was written instead for scholars (advanced or neophyte) who are inter-

ested in cognitive attitudes generally and who are dissatisfied with what "mainline" literature has to say on such matters. In one way of putting it, the book lays out a new approach to such cognitive attitudes as belief and knowledge—an approach that in time might develop a cutting-edge of its own. But the present study is only a preliminary exploration at best; and there are many facets of the landscape left to be mapped before the territory at large becomes terra cognita.

Inasmuch as this talk of exploration and the like obviously tends toward metaphor itself, I feel obliged to say what I can in more direct terms about the method actually followed in the present study. One way of describing the method that some readers might find informative is to align it with the technique of conceptual analysis—a method typical of analytic philosophy before the days of numbered propositions and counterexamples. Whatever concepts amount to exactly, they tend to be interconnected in well-structured networks. And the task of analyzing these structures and making them perspicuous is one philosophers always have been ready to call their own.

Since the only public (and hence reliable) way of getting at concepts is to pay close attention to the ways they enter our speech, another way of identifying the approach of this study would be to liken it to the techniques of so-called ordinary language philosophy. Although obvious difficulties arise when well-trained people find different nuances in the same locutions, the way people commonly talk in certain well-structured situations can tell us a great deal about the conceptual structures that make communication possible. At one critical point in the argument of chapter 1, for example, I rely upon the "ear" of the critical reader to recognize that when we talk about discovering that the gate is shut, we are not referring to the discovery of a proposition. What we discover instead in such circumstances is a state of affairs (that of the gate's being shut). While I take this to be an objective fact regarding the concept of discovery—that is, regarding how the term "discover" is standardly used-there is no way of persuading a reader that this is the case when the reader cannot "hear" the oddness in the expression "N discovered a proposition" when used to describe what N discovered in coming upon the gate.

Whatever else an exploration of a conceptual landscape amounts to, at any rate, it includes a careful examination of facts like these that delineate the conceptual structures one is attempting to analyze. This observation makes appropriate yet another description of the method followed below—a method akin to what Austin once called "linguistic phenomenology" (J. L. Austin, "A Plea for Excuses"). To paraphrase what Austin said in characterizing the method, when we examine what

exactly we would say in certain specific situations, we are not looking merely at the words (or meanings, or concepts) involved. We are using a heightened awareness of the words involved to sharpen our perception of the phenomena themselves. In that way, to look carefully at the words we use is to look carefully at the underlying facts as well. The fact that attitudes like discerning cannot be evaluated in terms of truth-value, for example, is made evident with the observation that corresponding terms like "discerning" cannot be qualified by either "true" or "false." In this way at least, the explorations reported below employ the techniques of linguistic phenomenology. The phenomena studied, to repeat, are prominent features of the cognitive landscape dominated by the concepts of belief and knowledge. And the technique followed in these explorations, by and large, is one of drawing attention to prominent features of these phenomena by attending carefully to how we would describe them under carefully defined circumstances.

This aspect of the method is worth bearing in mind as the reader prepares to follow the arguments laid out below. Although the subject matter at times gets rather technical (particularly in chapters 4 and 9), the mode of argument itself is (almost) always informal. This means that the conclusions to be established are not (critically speaking) proved, but rather are presented as what one will notice when one looks at the facts in the way the argument indicates. The form of argument, in other words, is not "this is true and this is true, therefore that is true as well," but rather "when you see this and this, that should also be apparent." The exploration in this way becomes a joint venture; and what a partner in the exploration (the "second person" to whom the argument is addressed) comes to know as a result is something that person comes to know firsthand.

Preliminary work on the manuscript began about twelve years ago while I held the rank of Visiting Fellow at Merton College in Oxford. My thanks go out to the Warden and Fellows of the College for electing me to that much appreciated position. The first complete draft of the book was prepared while I had a reduced teaching load during the spring term of 1990. I am grateful to the responsible administrators at the University of Notre Dame for making that time available. Substantial help along the way came from Thomas Blackburn, David Burrell, Richard Foley, Richard Fumerton, Steven Horst, John Lucas, Christopher Menzel, William Tolhurst, and (close to home) my son, Christopher, and wife, Patricia. I thank them all personally for their encouragement, without which this exploration could not have persisted.

The guideposts are set. Let us prepare to embark.

T

## BELIEF AND ITS CONCEPTUAL ENVIRONMENT

### Chapter 1

## A SURFACE MAP OF COGNITIVE ATTITUDES

#### 1. The Orthodox Doctrine of Propositional Attitudes

Toward the end of his discussion of knowledge in the *Theaetetus*, Plato introduces the hypothesis that knowledge is identical with true belief (or judgment: doxa) accompanied by logos. Taking logos in the common sense of "ground" or "reason," we find here the locus classicus of the view that knowledge can be generated from true belief by the addition of supporting reasons. Contemporary epistemology, for the most part, has followed suit. Adopting as their point of departure this standard conception of knowledge as justified true belief, most epistemologists in twentieth-century analytic philosophy have understood their primary task to be that of elucidating the character of the justification capable of converting true belief into knowledge. The problem of justification provides the connecting link between the phenomenalism that prevailed during the early decades of the twentieth century and the various forms of reliabilism and coherentism that have dominated epistemology more recently.

The only major challenge to this standard conception of knowledge (within the analytic tradition at least) has come in the form of the so-called Gettier problem, which questions whether justification by itself can be sufficient to generate knowledge out of true belief. But this challenge is premised upon a basic assumption that it shares with the standard conception of knowledge: the assumption that knowledge is true belief with something else added. For only if knowledge had true belief among its components would it be interesting to question whether justification suffices as the remaining constituent.

The conception of knowledge as a kind of true belief trades upon an even more basic assumption that both knowledge and belief are atti-

tudes toward propositional objects. Put in somewhat different terms, the standard conception is that a subject N knows a proposition p just in case (i) N believes that p, (ii) p is true, and (iii) N's true belief is augmented by other factors—such as a coherent body of supporting evidence or production by reliable belief-formation procedures—that are capable of converting belief into knowledge. If such a view is correct, then the only major difference between knowing p and believing p truly is the presence of this additional component. And if the only major difference between knowing p and merely believing p truly is the presence of this additional component, then the object of knowledge—what N knows in knowing p—is identical with the object of belief. In either case, according to the prevalent view, the object is the proposition p. When N's cognitive attitude changes to knowing p from merely believing p truly, the only difference in N's attitude before and after is the presence of this additional component. The propositional object of the attitude remains unchanged.

A more general version of the assumption that both knowledge and belief take propositional objects has found its way into contemporary cognitive science. For research guided by the computational theory of mind in particular, the basic idea<sup>2</sup> is that the brain operates as a computing device that accomplishes its major cognitive tasks as the cumulative upshot of many subtasks and that the intentional (i.e., the mental) features of these tasks are to be understood in terms of a mapping with the physical states involved in the brain's computations. Cognitive attitudes like fear and belief, according to this view, are relations between the organism and certain of its brain states that play the role of representations. To call these brain states "representations," for the cognitive theorist, is to say that they function as propositions, characterized by truth-value, reference, and intentional content. Under their computational description these brain states possess physical properties making them capable of causal interaction with other states of the organism, while under their propositional description they are endowed with semantic properties that account for the organism's cognitive activities.

Among cognitive attitudes explicitly identified as propositional, it is common to find believing, fearing, and wanting.<sup>3</sup> One prominent author adds forgetting, understanding, and predicting,<sup>4</sup> while reporting, commanding, and being aware are explicitly cited by another.<sup>5</sup> Turning from cognitive theory to epistemology, we hear of realizing, thinking, and judging as propositional attitudes, as well as, of course, believing and knowing.<sup>6</sup> Although our primary concern in the present study is with knowing and believing specifically, the dominant view in cogni-

tive studies generally seems to be that all cognitive attitudes are propositional in character—that is, that cognitive attitudes across the board take propositional objects. This view is sufficiently prominent to merit an identifying label. Let us refer to it as "the orthodox doctrine of propositional attitudes" (ODOPA).

In the case of knowing and believing specifically, as already noted, ODOPA provides that the attitude of believing that p might give way to the attitude of knowing that p, without change in propositional object. If ODOPA should happen to be wrong in this regard, however, as argued below, then the prevalent view of knowledge as augmented true belief would be in trouble, regardless of particular accounts of how this augmentation is accomplished. Further discussion of this view of knowledge and its untenable predicament will be reserved for a later chapter. The purpose of the present chapter is to survey the domain of cognitive attitudes generally and to map certain varieties of cognitive attitudes that are structured quite differently from what ODOPA describes.

In its most general form, ODOPA is the doctrine that cognitive states consist of three independent components— (i) a cognitive attitude (A) relating (ii) a subject (N) to (iii) a propositional object (p)— and that each component in a particular case can be replaced by another of its kind without affecting the character of the other two components.<sup>7</sup> The three-part structure in question can be seen in the following sentences:

- (1) Beatrice knows that snow is white (e.g., when observing a fresh snowfall).
- (2) Camille believes that the sun is shining (e.g., at the beach).
- (3). Deirdre hopes that the gate is shut (e.g., to the garden where her children are playing).

Each sentence attributes to a cognitive subject (Beatrice, Camille, Deirdre) an attitude (knowing, believing, hoping) toward a propositional object (that snow is white, that the sun is shining, that the gate is shut). The purported independence of component (ii) can be illustrated by replacing "Beatrice" in sentence (1) with either "Camille" or "Deirdre," which leaves the remainder of sentence (1) apparently unchanged in meaning. Camille and Deirdre, that is to say, might also know that snow is white, entertaining the same attitude (knowing) toward the same object (that snow is white) as does Beatrice according to (1). The presumed independence of component (iii) can be illustrated similarly by replacing "that the sun is shining" in sentence (2) with other propositional expres-

sions. Camille might also believe that snow is white or that the gate is shut to the garden where the children are playing. The alleged independence of component (i), finally, can be illustrated by replacing "hopes" in sentence (3) with "knows" or "believes." The central tenet of ODOPA is that a subject might hold many and sundry different attitudes toward a given proposition. For instance, Deirdre might know or believe, as well as hope, that the gate is shut at the entrance of the garden.

Now it seems relatively unproblematic that, given a particular cognitive attitude toward a suitable object, the same attitude toward this object might be held by different subjects. B, C, and D all might know that snow is white, as might any number of other cognitive subjects. And it seems likewise unproblematic that a given subject might hold the same attitude toward a variety of suitable objects. C might believe not only that the sun is shining, or that snow is white, or that the gate is shut, but any number of other propositions as well. What is seriously problematic about ODOPA is the remaining tenet that cognitive subjects can hold an unrestricted variety of attitudes toward identical objects and that the objects of these attitudes are always propositional in character. To be sure, D might hope that the gate is shut, might believe that the gate is shut, and (upon checking) might even come to know that the gate is shut. But it does not follow from this—despite repetition of the phrase "that the gate is shut"—that what D hopes is the same as what she believes, or that either what she hopes or what she believes is the same as what she comes to know, and so forth. More specifically, it does not follow that her attitude in each case is directed toward a propositional object.

To see why none of this follows, it may be helpful to reconstruct an argument of the sort that presumably would be used in support of ODOPA and then to show where this argument goes wrong. I speak of "reconstructing" an argument for ODOPA, rather than examining arguments actually offered by its proponents, because I am not aware of any attempts among either epistemologists or cognitive theorists to defend this central doctrine explicitly. The usual procedure in this quarter is just to take the doctrine for granted, perhaps because the reasons for accepting it seem entirely straightforward. As far as I can make out, these reasons are bound up with a point of terminology. Just as in sentences (1), (2), and (3) the verbs "knows," "believes," and "hopes" are all followed by expressions of the form "that such-and-such," so any verb expressing a cognitive attitude might be followed by a sentential clause beginning with "that." It might be urged, indeed, that the identifying mark of a cognitive verb is the ability to take such a clause as its grammatical object. 8 But a sentential clause beginning with "that," the

argument continues, is a standard grammatical expression for a proposition. Thus any verb of cognitive attitude takes a propositional expression for its grammatical object, and the proposition this expression represents is the cognitive object of the attitude in question.

The argument, in brief, is (a) that cognitive verbs invariably take sentential clauses beginning with "that" as their grammatical objects, (b) that clauses of this form invariably express propositions, and hence (c) that cognitive attitudes invariably take propositional objects. The final step of the argument would be something to the effect that, since all cognitive attitudes take objects of the same sort, a subject N might shift from one attitude to another without changing the object of the attitudes in question.

There are several respects in which this argument is open to criticism and, indeed, several things about it that one or another theorist might want to change depending upon his or her views regarding the relation between surface grammar and the structure of cognitive attitudes. But there is one premise upon which the argument depends for its very cogency, which most epistemologists and cognitive theorists appear to accept as self-evident. It is in connection with this key premise, I shall attempt to show, that the argument above is flawed beyond retrieval. This is the premise that sentential clauses beginning with "that" invariably are expressions of propositions.

The project for the remainder of this chapter, as already noted, is to map out an overview of cognitive attitudes generally and, in the process, to note respects in which ODOPA is erroneous. By way of anticipation, the main problem with ODOPA will turn out to be the appearance of certain important classes of cognitive attitude that do not take propositional objects, but that are directed toward states of affairs (SOAs) instead. Inasmuch as the verbs reporting these nonconforming attitudes all take "that" clauses as their grammatical objects, a marshaling of various cases in point will serve to show that clauses beginning with "that" are not always propositional. Let us make a start on the larger project by taking a critical look at the premise that all "that" clauses are propositional, part of which will involve locating nonconforming cases.

#### 2. Why "That" Clauses Are Not Invariably Propositional

It seems to be a standard philosophic propensity (not confined to epistemologists and cognitive theorists) to look upon a sentential clause beginning with "that" as a ready locution for expressing propositions. If

someone (a student, perhaps) were to ask for examples of propositions, we might find ourselves responding in some manner like, "There is the proposition that snow is white, the proposition that the sun is shining, the proposition that the gate is shut, and so forth." In this response, the "and so forth" would be intended as a gesture toward yet other sentential expressions, each beginning with the telltale "that."

This way of thinking about propositions amounts to treating the format "that \_\_" as an operator applying to sentential locutions (e.g., "snow is white," "the sun is shining") to produce locutions of another sort that have propositional status ("that snow is white," "that the sun is shining"). Thinking this way, we then tend to parse the phrase "the proposition that snow is white" in the manner of "the proposition, namely, that snow is white," where the last four words express the proposition in question. This enables us to say things like "that snow is white is true," intending thereby to attribute truth to the proposition that snow is white.

To put it another way, we think of "that" as a kind of holder or binder by which the identity of a proposition is held inviolate as we shift it from one to another context—or as a kind of handle by which it can be moved intact from one attitudinal relation to another. <sup>10</sup> Relying upon this device, we consider ourselves enabled, for example, to say in sequence, "Camille believes that the sun is shining," "Camille has good evidence that the sun is shining," "That the sun is shining is a true proposition," hence "Camille knows that the sun is shining." Here we deftly move the proposition (allegedly, that the sun is shining) from contexts attributing belief and evidence to contexts attributing truth and finally knowledge.

But this treatment of "that" clauses can be seriously misleading. In point of fact, as we shall see, prefacing "that" to a sentential locution is neither necessary nor sufficient to make that locution an expression of a proposition. It follows from this that the appearance of the term in a report of a subject's cognitive attitude (as in "Beatrice knows that snow is white") has no immediate bearing, one way or the other, on whether that attitude is directed toward a propositional object.

Consider the matter of necessity first. Assume that Camille has adopted an attitude of belief toward the proposition that the sun is shining. In reporting that attitude, it is entirely natural to say "Camille believes that the sun is shining." But it is no less natural, and no less adequate for the purpose, to say simply "Camille believes the sun is shining" (eliminating the "that"). The presence of "that" in our report is wholly superfluous. According to the advice of the Oxford English Dic-

tionary, use of "that" in such contexts is a matter of style, its being preferred after such verbs as "conceive" and "agree," but often omitted after verbs such as "believe" and "think." [This is not an argument from the authority of usage, but simply an observation that we regularly refer to propositions without relying upon "that" as a conjunctive operator.) In brief, prefixing "that" to a sentential locution is not necessary for that locution to be used as a propositional expression.

To show it is not sufficient requires more extensive argument. To get the argument under way, we may observe that when an attitude is taken toward a propositional object, it makes good sense to say so explicitly. If Camille believes that the sun is shining, for instance, and if what she believes is the proposition that the sun is shining, then to say of Camille that she believes a proposition is both intelligible and in point of fact true. Similarly, if N denies what C believes, and if what C believes is a proposition, then it both makes sense and in fact is true to say that N denies a proposition. Given that both believing and denying are propositional attitudes, what one believes and denies are propositions. And there is nothing amiss in stating this directly.

But now consider the case in which the sky is still sunny, but N predicts that it soon will turn cloudy. Let N remark explicitly, "I predict that the sky will soon turn cloudy." If the part of N's remark beginning with "that" indicates a proposition, it should be both intelligible and true to say that N predicts a proposition. Despite its surface similarity to talk of predicting storms (disaster, etc.), however, talk of predicting propositions is plainly unintelligible. Storms (disasters, etc.) are eventualities that might come to pass, and it makes sense to talk of predicting such occurrences. But a proposition is not an eventuality. To be sure, it makes sense to talk of eventualities that involve propositions in one way or another. There is the eventuality of the proposition that the sky will turn cloudy turning out to be a true proposition. But N's actual prediction is (merely) that the sky will turn cloudy, which says nothing (although it implies something) about a proposition's being true. Since N's prediction is that the sky will turn cloudy, and since N does not predict a proposition, the phrase "that the sky will soon turn cloudy" in N's prediction does not express a proposition. Here is one case in which "that" followed by a sentential expression does not function as a propositional locution.

For another case, suppose that C responds by saying she hopes that the sky stays clear. C says this in so many words, using the expression "that the sky stays clear." But that expression used as such cannot express a proposition, since propositions are not things one might intelli-

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gibly be said to hope. C might hope that the proposition that the sky stays clear turns out to be a true proposition. But this would be to hope that an eventuality turns out to be the case, rather than to hope a proposition itself. Talk of hoping propositions (merely and simply) is no more sensible than talk of predictions with propositions as objects. The "that" clause in C's response accordingly is not propositional. Other cognitive verbs typically followed by sentential "that" locutions that cannot intelligibly be said to pick out propositions include "anticipate," "guess," "wish," and "judge." While one might anticipate that a proposition will be proven false, for example, there is no sense in which one might anticipate the proposition itself. And so on for the other cases.

The foregoing cases are all counterexamples to the key premise in the argument for ODOPA offered in the section above—namely, the thesis that sentential clauses beginning with "that" invariably function as propositional expressions. While these are all cases of cognitive verbs typically followed by "that" clauses of the relevant sort, the cognitive attitudes to which they correspond cannot intelligibly be said to take propositions as objects. There is another class of counterexamples consisting of cognitive attitudes that might conceivably take propositions as objects, but are such that when interpreted as taking propositional objects yield senses sharply deviant from their plainly intended uses. The argument now shifts from a point of intelligibility to a point of what is normally meant in using such verbs.

Imagine that C leaves for the beach fully confident that the sun is shining, but once she gets there discovers that the sky is overcast. This is the state of affairs (SOA) that N has predicted, and what C discovers is the presence of this very SOA. In discovering this, she also discovers that N's prediction was accurate, inasmuch as that prediction is confirmed by the presence of this SOA. What C discovers, in this case, is not a proposition. Although there are circumstances in which one might be said to discover a proposition—for example, N discovers the proposition "snow is white" written as part of a syllogism in an old manuscript—C's current circumstances are not of this sort. Under the present circumstances what C discovers is an aspect of the local weather conditions—the SOA itself of the sky's being overcast.

For another example, imagine that Deirdre has been watching her children through a window in the study of her house and that she suddenly notices that the garden gate is open. What she notices is the SOA of the gate's being open, not a proposition to the effect that this is the case. While it is not inconceivable that on occasion one might notice a

proposition, as when N notices the proposition that completes the syllogism, what D notices through the window is not a proposition about the gate, but the SOA itself of the gate's being open. It follows that the expression "that the gate is open," reporting what D has noticed, is not an expression of a proposition. Other verbs falling into this class are "find," "discern," "perceive," and "ascertain." While one conceivably might find certain propositions in a list of disputed theses, for example, when D checks further and finds that the children are still in the garden, what she finds in this case is not a proposition. And so on for the other verbs in question. Although verbs in this class all take "that" clauses that on odd occasions might admit a propositional reading, the intended reading for the most part would not be propositional. What we have with verbs of this sort is yet another set of counterinstances to the thesis that sentential clauses beginning with "that" invariably function as propositional expressions.

Inasmuch as this thesis about the exclusively propositional use of "that" clauses of this sort serves as a key premise in the argument for ODOPA offered above, the argument itself must be rejected. It is of course true that collapse of one of its supporting arguments does not necessarily constitute a refutation of ODOPA itself. What we should be prepared to see at this point, however, is that the various cases discussed in the paragraphs immediately above are enough in themselves to show ODOPA mistaken. Here is why. According to ODOPA, the sentence "Camille believes that the sun is shining" should be parsed in this fashion: "Camille—believes—that the sun is shining." In this parsing, "Camille" could be replaced by the name of another person, "believes" could be replaced by another cognitive verb, and "that the sun is shining" could be replaced by another sentential "that" expression (allegedly expressing a proposition), each replacement leaving the remaining components unchanged. But we have seen counterexamples that show, in the case of some cognitive verbs at least, that interchange of the verbs concerned can result in a distinct change in sense on the part of the "that" clause following.

While the expression "that the sun is shining" in "Camille believes that the sun is shining," for example, identifies the proposition that Camille believes, if "believes" in that sentence were replaced by "notices" then the expression in question could no longer be properly understood as identifying a propositional object. In the expression "Camille notices that the sun is shining," what "that the sun is shining" identifies is not a proposition, but the SOA instead that Camille has come to notice. Without any change in the wording of this expression

(i.e., "that the sun is shining"), interchange of the terms "believes" and "notices" effects a change in its reference to cognitive objects. In "Camille believes that the sun is shining," the expression in question refers to a proposition; but in "Camille notices that the sun is shining" the typographically identical expression refers to an SOA instead. Conversely, while "that the gate is open" in "Deirdre discovers that the gate is open" identifies an SOA that Deirdre discovers, if "discovers" in this sentence were replaced by "asserts," then the expression in question comes to identify a proposition—the proposition that the gate is open, which Deirdre is said to assert. Again without any change in the wording of the expression "that the gate is open," interchange of the cognitive verbs "discovers" and "asserts" produces a change in the apparent referent of that expression. Countercases of this sort could be multiplied indefinitely. And what these countercases show is that the pivotal tenet of ODOPA, to the effect that terms for cognitive attitudes can be freely interchanged without change in reference of the expressions identifying their corresponding objects, is patently wrong and must be rejected.

What makes this erroneous tenet of ODOPA more or less plausible initially is its parsing of cognitive-attitude statements according to the form: N (the subject)—A's (the cognitive attitude)—that so-and-so (the object of the attitude). This parsing, accordingly, should be viewed with suspicion. In this regard, it is interesting to consider various alternatives to this parsing that have been suggested by recent philosophers. A. N. Prior, for instance, has argued that "thinks that," in the sentence "N thinks that there will be a nuclear war," is an operator (sometimes called a "relator") joining a name on its left side with a sentence on its right. <sup>12</sup> In effect, "N thinks that \_\_" functions like a one-term sentential connective (compare "it is false that \_\_"), while "... thinks that there will be a nuclear war" functions like a one-place predicate (compare "... is red"). Since this "dual-function" analysis is supposed to apply to attitudinal reports generally, it yields parsings such as "Camille—believes that—the sun is shining" and "Camille—notices that—the sun is shining." <sup>13</sup>

Another alternative is provided by Donald Davidson, along with his analysis of indirect discourse based on the notion of "samesaying." According to this analysis, "Galileo said that the earth moves" is understood as roughly equivalent to "Galileo said (in his language, what I as samesayer say, in my language, in saying) the earth moves." More directly, suppressing reference to the samesaying relation, the sentence is to be understood as "The earth moves—Galileo said that." An equiv-

alent parsing, identical in effect with that suggested by Prior, would be "Galileo—said that—the earth moves."

Davidson's approach is supported by an explicit appeal to the Oxford English Dictionary, which traces this use of "that" as a conjunction back to an earlier use as a demonstrative pronoun. In effect, the term "that" points out, in its respective contexts, what Galileo said, what Camille believes, what Beatrice knows, what Deirdre hopes, and so on. And it does so without prejudging the character (propositional or otherwise) of the object to which it points. This is the right way, it seems to me, of construing the role of "that" in such contexts. We may thank Davidson for drawing attention to this demonstrative conjunction, without wanting to extend his notion of the samesaying relation to "samebelieving," "sameknowing," "samehoping," et cetera.

The demonstrative function served by "that" in these various sentences could be served by other symbolic devices as well. One ready substitute is the versatile colon, in its common use of drawing attention to the expression or reference following it. Rendered accordingly, Prior's sentence would be written "N thinks: there will be a nuclear war," and Davidson's sentence would be written "Galileo said: the earth moves." In like fashion, we could rewrite sentences (1)—(3) from the first section as:

- (1') Beatrice knows: snow is white.
- (2') Camille believes: the sun is shining.
- (3') Deirdre hopes: the gate is shut.

And in each case, we could do so without begging any questions about the character of the object toward which the cognitive attitude is directed.

Given that the "that" clause typically following a cognitive attitude verb cannot be relied upon to indicate the character of the corresponding object, the question arises of how the object can be determined in a given case. While the "that" clause following "believes" may be trusted to pick out a propositional object, and while the same grammatical construction following "discovers" or "notices" reliably indicates an SOA as cognitive object instead, there are many cases in which the object indicated is less than obvious on an intuitive basis. What we need at this point is a set of working criteria by which the objects of cognitive attitudes for the most part can be identified. <sup>15</sup> This need sets the task of the following two sections.

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### 3. Distinguishing Propositional Attitudes from Attitudes of Cognitive Access

The method to be employed through the remainder of the present chapter requires beginning with a small group of cognitive attitudes that quite clearly are attitudes toward propositions and with a second group of attitudes that no less clearly take SOAs as their proper objects. We then will formulate a set of features shared by all of the former but conspicuously absent in each of the latter. These features will provide criteria by which the two groups can be distinguished and by which additional members of both groups can be identified. By way of caveat, however, it bears restating that no effort will be made to produce criteria that apply unambiguously in all conceivable cases. <sup>16</sup> The present concern is to provide criteria that yield firm results over an ample range of common cognitive attitudes. It is enough if our criteria produce unambiguous results in application to attitudes of standard cognitive interest.

Believing and denying, along with asserting, have already been identified as attitudes we take toward propositional objects. Let us refer to them as "attitudes of propositional stance" (for short, "attitudes of stance"). One typical feature of such attitudes is that they are characterized in terms of truth and falsehood. If the proposition that the sun is shining is a true proposition, and if Camille believes that the sun is shining, then Camille sustains a true belief. She believes truly in this case that the sun is shining. To believe a false proposition, on the other hand, is to sustain a false belief, the upshot of which is that one believes falsely.

One similarly might assert, either truly or falsely, that storm clouds are gathering and it soon will rain. To assert this is to assert a proposition, the truth or falsity of which determines the truth-value of the assertion. And in denying the proposition that it soon will rain, one's stance of denial is true or false depending upon the truth-value of the proposition. So it is generally with attitudes of propositional stance. The truth-value of an affirmation, an attestation, or a declaration depends upon the truth-value in turn of its propositional object.

But things are otherwise with attitudes like discovering, finding, and noticing, which might be labeled "attitudes of cognitive access" (for short, "attitudes of access"). If Deirdre professes to have noticed that the gate is open, whereas in fact this is not the case, it is not intelligible to say that Deirdre noticed falsely or that in some sense her noticing was done incorrectly. What should be said instead is that D has failed

to notice, since one can only notice what in fact is the case. D's error is not a matter of incorrect noticing, but a matter of mistaken profession. Neither can she be said, conversely, to have noticed truly or correctly, if what she professed to notice is in fact the case. There is no such thing as a true or false noticing. For noticing is not an attitude toward a propositional object and, hence, not an attitude to be characterized in terms of truth-values.

Similarly, when C arrives at the beach and finds that the sun is shining, what she finds is not a proposition, but an actual SOA. And since SOAs do not admit evaluation in terms of correctness or incorrectness, it is unintelligible to describe her finding as either true or false. She indeed might claim to have found an SOA that (contrary to her claim) is not the case, but this results in a false claim only and not in a finding that in fact is false.

The same goes for other attitudes toward actual SOAs, such as ascertaining, discerning, perceiving, and recognizing. An SOA either is or is not the case. 17 And if an SOA is not the case, it is not available to be recognized, or perceived, or discerned. To be sure, one might recognize the SOA of the sun's not shining, which is the case if in fact the sun is not shining. But this clearly is not a case of "false recognition," as if one purported to recognize what is not the case. The sun's being occluded might be an actual SOA every bit as much as its being fully exposed. And to recognize its being occluded, when this in fact is the case, is no more to entertain an attitude toward a nonactual SOA than recognizing the SOA of a cookie-jar's being empty is entertaining an attitude toward a missing cookie. In each case, what one recognizes is an actual SOA. It should be noted in passing that we sometimes speak of "true discernment," as when commending someone's ability for discriminating judgment. But this is not to say that discernment is an attitude admitting truth-values. What we are speaking of in such cases is not something done truly, but something done with a certain degree of keenness. The opposite here is not "false discernment," but a mode of awareness that is deficient in sensitivity.

What these paradigm instances show, in summary, is that it is intelligible to qualify verbs of propositional stance (forms of "believe," "assert," "deny," etc.) in terms of truth-value, whereas verbs of cognitive access (forms of "notice," "find," "discern," etc.) do not admit qualification in terms of truth and falsehood, or in terms generally of a distinction between correctness and incorrectness. <sup>18</sup> This provides our first criterion for distinguishing attitudes toward propositional objects from attitudes toward actual SOAs.