states. But observing things is not the only way of being conscious of them.

DRETSKE (1995) urges that a state's being conscious consists not in one's being conscious of it, but in its being a state in virtue of which one is conscious of something. But subliminal perception also results in our being conscious of things; we are aware of the things we subliminally perceive, though not consciously aware of them. Indeed, subliminal perceiving would not affect our behavior and mental functioning if it did not make us in some way conscious of things. So Dretske's theory has difficulty accommodating non-conscious perceiving.

Dennett (1991) has advanced a different challenge to higher-order theories, arguing that the relevant hierarchy of states is not psychologically realistic. There is no difference, he argues, between how things seem to one and how they seem to seem. But collapsing that distinction again leads to difficulty with non-conscious states, such as subliminal perceptions. Some form of higher-order theory very likely offers the best way to accommodate the difference between conscious and non-conscious mental states.

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Content Mental states appear to come in two distinct kinds. On the one hand, there are states, like pains or tickles, whose nature is exhausted by what it *feels* like to have them, by their individuative phenomeno-

logies. Such states appear not to be "about" anything or to "mean" anything. On the other hand, there are states, like believing that snow is white, or desiring that the cat not scratch the furniture, which appear to have no interesting phenomenologies whatever, but which do seem to be about things, to mean something.

For these latter sorts of state – states which RUSSELL dubbed "propositional attitudes" – what they mean is referred to as their *propositional content*, or content for short. (The other part, the part designated by such psychological verbs as "believe" and "desire," is the *attitude* adopted toward the propositional content.) The content of a propositional attitude is typically specified, in language, through the use of a "that-clause" – Jane desires *that the cat not scratch the furniture*, John believes *that snow is white.*

The notion of propositional content raises a number of vexed questions in metaphysics, about which there is nothing but controversy. On the face of it, a belief attribution like the one mentioned in the preceding paragraph (*mutatis mutandis* for the other psychological states) appears to relate John by way of belief to some *thing* – the proposition that snow is white (*see* PROPOSITION, STATE OF AFFAIRS). Thus, it seems correct to infer from

John believes that snow is white

to

There is something that John believes.

This seems to show that propositional contents are objects of some sort, to which persons can bear various psychological relations. But what sorts of objects are propositional contents, what sorts of thing are things believed? They seem to be *abstract*: that snow is white is not in Manhattan or in my car. They seem to be *language-independent*: that snow is white looks as if it might have been true even if no one had devised a language in which to express it. They seem to be independent of the existence of any particular mind: two people can share the thought that snow is white. They seem even to be independent of the existence of any mind whatever: that snow is white looks as if it might have been true even if no one had, or even if no one could have, thought about it. Furthermore, and as the examples illustrate, propositional contents have conditions of truth (and falsity) and appear, indeed, to have their truth conditions essentially: no proposition could be the proposition that snow is white unless it were true if and only if snow is white.

All of the preceding points are accommodated by the view that a propositional content is a set of POSSIBLE WORLDS, namely, the set of all the worlds at which the proposition is true. Such a view has been quite popular in recent philosophy. But there are problems with it. Consider the belief *that either snow is white or it is not white* and the belief *that* $2 + 2 = 4$. These appear to be distinct beliefs: it seems possible to believe the one without *thereby* believing the other. Yet since they are both necessarily true, they are both true in all possible worlds. A possible worlds conception of propositional content would appear, therefore, not to be able to discriminate between them. It would appear to have to conclude that anyone who believes one necessary truth believes them all. And that does not seem right. (For further discussion, *see* STALNAKER, 1984, 1999.)

These considerations give one reason to hold that propositional contents are not merely sets, but more like structured complexes of objects and properties. The content of the belief that snow is white is the structured complex made up out of the substance snow and the property of being white (along with the property of exemplification or instantiation). This gets around the problem of believing necessary truths: the difference between the belief that $2 + 2 = 4$ and the belief that *either snow is white or it isn't* consists, in part, in the fact that the former involves the property of addition, whereas the latter does not.

Unfortunately, a famous set of considerations due to FREGE (1892/1980) seems to indicate that it cannot be right either. Consider the belief that water is potable and the belief that H_2O is potable. These appear not to be the same belief, for it seems as if someone may have the one without thereby having the other. Indeed, it seems as

if a person may believe that water is potable and not only fail to believe that H_2O is potable, but in fact actively believe, without contradiction, that H_2O is not potable. *The property* of being water, however, just is the property of being H_2O – or so science appears to teach us. So it seems as if belief contents must be made up out of constituents that are even more fine-grained than objects and properties. Such more finegrained constituents are normally referred to as *modes of presentations* of objects and properties. One of the large unresolved questions in the metaphysics of content concerns the nature of modes of presentation. (For further discussion, *see* Salmon, 1986; Schiffer, 1990; Soames, 2002.)

Another important class of metaphysical problems raised by the topic of propositional content concerns the *content relation.* By virtue of what sort of fact is some token neural state the belief that *p*? (*See* the extended essay on THE MIND/BODY PROBLEM.) This question may be broken up into two others: By virtue of what sort of fact is a token state a *belief* (as opposed to, say, a desire)? And, by virtue of what sort of fact does it express that proposition that *p*?

Concentrating on the second question, many philosophers are inclined to believe that the fact in question must be naturalistic (*see* NATURALISM), probably causal. There are many reasons for this conviction. Some are purely ontological: philosophers are loath to countenance properties that are not either identical with, or supervenient upon, the properties described by physics (*see* PHYSICALISM, MATERIALISM; REDUCTION, REDUCTIONISM; SUPERVENIENCE). Others are of a more explanatory character: it is hard to see how to give the content properties of beliefs a causal role in the explanation of behavior, on the assumption that they are not fundamentally naturalistic in nature. A non-reductive naturalism about content properties seems committed, implausibly, either to a peculiar sort of double causation or to the essential incompleteness of physics (*see* KIM, 1979, 2005; Yablo, 1992).

It seems, then, that there is much to be said for a reductive naturalism about the content properties of beliefs. Unfortunately, however, attempts to articulate a reductive naturalism of the required kind have met with very little success. Indeed, important arguments are available to the effect that content properties cannot be naturalized. Many of these highlight the allegedly *normative* character of the notion of content (*see* DAVIDSON, 1980; KRIPKE, 1982; Boghossian, 1989, 1990a).

The current impasse over the metaphysics of content has had a predictable effect – it has encouraged a growing skepticism about content. A significant number of contemporary philosophers are inclined to think that perhaps there are no mental states with content at all, that the idea of a contentful mental state is simply part of a bad and false ordinary psychological theory (*see* Churchland, 1981). It is unclear whether their skcepticism is justified; indeed, it is unclear whether it is even coherent (*see* Boghossian, 1990b; WRIGHT, 2002).

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contingent identity *see* IDENTITY

continuant Continuants continue through time. They persist. In contrast, occurrents occur. Paradigm continuants are people, tables and rocks. Paradigm occurrents are events, such as an avalanche or a birth. Continuants change. The changes themselves are occurrents.

A continuant persists if its temporal parts are connected in the right way. The right connection might be mere mereological summation, spatio-temporal continuity, causal dependence or, for people, continuity of consciousness.

Many philosophers would object to this appeal to temporal parts. First, some hold that in order for a continuant to persist it must be one and the same thing that exists at different times and that the account here has two different things, two distinct temporal parts, existing at the different times. Second, some hold that, by definition, continuants cannot have temporal parts. The occurrent/continuant distinction, they say, just is the distinction between having temporal parts and not having them.

See also BODY; BROAD; CHANGE; EVENT THEORY; TEMPORAL PARTS/STAGES; the extended essay on PERSISTENCE.

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continuity A concept which now, strictly speaking, applies to a mathematical function, and not primarily to a domain. Initially, continuity was thought of as a notion that applies to the whole function (as in, for instance, a continuous line), with exceptional points specified where a "break" is. However, in the early nineteenth century, the property of *continuity at a point* was defined (by Cauchy (1789–1857) and BOLZANO), which means intuitively that the correlates under the function of points which are "close" to the given point are also "close". One is then free to say that a function is continuous at no points or at one point, or over a range of points, and there is then no need to assume the intuitive "unity" of this range. This frees the notion of the continuity of a function from any assumption that the underlying domain must be continuous (*see* CLASS, COLLECTION, SET). What it depends on instead is the underlying neighborhood structure which is used to make the notion of "close" precise. (For instance, in the modern conception, which generalizes Bolzano's definition to the context of topological spaces, the continuity of a function does not depend on either the domain or range themselves being continua.)