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Function and causal relevance of content



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ABSTRACT

In this paper, I focus on a problem related to teleological theories of content namely, which notion of function makes content causally relevant? It has been claimed that some functional accounts of content make it causally irrelevant, or epiphenomenal; in which case, such notions of function could no longer act as the pillar of naturalized semantics. By looking closer at biological questions about behavior, I argue that past discussion has been oriented towards an ill-posed question. What I defend is a Very Boring Hypothesis: depending on the representational phenomenon and the explanatory question, different aspects might be important, and it is difficult to say a priori which ones these might be. There are multiple facets to biological functionality and causality relevant for explaining representational phenomena, and ignoring them will lead to unmotivated simplifications. In addition, accounting for different facets of functionality helps dispense with intuition-based specifications of cognitive phenomena.

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The notion of function is commonly used to account for representational phenomena naturalistically. Frameworks that appeal to functionality are now the mainstream form of naturalized semantics; to mention just a few: Ruth Millikan's (1984, 2004) teleosemantics, Fred Dretske's (1986) teleofunctionalism, Daniel Dennett's (1969, 1990) theory of intentionality, Robert Cummins's (1996) structural account of representation, and Mark Bickhard's (1993, 2008; Campbell, 2011) interactivism. At the same time, function-based theories of content meet with harsh opposition: it is claimed that teleological notions cannot account for cognitive content (Hutto & Myin, 2013); argued that teleosemantics trivializes the notion of representation (Ramsey, 2007); and stated that the introduction of functional notions leads to insurmountable problems (Fodor, 1992; Fodor & Piattelli-Palmarini, 2010). One such problem is the fact that not all representations seem to serve a biological function (Burge, 2010)—which is similar to notorious problems with the so-called pragmatist definition of truth. For example, a monk's thought that he should

be celibate does not make the thought contentless, even if it does not serve the need of biological reproduction. Obviously, not all criticisms are equally applicable to all function-based accounts, as there is a large variety of notions of function to which one can appeal.

In this paper, I focus on just one problem related to teleological theories of content, namely which notion of function makes content causally relevant. It has been claimed that some functional accounts of content make it causally irrelevant, or epiphenomenal; if that were true, then some notions of function would be disqualified from being the pillar of naturalized semantics. By looking closer at biological questions about behavior—questions that drive different but related explanations—I will argue that past discussion has been oriented towards an ill-posed question. There are more facets to biological functionality and causality relevant for explaining representational phenomena, and ignoring them will inevitably lead to unmotivated simplifications. In addition, accounting for different facets of functionality helps to dispense with mere intuition- (or introspection-) based specifications of cognitive phenomena.

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At the same time, I set aside other important questions related to the use of the notion of function in theories of content. In particular, I will not delve into vexed problems of normativity of content or of malfunction (Christensen, 2012; Davies, 2001; Neander, 1995), and barely touch upon questions of content determination. I argue that causal considerations justify a rather pluralistic view of biological functionality; but the application of such a pluralistic view to these other important problems is beyond the scope of this paper.

1. Causal relevance of function—as related to content

In current philosophical discussions, two main accounts of function dominate: the systemic account and the etiological account. The systemic (or dispositional) account is related to functional analysis (Cummins, 1975), and it identifies function with the capacity (or a disposition) of a complex system, to which parts of the system jointly causally contribute. Some variants of this account stress that the system in question has to be sufficiently complex so as not to make all capacities of all entities functional (Davies, 2001). The main complaint against this notion of function is that function ascriptions are largely interest-driven, and that it is virtually impossible to define the notion of malfunction, because the capacity of the complex system has to be actually exercised in order to deserve the title “function.” Nevertheless, some happily bite the bullet (Davies, 2000).

The etiological (or selected-function) account makes function depend on the history of previous tokens of a given type (Wright, 1973). In more modern versions, the etiological account is usually construed as a theoretical definition that aims to describe the real nature of the biological function, in particular as the notion of proper function (Millikan, 1984, 2002). As Millikan defines it:

[...] for an item *A* to have a function *F* as a “proper function”, it is necessary (and close to sufficient) that one of these two conditions should hold. (1) *A* originated as a “reproduction” (to give one example, as a copy, or a copy of a copy) of some prior item or items that, due in part to possession of the properties reproduced, have actually performed *F* in the past, and *A* exists because (causally historically because) of this or these performances. (2) *A* originated as the product of some prior device that, given its circumstances, had performance of *F* as a proper function and that, under those circumstances, normally causes *F* to be performed by means of producing an item like *A*. (Millikan, 1989, p. 288)

Entities that fulfill condition (2) are said to have derived proper functions. This account of function is linked to the notion of “selection for”: natural selection has selected *A* for performing *F*. Even if there is another property *P*, actually coextensive with *F* but not selected for, *P* is not the proper function of *A*. One of the main advantages of this account, according its proponents, is that function-ascriptions are more determinate; and some authors proposed a specific methodology in order to make ascriptions as determinate as possible; cf. Price (2001). In addition, it is claimed that one can define the notion of malfunction in etiological

terms: an item *A* malfunctions as long as it does not perform *F* in proper (“Normal”) circumstances (though this is debated; see Davies, 2001).

Two main complaints against the notion are the following. First, a physical replica of an item *A*, without its selection history, is devoid of etiological functionality. This point is usually made with reference to Donald Davidson's (1987) thought experiment about Swampman—a physical replica of Davidson that emerged out of a swamp because of some cosmic coincidence. Swampman has the same dynamical causal powers as Davidson, but no thoughts, according to his own theory, or to Millikan's etiological theory of content. This is, intuitively, a mishap—but the proponents of the theory usually bite the bullet, and in some cases their point is quite convincing (such as with Dretske's (1996) Twin-Tercel, a replica of his Toyota Tercel but without the relevant history). I will return to swamp stories later on. The second problem is that the first token, which had some property that becomes functional in subsequent tokens of the same type, is not functional either. In other words, new functionality is in its first instance classified as malfunction, and it becomes functional only when it's inherited and selected for.

These two accounts do not exhaust all possible notions of functions, of course, because the distinction is not a dichotomy. One obvious idea is to link both notions in a hybrid account (Godfrey-Smith, 1993), which seems cogent given that the notions arguably serve different purposes (Millikan, 2002). Another influential idea is to link functionality with the consideration that there is an especially important kind of systemic function related to self reproduction or maintaining the system and its continued existence (Bickhard, 2008; Bickhard & Richie, 1983; Christensen, 2012; Enç, 1979; McLaughlin, 2001). One particular advantage of this idea is that it allows accounting for malfunction: when the system fails to self-maintain, it is malfunctioning. Yet another special variant of the etiological framework is an account that relates function to the design of the system and the ontogenetic process of selection of the system's parts as types (Krohs, 2004, 2007). This etiological account does not have any special problem with Swampmen: if they had the same design process in terms of part-selection, they would still be functional. Also, this account does not have to deny functionality to first instances of the given functional kind. In some respects, it is similar to Mayr's idea of teleonomic processes as defined by their reliance on code information, or programs (Mayr, 1974). To finish this short review of current proposals for framing functionality, one may add the recent proposal to frame systemic function in modal terms, which is supposed to deal with malfunction, again without recourse to historical considerations (Nanay, 2011).

Deeper analysis of various notions of function is of course beyond the scope of this paper. What is notable for my purposes is that all variants are related in one way or another to the systemic notion or the etiological notion, so the main controversy is still between these two main kinds of function, with the design-based conception somewhat in the background. One argument often cited by proponents of these two kinds of function is that one of them leads to causal irrelevance of function.

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