

The Natural Origins of Content

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Abstract We review the current state of play in the game of naturalizing content and analyse reasons why each of the main proposals, when taken in isolation, is unsatisfactory. Our diagnosis is that if there is to be progress two fundamental changes are necessary. First, the point of the game needs to be reconceived in terms of explaining the natural origins of content. Second, the pivotal assumption that intentionality is always and everywhere contentful must be abandoned. Reviving and updating Haugeland’s baseball analogy in the light of these changes, we propose ways of redirecting the efforts of players on each base of his intentionality All-Star team, enabling them to start functioning effectively as a team. Only then is it likely that they will finally get their innings and maybe, just maybe, even win the game.

Keywords Content · Mental representation · Intentionality · Biosemantics · Neo-Pragmatism · Intentional stance

Introduction

Assume some states of mind are contentful. Assume it is possible, for example, to think thoughts that refer to things beyond themselves, thoughts that can be true or false. Where, when and how did (and do) such contentful states of mind come on the scene? How is content possible in a natural world?

Anyone seeking to address these questions is in the game of trying to account for the existence of content in the natural world. The basic rules are well known and simple. Any proposed explanations must (i) not presuppose content and (ii) have recognized scientific credentials.

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What's the current state of play? How are things shaping up in the field? Not fantastically well it appears, despite renewed interest and excitement about the prospects of solving this problem in recent decades. A big picture view of the contributions of the key players in this game makes this evident.

Back in the Ballpark

In his classic 1990 paper, 'Intentionality All Stars', Haugeland deployed a baseball metaphor in order "to outline and compare several of the main positions, and to name some of their foremost defenders – to chose, in effect, an *All-Star Team* for the intentionality game" (Haugeland 1990, pp. 386–7).

Haugeland's ballpark had three main types of defensive player, recognizing the risk of caricature. In similar tongue-in-cheek fashion, we follow Haugeland's lead in branding these three main types as neo-Cartesians, neo-Behaviourists and neo-Pragmatists. Neo-Cartesians, covering first base, are committed to the idea that "original intentionality is the province exclusively of contentful ... mental states" (Haugeland 1990, p. 388). For some Cartesianism has unwelcome connotations whereas others wear the label proudly (Fodor 2008, p. 12). For our purposes naturalists will qualify as a neo-Cartesian just in case, like Fodor, they give priority in the explanatory order to mental contents, treating them as original and prior to the existence of socio-cultural practices. Guarding second base are neo-Behaviourists. Their defining characteristic is that they are "suspicious of determinate (concrete) mental states; but, unlike paleo-Behaviorists, they take intentional ascription very seriously" (Haugeland 1990, p. 395). Finally, defending third, we find neo-Pragmatists who advocate that "contentful tokens, like ritual objects, customary performances, and tools, occupy determinate niches within the social fabric – and these niches 'define' them as what they are. Only in virtue of such culturally instituted roles can tokens have contents at all" (ibid, p. 404).

Apart from providing this helpful schema for locating three distinct approaches for addressing the question of how to naturalize content, Haugeland also offered a handy criterion for distinguishing between those occupying the outfield and infield. For him those closest to the action are those with the more developed and well worked out naturalistic theories of content.¹ Bearing this in mind, our interest – as was Haugeland's in 1990 – is firmly focused on what's happening in the infield. So looking around the field, how is the game shaping up today?

First Base: Neo-Cartesianism

Noticeably, there has been a lot of action around first base. The line-up of some of the main players has changed. When Haugeland wrote in 1990, he identified Fodor, Pylyshyn and Field as the most promising defenders of neo-Cartesianism. Since then

¹ Searle (1992) is squarely in the outfield, on the far right because his biological naturalism is explanatorily hollow (see Hutto and Myin 2013, ch. 7). For similar reasons, Haugeland (1990) placed Skinner on the warning track – up against the wall in center field, and observed that "Richard Rorty and Jacques Derrida are out in left field. They both play pretty deep. Derrida perhaps closer to the foul line. The position in a nutshell: talk about mentality and intentionality is just that: *talk*" (p. 387).

substitutions have become necessary. Fodor, who has been actively defending first base, has consistently dropped the ball. Godfrey-Smith (2006) provides a useful historical commentary. He helpfully reminds us why Haugeland was justified in identifying Fodor as star player back in 1990 while highlighting the serious decline in Fodor's fielding performance since then:

from the early 1980s to the early 1990s was the heyday of the program of giving naturalistic theories of mental representation. The work was pervaded by a sense of optimism; here was a philosophical problem that seemed both fundamental and solvable ... Fodor who once had detailed solutions to offer on a regular basis now seems to express only a vague hope that some form of informational semantics will succeed (2006, p. 42).

However, Godfrey-Smith's 2006 report is now importantly out of date. For since then Fodor has grown sceptical of the need to give a naturalized theory of content in anything like the standard neo-Fregean form that he once sought for. He recently revealed that:

The main change in my views over the (many, many) intervening years is that I now think we should also discard a thesis that most philosophers hold explicitly and that cognitive science has never considered denying: that words, concepts and the like have 'senses' (meanings, contents, etc.) as well as referents (Fodor 2013).

In what might be regarded as a remarkable shift of views, Fodor and Pylyshyn (2015) now hold that "Quine was right: ... meaning should be viewed as a suspect notion for purposes of serious theory construction" (p. 50). By their lights, "Like the Loch Ness Monster, meaning is a myth" (p. 58). At first glance, these statements might lead to some confusion about which base Fodor and Pylyshyn are now really covering. In fact they are still seeking to naturalize content in a neo-Cartesian way, it is just that they now conceive of content in thoroughly non-Fregean terms (see also Rupert 2011).

Fregean content is intensional (with an s) – "something's content is not the same as what it is about or represents, but rather determines what it is about or represents: thus if two things have the same content, the what they are about or represent is the same, but not vice versa" (Haugeland 1990, p. 384). There are other views of content available. Russell, for example, imagined that the basic units of content are terms (or concepts, as many would call them today) with which we can be intellectually acquainted. Terms can combine via external relations to form propositions – structured entities of thought that can be true or false. Russell's view of content differs importantly from Frege's. For him, terms and propositions not only constitute the ultimate bedrock of the world they are also potential contents of thought; content is thus not identified with the manner of apprehending what is thought about.

In going against Frege, Fodor and Pylyshyn – while doubtlessly still active, star players – have clearly adopted an unorthodox way of trying to defend first base. It remains to be seen if rejecting Frege will help, but there are reasons to suspect it won't overcome the fundamental problem. On the face of it, it is difficult to see how putting unreduced content into the world adds up to, or advances the prospects of, a naturalistic

theory of content. It does not in any transparent way show how we get from the non-semantic to the semantic. The worry is that this approach will either (i) presuppose rather than explain content – by putting the content in the world – or (ii) leave us without a story about how non-semantic causal interactions with non-contentful worldly items suffices for, or otherwise gives rise to, contentful representations.

Teleosemantics is undoubtedly the most popular way of defending first base today, advanced in different forms by Dretske (1988), Papineau (1987) and Millikan (1984, 1993, 2004, 2005). Simply put, the project of teleosemantics is to show how “teleology turns into truth conditions” (McGinn 1989, p. 148). Its most developed proposal gets its expression in Millikan’s writings. On her view, very roughly, a device has the teleofunction of representing Xs if it is used, interpreted or consumed by the system because it has the proper function of representing the presence of Xs. Proper functions are called upon to explain how it is that content is fixed by what organisms are supposed to do in their consumptive activity as opposed to what they are merely disposed to do. Invoking biological norms, teleosemanticists seek to explain representational properties without residue in naturalistic terms; by appeal to standards set, for example, by natural selection and individual learning and training.

Teleosemantics is, far and away, the favourite neo-Cartesian strategy; widely regarded as “the most promising” (Ritchie 2008, p. 161; Cash 2008, p. 104). Some aficionados go further, maintaining that teleosemantics is simply ‘inevitable’; *the only* possible way for neo-Cartesians to naturalize content. This claim will look compelling to anyone who holds, as Rosenberg does, that naturalism’s “best resource, perhaps its only resource, for solving the basic problem of intentionality certainly seems to be Darwin’s theory of natural selection” (Rosenberg 2013, p. 3).

Despite such buoyant assessments, there are serious reasons to doubt that teleosemantics can really defend first base properly. There is widespread agreement – amongst those with remarkably diverse philosophical predilections and agendas – that teleosemantics is fundamentally unable to deliver what it promises. The general consensus is that it lacks the resources for providing the required theory of mental content.

This verdict is repeatedly voiced. We are warned that: “Evolution won’t give you more intentionality than you pack into it” (Putnam 1992, p. 33). This is because there is a crucial distinction between “functioning properly (under the proper conditions) as an information carrier and getting things right (objective correctness or truth)” (Haugeland 1998, p. 309). The big problem is that even if evolution is, as one might plausibly suppose, enough to explain how an organismic response can be targeted at features of the world, this falls a good distance short of what is required to explain how an organism comes to have truth-evaluable mental contents, that can be true or false.

The bottom line, as Stich observed long ago, is that “natural selection does not care about truth; it cares about reproductive success” (Stich 1990, p. 62). Nor will it help to seek simply to trade in a notion of mental content cast in terms of truth conditions for a weaker one cast in terms of accuracy or veridicality conditions. The same problem recurs: “Evolution does not care about veridicality. It does not select for veridicality per se” (Burge 2010, p. 303). As Burge diagnoses it, the essential problem here is that there is “a root mismatch between representational error and failure of biological function” (Burge 2010, p. 301).

We agree. Despite failing to deliver what it promised, looking to natural selection can still deliver something – something very important for the team. We return in Section 3.1 to say more about why the widespread scepticism about the original

ambitions of teleosemantics is justified and what, after necessary modifications, its successor can reasonably contribute to the game of explaining the natural origins of content.

All in all, as things stand today it does not look like the All-Stars can stop runners at first base. Can second basemen do better?

Second Base: Neo-Behaviourism

Big players – Quine (1960), Dennett (1985, 1987) and Stalnaker (1987) – covered second base in Haugeland’s day. Their contribution was to recognize that making progress on the question of how to naturalise content requires giving pride of place to our practices of ascribing content. Second basers bid us to focus on the conditions under which we interpret a system’s behaviour as contentful. It is only in the context of such ascriptions that content shows up – only in that context can the question of content even arise. The explanatory starting point and style of play at second base is, for this reason, fundamentally different to that at first base.

As a way of naturalizing content, the second base strategy has always perplexed others on the team, and many in the stands. There is a serious puzzle at the heart of these proposals. Fundamentally, “neo-behaviorists ... must ascribe content” (Haugeland 1990, p. 395). A condition on making such ascriptions is that interpreters are able to adopt a stance from which the behavior of some system is regarded as contentful. Yet, famously, it is not clear how the requisite interpretative capacity that makes content ascription possible can be explained if one only sticks with the frugal resources of what Shea (2013) labels ‘mere’ ascriptionism. Mere ascriptionism commits to the idea “that content is no more than a useful notation that makes the system comprehensible to the interpreter, with no further reality in the system” (Shea 2013, p. 498).²

A classic second-base response is to insist that talk of ‘mere’ ascriptionism is misplaced. As long as it is predictively and explanatorily useful to ascribe content to *any* system there is “no theoretically motivated threshold distinguishing the ‘literal’ from the ‘metaphorical’ or merely ‘as if’ cases” (Dennett 2009, p. 343). There is just a continuum of cases. Taking this line seriously requires recognizing a “deep similarity between the simplest – one might as well say the most mindless – intentional systems and the most complex (ourselves)” (Dennett 2009, p. 343). Dennett’s example of the former is a macromolecule.

Not all second basers go Dennett’s way on this issue. For example, Cash (2008) who endorses Dennett’s basic strategy thinks the latter “has missed (or at least significantly underplayed) an important dimension of the situation when he rests his account of intentional states on pragmatic justification of the observer’s theory” (Cash 2008, p. 120). By Cash’s (2008) lights second basers owe us an account of the “ability to

² The idea that defenders of second base are committed to an utterly deflationary or mere ascriptionist strategy is inspired by Dennett’s ‘all there is’ remarks – such as, when he writes “all there is to being a true believer is being a system whose behaviour is reliably predictable via the intentional strategy, and hence all there is to really believing that p (for any proposition p) is being an intentional system for which p occurs as a belief in the best (most predictive) interpretation” (Dennett 1987, p. 29). The charge of mere ascriptionism is also licensed by his definition of intentional systems, which he insists, “does not say that intentional systems *really* have beliefs and desires, but that one can explain and predict their behavior by ascribing beliefs and desires to them” (Dennett 1985, p. 7, emphasis added).

ascribe intentional states to others” (p. 120). What is needed is a developed naturalistic account of how it is possible for there to be content ascribers; how is taking up the intentional stance possible. What is needed is an explanation of how content ascribing stance-taking capacities could have arisen without presupposing the existence of content in the telling of that story.

Obviously, it is not open for second basers to doubt the reality of stances. But what is a stance? Haugeland (1993) tells us, “on the face of it, is a kind of posture or attitude that somebody can take toward something, a specific way of regarding and dealing with it” (p. 65). Yet stances cannot be just any sort of posture. Taking up the intentional stance involves having contentful attitudes about other systems such that one can ascribe physical properties or believed contents to them.

There are two things to note here. Firstly, not all intentional systems are capable of taking up a stance. The assumption that being able to adopt the intentional stance requires adopting genuinely contentful attitudes provides a principled basis for drawing a distinction within the broader class of intentional systems. Secondly, explaining the existence of stance-taking attitudes wouldn’t be a problem if we already had a successful naturalistic account of content – say in first base terms. But if we had such an account we wouldn’t be trying to stop the runner at the point of second base anyway.

The trouble is that neo-Behaviourists limit themselves to overly austere resources when trying to tell the required story about stance-taking capacities. The resources they call on – while they do not assume the existence of content – are nevertheless much too thin to explain how content and content-ascribing capacities could have come on the scene.

For example, the canonical neo-Behaviourist, Quine (1995), makes an effort to explain how, thanks to our common biological heritage, each individual’s private standards of perceptual reaction harmonize publically. Quine starts by invoking evolutionary considerations in order to explain why we react in perceptually similar ways to salient stimuli. He then extends this story by postulating further forces that ensure yet more public harmony.

The trouble is that, being a hardcore naturalist, Quine restricts himself to a very limited set of tools. He insists that we must begin only by positing the stimulation of “nerve endings rather than more distal features of the physical world ... [in order] to narrow our sights to the limited physical contacts on which our theory of the world is based” (1995, p. 18). This forces Quine to operate within a third personal, theoretical and observational framework, making inherently problematic his version of the story about how minds first meet and begin to respond to a shared world.

Lacking the right starting point it is hard to see how what second basemen have to offer could possibly explain the natural origins of content. Given these limitations defenders of second base are bereft of a convincing explanation of content. Despite helping us to get clearer about what needs explaining – thus pointing us in the right direction – neo-Behaviourism also fails to provide what is needed for a naturalistic account of content. Because of this there is nothing to stop players from the batting team happily running forward to third base. Is there any chance of stopping them at third?

Third Base: Neo-Pragmatism

Neo-Pragmatists hold that “mental properties are derived from social properties and not vice versa” (Clapin 2002, p. 17). How so? In sketch, the proposal is that contentful

states of mind develop through processes of engaging in established socio-cultural practices.

According to third basers, we can only make sense of contentful thinking in the context of shared ways of life in which social norm compliance is developed, maintained and stabilized through practices. Such practices are not only based on our shared biology but in social engagements and cultural devices that evolved over time, especially linguistic tokens, the primary bearers of semantic content. Accordingly, the capacity to have contentful thoughts depends essentially on engaging in socio-cultural practices in which biologically inherited capacities are scaffolded in open-ended ways.

Haugeland (1990) gives one of the more developed expressions of neo-Pragmatism. He posits a mechanism for social conformism – a mechanism that oils the wheels of the kinds of social engagement that makes contentful thought possible.

Metaphysically, conformism works like the mechanism of inheritance and natural selection ... it engenders a new *kind* of order ... the order and structure in cultural institutions and practices is not only vastly greater than in any genetic or adaptive ethology, but of a new and different kind – made possible by the distinctive mechanism of social conformism ... whole new categories of phenomena emerge, including, ... social norms and original intentionality (Haugeland 1990, p. 407).

This account of how norm-abiding practices might have arisen provides the basis for a naturalistic account of how it came to be that “tokens that have proper linguistic uses in relevant circumstances, hence play linguistic roles ... serve as the primary bearers of semantic content” (Haugeland 1990, p. 410). Or again, that: “the primary bearers of content are semantically articulated symbols, occurring in appropriate dynamic patterns” (Haugeland 1990, p. 412).

In order to explain the social institution of content Haugeland (1990) posits a mechanism of social conformism and compliance.³ There is agreement that a distinctive tendency to cooperate, coupled with socio-cultural learning which is supported by environmental scaffolds, played a critical role in enabling contentful forms of cognition to emerge (Tomasello 1999; Sterelny 2012). There is on-going debate about whether a single mechanism – for social and cultural transmission – or a suite of different ones, boosted by feedback loops, lies at the heart of such developments.⁴ Whatever the outcome of this debate, no one doubts that a capacity for social conformism will form at least part of the best explanation of how human cognition did, and does, come into being.

This conclusion fits with Tomasello’s more general observation that a capacity for cumulative cultural evolution – and not mere social learning – is needed to account for human cognitive accomplishments. For only a mechanism of that sort could account for

³ Thus, “when community members behave normally, how they behave is in general directly accountable in terms of what’s normal in their community; their dispositions have been inculcated and shaped according to those norms, and their behavior continues to be monitored for compliance” (Haugeland 1990, p. 406).

⁴ Tomasello (1999) gives reasons for believing “that the amazing suite of cognitive skills and products displayed by modern humans is the result of some sort of species-unique mode or modes of cultural transmission. The evidence [for this] ... is overwhelming” (p. 4). Sterelny (2012) argues the story will turn out to be much more complex.

the way in which humans are able to socially transmit and stabilize their achievements in the form of modifiable cultural practices, traditions and institutions. This is important for explaining how socio-cultural traditions and artifacts – including linguistic – are stable enough to be augmented over time.⁵

Still many regard neo-Pragmatism's third base strategy as hopeless. Many reject the very idea that socio-cultural practices *might possibly* explain the origins of contentful thought on the basis of considerations of these sorts – considerations that ensconce the assumption that capacities for contentful thought must be in place prior to learning the relevant socio-cultural norms. Fodor and Pylyshyn exhibit this sort of worry:

Language learning – including, in particular – first language learning *takes a lot of thinking on the part of the learner*. So, if you have to be able to talk before you are able to think, it follows that you can't learn a first language. This seems to be an embarrassment since, in point of fact, many children do so (Fodor and Pylyshyn 2015, p. 14, emphasis added).⁶

A driving concern behind these sorts of objection is that any purported instance of conformity to a social norm will only really count as such if the agents in question harbour beliefs with the right contents – beliefs about what others are likely to do. Neo-Pragmatist proposals about the origins of content will be dismissed by anyone who accepts that contentful attitudes are needed to explain compliance to a social norm (Colombo 2013).

It is easy to rack up more examples of reasoning in the same vein that leads to the conclusion that the neo-Pragmatist proposal about the origins of content is doomed from the start (see for example Machery 2011, pp. 94–5). The common denominator in these assessments – the real reason – why neo-Pragmatism is so unpopular is that it is perceived to embed an essential tension.

Put simply: The prospects of providing a workable neo-Pragmatist account of the origins of content in socio-cultural terms are scuppered just in case:

1. Participating in and mastery of socio cultural practices requires intelligence;
2. Intelligence requires intentionality;
3. Intentionality requires content.

Haugeland, one of the main spokespersons for neo-Pragmatism, highlights this essential tension. On the one hand, he tells us that neo-Pragmatism “is primarily distinctive in making original intentionality essentially a social institution – part of a way of life engendered and maintained by communal conformism” (Haugeland 1990,

⁵ Unquestionably “none of the most complex human artifacts or social practices, including symbolic communication, were invented once and for all at a single moment by an individual or group of individuals” (Tomasello 1999, p. 5).

⁶ Elsewhere, these authors make the same point in various other ways too: “it’s hard to imagine how first-language learning could proceed in a creature that lacks quite a lot of prior conceptual sophistication” (Fodor and Pylyshyn 2015, p. 15).

p. 414). Yet, on the other hand, he tells us – as a consequence – neo-Pragmatism: “leaves no room whatever for original intentionality in any animals, (asocial) robots, or even isolated (unsocialized) human beings” (Haugeland 1990, p. 414).

The trouble is that this last claim apparently leaves neo-Pragmatism without a means of accounting for the kinds of intelligent thinking that are needed for explaining participation in the relevant socio-cultural practices.

The puzzle is this: if all intentionality is of a piece and only derives from social practices, how is it possible that the sort of intelligent, recognitional capacities needed to explain participation in those social practices could be in place prior to their mastery? Unless intentional content is presumed to be already in place this seems impossible. And, if this is assumed then we need to have an account of content before we get to third base.

Unless the essential tension is resolved then mainstream cognitive science looks to be fully justified in assuming a “hierarchically reductionist picture ... [in which] social practices are composed of, and explained by, persons with minds” (Clapin 2002, p. 17).

Towards a Winning Strategy: Tactics Base-by-Base

Game over? It is – as long as a pivotal assumption, made by those on each base, remains in play. The offending assumption is that “to have intentionality is to have (semantic) content” (Haugeland 1990, p. 384). Assuming this is at the root of the team’s problems: It causes first basers to try to account for content at the wrong level; it causes second basers to presuppose content without explaining it; and it commits third basers to an essential tension. This has kept Haugeland’s dream team constantly fielding – for over 20 years – without ever getting up to bat, not even once!

The only way forward is to reject this assumption, distinguishing primitive, contentless from content-based forms of intentionality. By recognizing that intentionality is not all of a piece the team will finally be able to coordinate their efforts. Of course, this will involve rethinking the proper work of those playing at each station.

First things first: before saying how the players in various positions can best contribute to winning the overall game, it is crucial to be clear what sort of game they should be playing. Traditionally the game of naturalizing content has been thought to require providing reductive explanations that show how content really just equates to some decidedly natural phenomena. It would have to be demonstrated that content could be understood, without residue, in wholly non-contentful terms, say, identifying it with some natural phenomenon such as causal relations, nomic information, biological functions or the like.

Rosenberg (2013) provides a standard formulation of what motivates the game of naturalizing content and what it demands:

The basic problem that intentionality raises for naturalism has been obvious enough since Descartes or even Plato [Meno, 99]: how can a clump of matter, for example, the brain or some proper part of it, have propositional content, be about some other thing in the universe. What naturalism requires is a purely physical, causal account of intentionality that itself makes no overt or covert appeal to semantical concepts (Rosenberg 2013, p. 3).

If that's the game it is hardly surprising we've been playing it since Plato's day. To make any headway we must forgo attempts to provide purely reductive explanations in favour of explaining how it is possible that content could arise in the natural world. Instead of trying to naturalize content we should seek to explain the natural origins of content (see Cash 2008, p. 128).

To answer the origins question naturalistically requires appealing only to mechanisms that do not introduce anything mysterious into the story. This can be done under the auspices of Relaxed Naturalism. For Relaxed Naturalists, the philosophical agenda is to clarify the nature of some *explanandum* by investigating it in a way that draws on and seeks to harmoniously integrate the findings of a wide range of relevant empirical sciences. Thus when it comes to explaining the origins of content Relaxed Naturalists are free to appeal to any of a wide range of empirical sciences: anthropology, developmental psychology, comparative psychology, cognitive archaeology, social neuroscience and so on.

Still Relaxed Naturalists accept that “a naturalistic account of mental content must provide *illuminating explanatory connections* between representational content and properties that are non-semantic, non-mental and non-normative. Furthermore, it must show that content properties supervene on the physical, or at least must be compatible with such supervenience” (Shea 2013, p. 497, emphasis added). The point to note is that Relaxed Naturalists do not unnecessarily restrict the tools by which those illuminating explanatory connections might be forged. Unlike the traditional game of naturalizing content the natural origins game is one we have a chance of winning, if those on each base play their proper parts.

First Base: From Teleosemantics to Teleosemiotics

Distinguishing intentionality construed as target-based from intentionality construed as content-involving provides first basers with a clear and achievable role to play in the All-Star team. This assumes there are two kinds of intentionality. The former, weaker notion of intentionality, call it Ur-intentionality, is not only conceptually distinct but picks out a quite independent phenomenon from the kind of intentionality that involves semantic content and ‘aboutness’.⁷ Bearing this in mind, in our view first basers’ proper contribution to the larger team should only be to clarify the nature of Ur-intentionality and explain its naturalistic origins.

Why? As section one highlighted, the general consensus is that teleosemantics, the most promising naturalized theory of content, cannot deliver on its promises. Famously, Fodor (1990) identified a crippling problem for any teleosemantic theory of content that appeals to historical explanations in order to say what in ancestral environments fixed representational content. The trouble, he observed, is that selectionist explanations, like

⁷ Some may balk at counting Ur-intentionality as any kind of intentionality, rejecting the very idea of Ur-intentionality out of hand. This is because they define intentionality and aboutness in terms of content. Intentionality is defined as “that property of many mental states and events by which they are directed at or about or of objects and states of affairs in the world” (Searle 1983, p. 1). No naturalist should be swayed by arguments based on a stipulated definition of intentionality. Intentionality is a natural phenomenon and as such it can come in many forms. The extended use we propose resurrects the idea of intentionality as “a medieval notion with philological roots in Aristotle and etymological roots in the Latin verb ‘intendo’ meaning “to aim at” or “point toward” (Flanagan 1991, p. 28).

historical explanations, are transparent hence extensional. Teleosemantics accounts are incapable of designating one description – out of an indefinite number of co-extensional alternatives – as fixing *the* content of a representation.

Referring to the timeworn example, Fodor’s take-home message is this: “Darwin doesn’t care how you describe the intentional object of frog snaps ... Darwin cares how many flies you eat, but not what description you eat them under” (Fodor 1990, p. 73, see also Rosenberg 2013, p.4).

Fair enough. But can we put the basic strategy of teleosemantics – that of looking to natural selection to understand the most basic forms of intentionality – to fresh use? Appeals to natural selection fail to naturalize content but they suffice to explain why certain organisms are responsive to a selective range of worldly items. Biological explanations can tell us what ancestors of a particular sort of device in fact did target and thus what fixed the range of things descendant devices now respond to, extensionally speaking. Thus biology provides adequate tools for making sense of something more modest than content – it provides what is needed to understand and explain responses exhibiting a kind of Ur-intentionality that results from the targeted directedness of past organisms (Hutto 2008, ch. 3; Hutto and Myin 2013).

Trying to account for Ur-intentionality in this way is a legitimate task for first basers – one that stays true to the driving idea behind teleosemantics that evolved structures can have a kind of ‘specificity’ or ‘directedness’. With Godfrey-Smith (2006) we regard this as essentially correct. As Godfrey-Smith (2006) correctly observes: “there is an important kind of natural involvement relation that is picked out by selection-based concepts of function. But this relation is found in many cases that do not involve representation or anything close to it” (Godfrey-Smith 2006, p. 60).

Reconceived along these lines the job of first basers is to explain why and how it is that some organisms’ current response tendencies are what they are, to say how they came to be ‘set in place’ by learning or evolution. This would be to explain how and why a given creature has “been *set up to be set off* by something” (Prinz 2004, p. 54, emphasis added).

The good news is that Fodor’s objection does not apply to the softer ambition of explaining Ur-intentionality by appeal to the selective pressures that will have operated on ancestor organisms. Understanding the current range of things to which organisms respond as a disjunction of counterfactual items is a feature of Ur-intentionality, not a problem for it. Not being a theory of intentional content familiar worries about the determinacy and specificity of content do not apply.

Most importantly, focusing only on Ur-intentionality answers a real *team* need – it enables the All-Stars to overcome the essential tension, showing how there can be a form of intentionality and thus intelligent responding that doesn’t presuppose the existence of content from the get go. This is exactly what is needed at this stage in the game.

Second Base: From Mere Ascription to Serious Ascription

Distinguishing intentional patients and intentional agents provides first basers with a clear and achievable role to play in the All-Star team. This assumes there are two kinds of intentionality.

What job should second basers be doing? Recall, they assume that content depends on certain ascriptional practices. As argued in 1.2 making sense of content in this way requires distinguishing between intentional patients and intentional agents. Intentional

patients are creatures that “might be said to ‘have’ beliefs desires and intentions, in the passive sense that an observer can ascribe intentional states to them” (Cash 2008, p. 125). Intentional agents are beings that can “*ascribe* intentional states qua intentional states” (Cash 2008, p. 125).

Second basers must acknowledge this distinction in order to perform their central task of clarifying the nature of content ascribing practices. They must do so without falling foul of two common errors – errors that would lead them to undermine the work that needs to be done at first base, thus jeopardizing any possibility of accounting for the natural origins of content.

One error is to overplay the similarity between intentional patients and agents, leading to a blurring of the distinction between intentionality as content-involving and Ur-intentionality. Whereas qualifying as an intentional agent requires content-involving capacities, being an intentional patient need not. Consequently, it is only by respecting the differences between patients and agents that a story about the emergence of content can start to be told. As the analysis of Dennett’s theory in 1.2 showed, overlooking these differences results in presupposing content from the very start.

Another error is to overplay the difference between intentional agents and patients. Doing so results in restricting intentionality to a small domain, one proper to intentional agents. This is the royal road to conceiving of intentional patients in mere ‘as if’ terms. But to go this way is to assume that the behaviour of organisms that do not ascribe intentional states cannot by any other means be conceived as truly intelligent. This is a fundamental mistake that makes it look as if there is an essential tension, namely the idea that all intentionality is contentful.

There is something else to guard against here. Failure to observe that intentionality comes in different forms can encourage the idea that it is only against the background of ascriptional practices that we can make sense of organisms targeting anything at all. For example, Cash (2008) holds that “There is no such thing as the function of a biological mechanism, *simpliciter*, independent of human judgments, questions and explanatory interests” (p. 116). This is to treat Fodor’s objection to teleosemantics as if it were a universal acid that threatens to undermine any talk of targeted responding that stops short of intentional content altogether. The root worry is that appeals to biological function to explicate the notion of a target would be illegitimate if not already cashed out in terms of an ascriptional practice.

This is a mistake. Fodor’s objection should not cause us to doubt the legitimacy of functional explanations in the biological sciences across the board. If even a modest understanding of biological functions, such as described in the previous sub-section, is threatened by Fodor’s challenge to teleosemantics, then Darwin too must go.⁸ There are historical facts about what ancestral organisms interacted with in their environments that shaped, and currently constrain, the response profiles of members of any given species. Noting the existence of such facts does not, of course, suffice as a reply to Fodor’s worry against teleosemantic theories of content; it does not exclude co-extensional ways of specifying what organisms are targeting. Nevertheless, there is no reason to think that the facts in question are in any way, even partly, dependent on

⁸ Fodor and Piattelli-Palmarini (2010) advance general worries about Darwinism – and the idea that biological explanations cannot be taken seriously because such explanations are, necessarily, intentional (with an s). To see how these worries are easily defused see Rosenberg (2013).

our ascriptional practices. Darwin cares that frogs eat flies, even if not under any description.

In view of all this second basers need to focus their energies on clarifying the special nature of our ascriptional practices, and beware of underplaying or overplaying the similarities between intentional agents and patients. Bearing this in mind will allow second basers to appeal to facts – facts about Ur-intentionality – needed to make sense of our scientific and ascriptional practices.

But the question remains how did content ascribing practices come on the scene in the first place?

Third Base: From Social Conformism to the Origins of Content

To play their part third basers must acknowledge the distinction between Ur-intentionality and content-involving intentionality. As we have seen the distinction plays a central role for both first and second basers; their respective contributions are aimed at understanding one or other of these two forms of intentionality. What is missing from the story is an account of how to bridge the gap between the two. This is precisely what third basers can provide. There are two things to note.

First, if third basers are to succeed, they must recognize the existence of Ur-intentionality; for only then can the essential tension be overcome. But recognizing Ur-intentionality, as reconceived by first basers, has other advantages; it provides fresh tools for neo-Pragmatists to use in explaining how organisms progressed from Ur-intentionality to content-involving forms of intentionality.

Elaborating a little, what the neo-Pragmatist account sketched in 1.3 lacks is an account of how social practices are possible without having concepts about the other's beliefs, desires, intentions and thus the concept of belief, intention or desire. A third base account of the emergence of content that avoids the essential tension places content-involving intentionality only in the context of special sorts of socio-cultural norms. It also assumes that our species-wide biologically based tendencies constitute the platform through which content first arises on the scene. This is to take for granted that biological forces put in place mechanisms that enable individual learning which work in conjunction with mechanisms for the social inheritance of culturally evolved devices.⁹

These mechanisms do not require individuals to purposefully comply with rules from the get go. Instead the mechanism of social conformity that gets the practice of learning and teaching off the ground can be understood as a mechanism to be *set up by others* and to *set up others*.¹⁰

Secondly, third basers also need to ensure that their explanations respect the special properties of ascriptive practices. They have powerful explanatory tools – such as

⁹ In order to explain the mechanisms that make possible mutual learning and interaction third basers can and must help themselves to a richer set of tools than the ones available to neo-Behaviourists like Quine. Thus, when appealing to biology to understand interaction and similarity in responses they must not understand the “individual tendencies to find certain things perceptually similar ... [as] ... a matter of effect on the subject: a question of reaction” (Quine 1995, p. 17). Rather the similarities in question must be understood in terms of subjects responding to *the same things* in the same basic ways.

¹⁰ See Tomasello (1999), Rakoczy et al. (2008) and Csibra and Gergely (2009). These authors claim that learning and teaching are biologically inherited capacities with species relative traits. They all argue that teaching and learning norm-abiding behaviour are to be understood as biologically inherited human capacities.

mechanisms of social conformism – at their disposal. But to make proper use of them they must not confuse their task with that of the second basers. Rather they must make use of the descriptive, clarificatory work of second basers. Failure to do so results in the temptation to conflate truth-telling practices with consensus, misunderstanding the very nature of the practices at issue. What is lost in the process is the possibility of making proper sense of truth talk.

Third basers must always keep in mind that truth-telling practices are special in as far as they involve not only socially responding to things but doing so by representing them as being thus and so, independently of what we say about them.¹¹ In contrast with other intelligent dealings with the environment, these content-involving practices contain a special sense of going wrong: this is not just falling in line with what is acceptable for the community but being correct or incorrect according to how things are anyway. These practices differ essentially from ways of dealing with the world that do not represent it.

Keeping this in mind is essential for third basers; their job is to give a naturalistic explanation of how normative content-involving practices evolved without trying to justify them in terms of their proposed explanation.¹² Once their quarry is in focus, neo-Pragmatists will be able to develop credible stories about the emergence of content, providing the details that are still missing in the natural history of its origins

Getting the All-Stars Back in the Game

It should be clear which jobs must be carried out at each base for the whole team to play together effectively. Teleosemiotics provides the platform - the first step - that allows us to understand the emergence of content in a naturalist framework. It provides a conception of basic cognition and intelligence as directedness and responsiveness understood in biological terms, as capacities based in facts of natural history. This allows us to understand organismic capacities to respond to the environment and each other without presupposing content. Second base elaborates the connection between content and ascriptional practices, pointing out the continuity of different kinds of intentionality and their differences. Third basers have the task of telling the story about how contentful practices of the sort described by ascriptionists acquired their actual form by describing the mechanisms that account for their emergence.

We realise that by describing the overall strategy we have only provided the prolegomena for the naturalistic enterprise we recommend. To be sure, fleshing out the details of this story is still an open matter that calls for the integration of work from a whole range of empirical scientists and philosophers.

Much remains to be said about the nature of language, social engagement and cognition, and cultural devices – to name a few crucial topics – if the details of this story are to be filled in. And there are plausible candidates of the sort needed coming from the natural and human sciences alike that can help filling in such details. The

¹¹ Truth-telling practices satisfy what McDowell calls “a familiar intuitive notion of objectivity” an idea that requires “the conception of how things could correctly be said to be anyway – whatever, if anything, we in fact go on to say about the matter” (McDowell 1998, p. 222).

¹² Second basers realise that we cannot use evolution to justify any of our content attributing norms (Cash 2008, p. 100). Ascriptional practices involve a kind of circularity in that the only justification that can be given of a particular ascription is in terms of other contentful ascriptional devices (Davidson 1984).

important point being made here is that by integrating the contributions of different theories a possible story can start to be told about the natural origins of content.

Conclusion

Summing up. Our diagnosis is that too many star players have been trying to win the naturalizing content game by themselves, undermining the efforts of their teammates in the process. It must be remembered too that baseball is ultimately a team game and no individual player can cover all of the bases.

Our solution is to put the All-Stars under new management. The players on each base must be given new direction, demarcating their specific roles in the larger game. Only then will the All-Stars start to function effectively as a team – only then is it likely that they will finally get their innings and maybe, just maybe, win the game.

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