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This is the accepted version of a paper published in *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences*. This paper has been peer-reviewed but does not include the final publisher proof-corrections or journal pagination.

Citation for the original published paper (version of record):

Brunnander, B. (2008)

Is the language of intentional psychology an efficient tool for evolutionists?.

Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences, 39(1): 147-152

<http://dx.doi.org/10.1016/j.shpsc.2007.12.007>

Access to the published version may require subscription.

N.B. When citing this work, cite the original published paper.

Permanent link to this version:

<http://urn.kb.se/resolve?urn=urn:nbn:se:su:diva-17146>

Is the language of intentional psychology an efficient tool for evolutionists?

Abstract:

The language of intentional psychology is commonly used as a means of addressing issues concerning selection. This habit is generally considered an efficient shorthand, but oft-reported misunderstandings leave room for doubt. I stress the general point that efficiency of a mode of expression is an empirical matter, deserving the same treatment, theoretically and methodologically, as other such matters. Mistaken assumptions regarding the relevant cognitive capacities may make for inefficient communication, and discourse about human evolution is a plausible case in point.

Key words: Intentional shorthand, misunderstanding, selectionist thinking

1. Introduction

Many theorists guided and inspired by evolutionary theory are making claims for the unifying power of this theory.ⁱ The claim is that practitioners in many areas of psychology and the social sciences should benefit from standing on a steady foundation of evolutionary thinking (see, for instance, Daly and Wilson, 1988, Barkow et al., 1992, Pinker, 1997, Buss, 1999). More specifically, it is claimed that careful selectionist thinking should be applied to aid in finding out how the human mind works.

As for selectionist thinking, it is no secret that it is frequently presented in a shorthand manner. The issue that is of primary concern in this paper is the habit to frame evolutionary discourse of behaviour in language normally used to talk about the strivings and motivation of individuals; the language of intentional psychology. Histories of selection are pondered by talking about organisms ‘using strategies’, ‘doing what is in their reproductive interests’, ‘solving (adaptive) problems’, ‘predicting fitness consequences’, ‘making moves in arms races’, ‘being uncertain about paternity’, and what have you. This way of speaking seems, to quote the biologist David Sloan Wilson, to invoke ‘...a cryptic form of motivation, based not on what the actor thinks or feels but on what the evolutionist must account for while calculating gene frequency change.’ (Wilson, 1998, p. 480).

Assume that there is a significant correlation between an environmental cue C and some fitness enhancing feature F (to illustrate, let C be a particular scent in prospective mates and F be high resistance to parasites). In speaking of humans, saying that a person P's preference for C is a strategy for obtaining (someone with) F, that he uses C to predict F, or that he chooses C over alternatives because it is in his interests to obtain (someone with) F, would on a natural reading be taken to say that P's brain somehow, consciously or not, has associated C with F. Thus, on this reading the connection is made within the organism, and this mind-internal association is causally involved in guiding behaviour. On this reading the connection is relevant in accounting for the ontogenesis of the behaviour, and this pertains to what biologists sometimes refer to as *proximate* explanation. However, evolutionists will use intentional formulations without meaning to imply that the significant connection is registered within the brains of the organisms at hand. All that is required is that there is (or was) a correlation between C and F that explains why a type of organism that happened to prefer C became established. On this reading the connection is invoked in what is sometimes referred to as an *ultimate* explanation; the connection between C and F is invoked to account for the *selection* of the type while being silent on the development of the preference for C (except for assuming that reliably transmittable units such as genes make a difference). The latter reading does not preclude the possibility that the connection is made in the brain, but no such connection is implied by an ultimate interpretation. So, the linguistic habits of evolutionists have us straddle the divide between proximate (ontogenetic) and ultimate (evolutionary) issues; the language of intentional psychology is used in both endeavours.

In view of what has been said above it is worth noting that evolutionary theorists think that they are frequently misunderstood. Many accounts deal with "popular" misunderstandings, and quite a few workers in the field hold that their views are met with an unmotivated hostility (Buss, 1994, Wilson, 1994, Alcock, 2001, Plotkin, 2001). One frequently reported misunderstanding is to construe selectionist proposals as proposals about underlying intention (reported in Daly and Wilson, 1988, Dawkins, 1989, Alcock, 2001, more extensive treatments being Symons, 1992, and Buller, 1999). Daly and Wilson claim that the '...distinction between fitness consequences and proximal objectives is consistently misunderstood by those social scientists who point to vasectomies or adoptions as evidence against selectionist

models.’ (1988, p. 7). Now, one could ask: Why do those social scientists consistently misunderstand this distinction? How have they come to interpret what is really talk about fitness consequences as talk about motivational objectives? For anyone seriously interested in explaining, and correcting, this the combination of intentional shorthand on the one hand, and misunderstandings that *mirror that shorthand* on the other, should at least merit some consideration.

There is good reason to take claims about efficiency of linguistic frameworks as empirical ones. If so, considerations about empirical support, testability, and theoretical underpinnings are as appropriate in such contexts as in standard scientific enterprises. The price we may pay for not being empirically minded about the usefulness of our modes of presentation is the wasting of valuable time; we may find ourselves struggling to undo the impact our account actually has on human minds. A motivation behind this paper is that I believe that evolutionists are in such a predicament.

I will speak of the intentional shorthand as being metaphorical. Perhaps this can be disputed. Still, whether it involves metaphor or not the situation is such that we have two non-equivalent interpretations and a *prima facie* risk of having contextually inappropriate responses cause trouble when discussing evolutionary matters.

The ensuing structure will be as follows: In Section 2 I illustrate the empirical nature of claims about efficiency of exposition. Section 3 presents a commonly occurring but misconceived approach to clarifying the intentional shorthand. In Section 4 I argue that the utility of the shorthand must depend on to what extent the relevant cognitive processing is *encapsulated*, an issue that has yet to be settled empirically. Section 5 takes a brief look at research on metaphor processing.

2. Efficiency of shorthand qua empirical issue.

I take it as obvious that the truth concerning the efficiency of the intentional shorthand is, one way or the other, an empirical issue. I don’t mind evolutionists claiming that they *intend* intentional language to be useful shorthand for selectionist considerations, but to what degree it *is* useful will depend on what effects such talk has on human minds, and standard assumptions about this might simply be mistaken.

Consider the following by way of comparison: A researcher suspects that noise has detrimental effects on mental arithmetic. A way to test this is to use two properly sampled and sufficiently sized groups and have them conduct the same arithmetic tasks, the experimental group but not the control group being exposed to noise. Such a test may well show a significant detrimental effect associated with noise. If so we wouldn't hesitate to assume, with the standard provisos, that human brains are wired such that noise has a bad impact on mental arithmetic.

Now, assume instead that a researcher suspects that shorthand S has detrimental effects on our understanding of the subject matter at hand. It seems clear that the same statistical techniques and the same logic apply to this question as to the former. If indeed an experimental group who was presented an account utilising S fared significantly worse than a control group as for misunderstandings, we would be entitled to say what we would say in the case regarding noise and mental arithmetic, or in any similarly structured case. Thus, we would be entitled to assume that S has detrimental effects on understanding of the subject.

I believe that were we to conduct studies such as the one hinted at we would detect a significant detrimental effect associated with the use of the language of intentional psychology in discourse on human evolution. Not having conducted any such studies, however, my current point is merely to highlight the empirical nature of the issue.

I think the following is fairly representative of how evolutionists comment on their mode of exposition. James Lloyd (1980) discusses the use of, among other things, intentional shorthand in sociobiology. He claims that it is '...but time- and space-saving shorthand, and fun.', and that if '...a reader can't translate, and tell from the text what the long story is, then the problem is not one of diction, and it runs too deeply to be bridged in an extra sentence or word substitution.' (1980, p. 3, quoted from Alcock, 2001, p. 25). It is not clear what Lloyd is suggesting the problem *is* if a person can't translate. What makes him so sure that sensible word substitutions wouldn't facilitate understanding? How does he know that the exposition *is* indeed time-saving in all contexts where it is used? I am prepared to grant that evolutionists are in a position to tell whether the shorthand is time-saving for *them* as they talk or write about evolutionary matters. However, the goal is presumably to succeed at communicating these matters to an audience, sometimes one consisting of non-experts,

and this process could possibly take longer with the shorthand than without it. In order to refute this hypothesis we would need to have data from which we could estimate the actual effects of the shorthand and Lloyd has nothing of the kind. Neither has Alcock who presents Lloyd's comments with approval. These scientists, and most of their colleagues, would not consider it possible to settle the impact of noise on mental arithmetic as effortlessly. One should perhaps be especially open to question the purported efficiency of one's mode of presentation if one finds oneself, as does Alcock, listing widespread and recurring misunderstandings.

Evolutionists frequently do feel the need to provide passages where their way of speaking is addressed. Such instances of clarification are presumably there because the authors think it at least not entirely unlikely that a reader would misunderstand the account otherwise; it is the clarifications that are supposed to assure the innocence of the shorthand. Since the intended role of the clarifying instances is to block what is inappropriate about the formulations used, clarifications must be held to be *causally effective* in this respect. Now, a device might of course fail to fulfil an intended role simply by lacking the envisaged causal power. There are at least two ways, relevant for my concerns, in which purported clarifications may fail to block confusion. The first and most obvious way is by being beside the point. The second and less obvious source of failure is the following: clarifications might, even if accurate, be causally insufficient in blocking undesired reactions because of significant *encapsulation* of (some of the) processes that are activated by the mode of presentation. I will deal with these options in turn, and then take a brief look at relevant research.

3. Unsuccessful attempts at clarifying intentional language.

I take it to be fairly obvious that problems are to be expected if clarifying instances are not very clarifying. When it comes to efforts to clarify the intentional idiom in evolutionary discourse a recurring feature is irrelevant applications of the term 'conscious' and its relatives. A common way to "excuse" motivation-talk is to stress that one is not implying that the individuals in question are *consciously* trying, for instance, to get their genes into the future. By way of example, in *The Selfish Gene* Richard Dawkins reminds the reader that he is using the shorthand of '...thinking of the individual as though it had a *conscious* purpose [to

propagate its genes].’ (1989, p. 146, emphasis added). In *The Evolution of Desire*, David Buss puts it as follows (1994, p. 6, second emphasis added):

Although the term *sexual strategies* is a useful metaphor for thinking about solutions to mating problems, it is misleading in the sense of connoting *conscious* intent. Sexual strategies do not require conscious planning or awareness. Our sweat glands are “strategies” for accomplishing the goal of thermal regulation, but they require neither conscious planning nor awareness of the goal. Indeed, just as a piano player’s sudden awareness of her hands may impede performance, most human sexual strategies are best carried out without the awareness of the actor.

These attempts at clarification are misdirected in that they do not deal explicitly with the crucial issue if the discussion is about targets of motivation *at all*, be they conscious or not, or if it is about effects that are important in explaining the spread and maintenance of organisms with particular characteristics. What needs to be made clear is that the discussions concern evolutionary (ultimate), not ontogenetic (proximate), issues. In talking about sweat glands Buss presumably indicates implicitly that it is intent, *conscious or not*, that is misleadingly connoted by talk of strategies. If so it is unfortunate that he explicitly focuses on rejecting the idea that *awareness* is involved. “Clarifications” of this sort are not false but beside the point. It would be true to say of a person exhibiting a knee-jerk reflex that she is not *consciously* trying to move particles in the air. It would also be true (I hope) to say of a person falling asleep at the wheel that she is not *consciously* trying to drive off the road. However, such disclaimers may sound odd since we assume that the effects in question do not depend causally, at *any cognitive level*, on minds having associated them with their causes. Merely ruling out *conscious* intent doesn’t quite do the trick. A purported “clarification” of intentional discourse along these lines will allow it to be interpreted as concerning *subconscious* motivation, thus being about *proximate* issues. The line must be drawn between proximate and ultimate issues, and the problem is that the distinction between what is conscious and what is not is a distinction *within* the proximate perspective. The combination of, on the one hand, shorthand presentations, and on the other,

“clarifications” of those presentations that are beside the point is a feature with some *prima facie* relevance to the issue about misunderstandings of evolutionary thinking.

4. Encapsulation of linguistic processing?

According to a seemingly widespread view within the community of evolutionists intentional shorthand is a harmless and convenient tool; as long as we provide instances of clarification there is nothing to worry about. In order to defend this view we need more than a belief that clarifications are accurate. We have to hold that our minds work in such a way that particular events of clarification, in a sea of vivid shorthand, are *causally efficient* in making minds avoid engaging in contextually inappropriate activities on hearing the expressions used in the shorthand. This presupposes that the content of the clarifications is readily available and causally sufficient to block inappropriate reactions throughout the account. Thus, the undesired processes must be taken to lack *informational encapsulation* to any interesting degree. Saying that a mental process is informationally encapsulated is, roughly, saying that it will deliver its output while being *insensitive* to much of the information that the system as a whole has. Paradigmatically it will, to an interesting degree, be insensitive to the individual’s reasoned beliefs and long term goals (Fodor, 1983). In what follows I will take encapsulation to be something that comes in degrees, from slight to total, and I will assume that it can make for trouble even if far from total.

The idea that clarifications of intentional discourse can be expected to be *efficient* when it comes to pre-empt misunderstanding of evolutionary thinking clearly rests on a substantial assumption about linguistic processing. This assumption is neither settled empirically nor theoretically innocent. These days most evolutionists accept that informational encapsulation is something that actually occurs in human minds, even if there is considerable debate about the extent of it. Intentional discourse is presumably deeply rooted in a human being at the age when one first encounters evolutionary theory. Such familiarity might well be associated with significant encapsulation. This idea is not implausible from an evolutionary perspective since the domain of social life, where issues involving intentionality loom large, is generally taken to have been an important realm. The point is that we cannot rule out, at this stage, the possibility that at least some of the causal pathways initiated by the language of intentional psychology are significantly

isolated from our understanding of what people claim is intended and not intended by such talk in some non-psychological context. It must hold for metaphor quite generally that its usefulness and reliability depends much on our ability to block disanalogies (Bailer-Jones, 2002), and this ability is bound to be highly dependent on the degree and nature of encapsulation.

The evolutionary perspective is often taken to say some nasty things about who we are. If so, then much of this perceived nastiness might be due to, not the biological facts themselves, but to the *way* they are presented. The intentional mode of expressing selectionist considerations will let us describe human beings as fairly cold-blooded calculators of fitness consequences, and that is certainly a bit more “exciting” than the real thing. If we are not as good at blocking standard interpretation as many evolutionists seem to think then some “unmotivated” reactions are to be expected. Evolutionists might, in virtue of their linguistic habits, be actively contributing to poor treatment of their own ideas. Take the following passage from Daly and Wilson as an illustration (1988, p. 43):

Fitness benefits would obviously accrue to [a] parent who could assess available predictors of an offspring’s eventual contribution to parental fitness, and adjust parental inclinations accordingly. Such parental predictive skills would be especially valuable for an animal such as *Homo sapiens* with its prolonged, intensive parental care: Every child that is reared represents a significant fraction of its mother’s life span and labor, so that bad decisions are penalized especially severely.

Daly and Wilson could have made their selectionist point by talking in terms of variation in parental responses to offspring traits, and of the relative fitnesses of the latter. No decisions, good or bad, based on predictive skills need be invoked. This quote provides an example of what D.S. Wilson calls a ‘cryptic form of motivation’ (Wilson, 1998, p. 480). It is clear that offspring traits are ‘...predictors of an offspring’s eventual contribution to parental fitness...’ for the *evolutionist*. Whether this is the case for the parents is indeed doubtful, and in any case not crucial for the selectionist hypothesis.

The question is how easily our minds uncover the intended message and *nothing but* the intended message in accounts as the one provided by Daly and Wilson. I think it would be

hard to find anyone (among those of us who accept evolutionary theory) who would fail to see the plausibility of the properly *paraphrased* content of the passage. But the mode of exposition may make it hard to uncover that message. As things stand it is not unreasonable to assume that Daly and Wilson, and their colleagues who indulge in similar formulations, are in the business of making their proposals *less likely* to receive the treatment the authors think they deserve.

In speaking of the impact of modes of presentation on communication it is worth noting that there seems to be a social dimension involved that we need to take into account. Raymond Gibbs addresses this issue (1994, p. 135, my emphasis): “Finding out speakers’ *attitudes* is a key aspect of metaphor understanding.” And he adds (p. 136):

Many instances of metaphor function beyond their conventional content to signal intimacy, formality, or hostility or to indicate membership in a particular subgroup.... Listeners will often recognize the interests and attitudes of a speaker from his or her choice of figurative speech.

Here is an illustration of how this aspect might be implicated in the current context: There are many substitute parents in the societies where evolutionary theory is widespread. In these very societies many evolutionists will address questions concerning aspects of the evolution of parenting using phrases such as “wasting effort on unrelated offspring”. The selectionist background of the expression is that genes that make, by whatever routes, for caring behaviour that has a higher than average correlation with genetic relatedness will tend to spread. This is because offspring with such genes tend to receive more parental care than those without such genes. So talk about “wasting effort” is just a way to express the evolutionary prognosis of less discriminating varieties.

Now, assume that a sender S uses metaphorical expression M in communication with receiver R. Then, if R takes M to be a sign of disrespect, contempt, or the like, R may give S a less generous reading *even if* R understands that M is used metaphorically. After all, knowing that M is metaphor does nothing to rebut the hypothesis that *the choice to use* M reflects disrespect, contempt, or the like. The additional premise needed to predict trouble with communication is simply one stating that we tend to be less favourably inclined

towards those we deem hostile, and that this tends to affect our level of open-mindedness in intellectual exchanges. Not very outlandish, it seems.

5. A brief look at research.

There is indeed ongoing research on the topic of metaphor. I will not embark on an extensive survey of this area, but will note a few things that are of some, albeit inconclusive, value for my suggestions.

Coulsen and Van Petten (2002, p. 958) relate to findings they take to suggest ‘...that literal and metaphorical meanings become activated simultaneously, thus producing response competition.’. Many theorists hold that understanding of metaphorical expressions involves active suppression of contextually inappropriate aspects (Gernsbacher et al, 2001, McGlone and Manfredi, 2001). Context is taken to be important in making one’s way to a sound interpretation, and Budiu and Anderson (2002, p. 164) suggest that ‘...for poor sentence contexts, metaphoric interpretation may actually never be computed.’.

These points seem to have some bearing on the present issue, but are still far from answering the questions that would need to be settled given my concern. Most research on metaphor I have encountered has been made on so-called *predicative* metaphor; examples being ‘*marriages are iceboxes*’ and ‘*time is money*’ (Budiu and Anderson, 2002). In these cases the metaphorically intended term is presented alongside with the literally intended term. This would seem to eliminate the problem of independently locating the intended target of the metaphorical term, leaving the main problem the one of understanding how properties relevant for the source extension are intended to illuminate the target. It is, in these cases, generally altogether obvious that a metaphorical reading is intended, and such metaphors stand out against a background of more literal expressions.

Many accounts stress the beneficial side of metaphor (Ortony, 1976, Reynolds and Schwartz, 1983, Gibbs, 1994). It is reasonable to assume that whether there is a net benefit or not depends on how conspicuous the metaphor is. Fraser (1993) discusses how metaphor is signalled. On his account, non-standard uses may either be explicitly announced as such, or they may be conspicuous in virtue of being semantically or pragmatically anomalous. Things may not be optimal in this respect in the evolutionary discourse that is my focal topic. To begin with, here the shorthand is *not* predicative and it takes some practice to get

swift at uncovering the fuller account. The intentional shorthand is not conspicuous the way ‘marriages are iceboxes’ is, at least not when we are discussing creatures who have an acknowledged capacity of complex information processing. It may be dead obvious that a flatworm does not predict long-term fitness consequences, but it seems *prima facie* conceivable when it comes to humans. So, standard psychological (proximate) readings may not immediately strike one as anomalous in the latter case. Also, the mode of expression is, in many accounts, not an occasional excursion but the normal way of addressing the issue. It is rather the non-intentional story that is the rare exception. There do occur explicit announcements to the effect that usage is non-standard, although not all accounts provide them. Such announcements are, as indicated in Section 3, not always to the point, and even if they are they are far between. It is not implausible to assume that these are features that increase the burden on minds processing the idiom. So, in line with Budiu and Anderson’s suggestion we might get contexts that are too poor in material necessary for suppressing the inappropriate responses.

6. Concluding Remarks.

Many evolutionists today argue for the need to make evolutionary theory an integrated part of psychology and the social sciences. If this is the agenda it should be in the interests of these thinkers to worry about factors that affect the probability of successful communication across boundaries. The track record of communication of evolutionary thinking is not altogether impressive. This is commonly recognised by evolutionists themselves, as shown by presentations of “popular misunderstandings”. The fact that some recurring misconceptions are clearly what we would expect to find *if* processing of the intentional shorthand was unreliable should make us lift questions about efficiency of exposition above the realm of rather effortless rationalisation. Perhaps our minds are such that some well-entrenched associations relating to intentional discourse wear down, if at all, only slowly and laboriously, and thus that we can be expected to stray when soaked in language carrying deeply rooted but contextually inappropriate connotations. Acts of clarification may be far from sufficient to pre-empt bad impact on communication.

It cannot be seriously denied that the intentional language of evolutionists is a *prima facie* candidate suspect when it comes to accounting for recurring problems of

communicating evolutionary thinking. It clearly seems less than optimal to combine the complaint that people all too often mistake discussions about fitness consequences for discussions about individual motivation with the firm habit of using the very same formulations within both perspectives. Given present knowledge only self-serving bias can hold the linguistic practice of evolutionists free from suspicion.

The tendency to produce rather effortless rationalisations of linguistic habits is not unique for evolutionists. I have concentrated on them since my primary field of interest is philosophy of biology, and because I believe that there are substantial costs associated with the use of intentional shorthand in discourse on human evolution. However, the claim that questions about efficiency of exposition must be connected to relevant scientific theorising and methodology is quite general.

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ⁱ I will use terms such as 'evolutionist' and 'evolutionary theorist' in a wide sense throughout, indicating a person who's work leans heavily on evolutionary thinking, whatever the affiliation.