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Is your enemy's enemy always your best friend?

A commentary to Jytte Bang (and James Gibson) on so-called ecological psychology

(Commentary to Jytte Bang: Steps towards an ecological approach to thinking)

Jytte Bang acknowledges the preliminary character of her essay *'Steps towards an ecological approach to thinking'*; she calls it a "suggestion." I would call it an intuition, and a very evocative one at that. My own intuitive feeling is that she is on to something deep and very important. "There is, however," as she writes, "quite a gap between perceiving the obvious and conceiving the obvious. " I fall into that gap since I cannot conceive her conceptual discourse as obvious. Three voices are invited into her narrative: First and foremost James Gibson and some of his followers, but also travellers of American pragmatism, and also myself. The author has very generously included a work of mine (Engelsted, 1989a) and presented it with fine understanding. This, of course, has been my bridge to appreciating the intention of the author; but also the position from where to question some of her propositions.

The thinkers of the American pragmatism invoked by Jytte Bang are epistemologists or panpsychists or both. Epistemologists and panpsychists share the virtue of recognizing the need to place mind and world on the same page again, after Hume and Kant had concluded that they could not even be in the same book, there being no way that sensory input from the outside could produce the foundational dimensions of meaning or intentionality, a conclusion which seemed to doom the mind to be a cut-off bubble. Epistemologists did their salvage work by simply giving phenomenology (nearly synonymous with intentionality) priority and letting theory of knowledge have precedence over theory of world. Panpsychists, more daringly, did it by granting the outside material world the psychological properties asked for: Agency, intentionality, and meaning. Thus the abhorrent gap between Subject and Object left by Hume and Kant was closed, the dualism overcome, mind and world of one piece.

Dualism is also the target of Jytte Bang's essay. In her presentation, she repeatedly rejects the dualism she finds in contemporary mainstream psychology, in particular in cognitive psychology, which seems cast as the bête noir of the essay "because of an ongoing dualistic framework." For this reason it is perhaps not surprising that we also find her courting such an extravagant epistemological solution as William James' appeal to "the immediate flux of life called pure experience", the radical empiricism which would "neither admit into its construction any element that is not directly experienced, nor exclude from them any element that is directly experienced" and by which "James tried to break out of dualism." The author says "James offers a way to grasp the continuity of knower and known" and that "the relations between the knower and the known (subject and object) should not be treated as discontinuous entities." Well, could it be called knowledge without some discontinuity between subject and object? The author also lends the panpsychist solution a voice. We are baffled to read that H. Heft (2001) uses the term *ecological knowledge* "to reject the Cartesian-Newtonian universe which claims…'a dichotomy between a meaningless material world and a subjective, meaningful psychological realm…'" The author seems to sympathize with this surprising notion.

Epistemology is a spiel easily shrugged off, but panpsychism is a serious matter and very bad for a science of psychology. Let me explain. When scientific psychology was first founded by Aristotle in the 4th century B.C., it was basically defined as a set (several nested sets, in fact) of *special relations in the world*. The relations were defining of the living beings. On the foundation of the basic life functions (metabolism, growth and reproduction) shared by all living things he placed the functions of goal-directed locomotion and sensation shared by all animals; on top of which he placed the ability to dream and have imagination, later to be called mind, which he granted to the higher animals (mammals, presumably); finally, on top of it all, he endowed human beings with thought and language and the ability (and necessity) to live in society. Figure 1 is a rendition of this (the shading later to be explained). After Darwin it is also an evolutionary ladder. Furthermore it is a chart of the basic tectonic plates in the historical geography of psychology.

Aristotle's taxonomy of psychology is perfect, but the Greek biologist had overtaxed his *biological* paradigm; two thousand years later the Italian physicist Galileo could convincingly show, against Aristotle, that not *all* things unfold like intentional agents; falling missiles and orbiting planets react to immediate causal forces working on them here and now according to causal laws expressible in beautiful mathematical functions. This made physics the imperial science and heralded the advent of modern science. To psychology the shift was a colossal challenge, since agency and intentionality was no longer a given thing. In fact, the challenge has yet to be met. Two conditions, apparently contradictive, have to be fulfilled to meet it.

After Galileo – against the belief of Aristotle – had irrevocably shown the non-intentional nature of the physical world, the obvious thing for psychology to try was to follow the new paradigm and raise a psychology directly from causal

physics altogether without intentionality. This was Hobbes' second founding of psychology, this time as a stimulus-response machine (B & C). Unfortunately, the abandoned intentionality (A) was soon to pop up as a ghost in the machine to haunt the philosophers. The subsequent debacle from Hobbes to Kant bears the name of classical philosophy. It ended with this important and surprising conclusion:

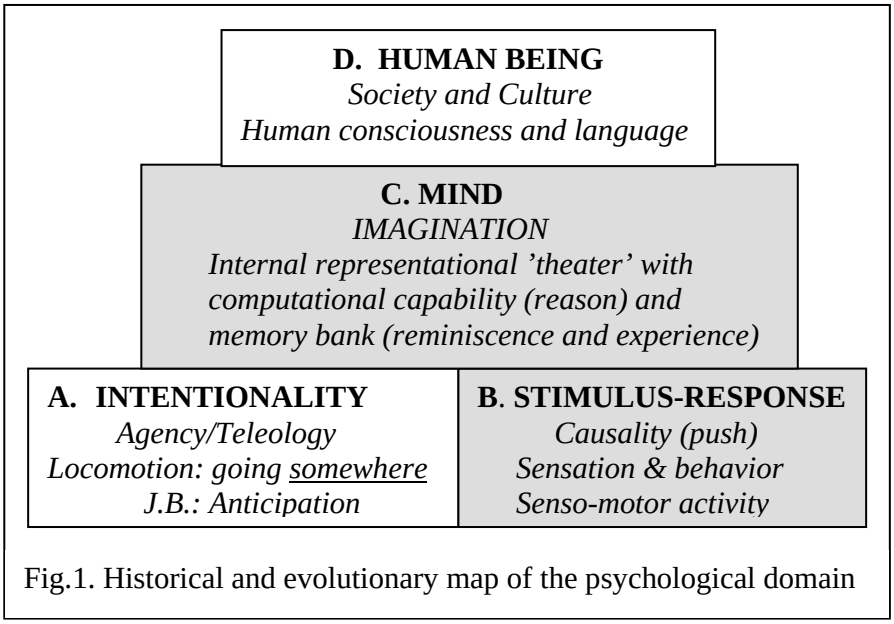

Fig.1. Historical and evolutionary map of the psychological domain

Intentionality and sensation are two different things; sensation by itself cannot provide the phenomenological framework of the world – time, space, object, cause; intentionality providing us with this framework must therefore be *a priori*, that is, independent of and before sensation.

This intentionality you need to explain, that is the first condition, but you must do it with your hands tied to your back. Epistemological and panpsychistic solutions, which sneak in the properties they want to extract, will not do. In the scientific understanding, physics is simply first in the very concrete sense that it was first in time and first in space and that everything else emerged from it at some point in cosmogenesis. So psychology has to explain how a priori intentionality can emerge out of a causal and non-intentional physical universe. To wed intentionality and physical cosmogenesis have so far stumped psychology, of course, but there it is. *Hic Rhodus, hic salta!*

Now if this is true, it is obviously terrible to subscribe to notions that mock Galileo by removing the distinction between a non-intentional physical universe and psychological meaning and throw away the hard-gained labour of the 18th century philosophers by eliminating or obscuring the distinction between the environmental input and intentionality. How could the author subscribe to this

She provides the answer herself: "With his direct perception Gibson outlines an important and radical alternative to dualism …" "From the very beginning, Gibson's ecological psychology, thus, is opposed to the Cartesian separation into two parallel entities of environmental properties and organismic properties." So James Gibson is the culprit and seducer. Let us try to frame the man in a small historical sketch.

Kant's conclusion brought psychology to a halt for the better part of a century; it was only given a reprieve because the panpsychism and vitalism, invoked for a short time by German Romanticism, invigorated the science of physiology, which then became a template for a new experimental psychology. Wilhelm Wundt opened his Psycho-Physical Laboratory in 1879, and today this third time count as the founding year of scientific psychology. Wundt worked all four fields of our chart, but the content of consciousness was his preoccupation. Wundt (allegedly) held that perceptual meaning (wholes) is created from sensory elements by a construction process in the mind (apperception), employing innate schemata and past experience. Perceptual meaning is therefore indirect. The Gestalt psychologists rebelled against this piecemeal psychology; they denied perception as construction from elements and held that wholes (gestalts) appear spontaneously in the consciousness (possibly due to some weird physics). Taught by Koffka, Gibson was for wholes against mental construction of perceptual meaning out of sensory elements, now aviation experience led him to a great discovery: The gestalts (and thus perceptual meaning) were already out there in the physical environment!

Gibson was right. In wave-based sensory modalities there is a point-to-point geometrical relationship between the distal stimulus (what you see or hear) and the proximal stimulus (what impinges on your eye or ear). Thus the proximal stimulus is sufficient to faithfully deliver the distal perception without any mental mediation or construction, in fact, a video or audio recorder could do it. Further, if you move about the geometrical projections change in such a lawful geometrical way as to further enhance your information of the things out there. Generalising this very important discovery, Gibson subsequently held that all perception is direct information pick-up from the environment-and that there is no role to play for a representational mind. As happens more often than not, a valid point had been turned into an invalid principle.

Even if the terms stimulus-response do not sit well with his holistic approach, being about sensation/perception and the accompanying behavior, Gibson belongs in B in figure 1. Gibson could be seen as a counterpart in perception to a behaviourist like Skinner in learning. They shared the motivation of wanting to free the science from the old mentalism of Wundt and his American counterpart Titchener and both aimed for explanations that bypassed a representational mind. Since you must – if my map and reasoning are correct – find a way to establish the psychological as *a set of relations in the external world*, direct if you like, before you introduce it to the internal mind, the work of Skinner and Gibson are milestones in the progress of psychology.

Now were the schedules of reinforcement of Skinner and the invariant spatial geometries of Gibson raised from B by causal means alone? They were not. Both Skinner and Gibson had to invite agency into their models; Skinner in the form of the crucial operant and Gibson in the form of the equally crucial exploratory activity. But this is a tell-tale: psychology cannot do without agency; even Pavlov could not do without the orienting reflex. The question is, however, whether this introduction of agency is so convenient that it borders to theoretical cheating.

Jytte Bang sums up Gibson in this nice way:

> "Gibson's theory on perception is a theory of how animals come to *know* their environments. (…) For Gibson, perception is not a response to stimuli but an observer's awareness of the environment. This awareness is based on information specific to its sources in the environment. Instead of S – R, he regards exploratory action to be a basic unit of analysis which makes information available for an actively exploring organism, and perceptual learning to be the fundamental cognitive process."

Fine, but we still need to ask *from where* this essential *awareness* and *exploratory* action enter the equation? I do not think the so-called ecological psychology answers that, or even recognizes that it is in need of an answer. Jytte Bang writes that "an ecological approach begins where thinking unfolds, that is, in the complex *life-world* of *intentional* living organisms, including human beings." But if the approach *presupposes* the life-world of intentional living beings, the fact of the latter is precisely what we need to explain and cannot take for a free gift. Does intentionality not demand as acute and exhaustive an analysis and explanation as the geometrical matrix of the sensory environment? Does it not need to be anchored as thoroughly in the physical universe? Or, is perchance the former already taken care of by virtue of the latter? Perhaps everything comes together in the resonating organism-environment mutuality, which is supposed to undo "the Cartesian separation into two parallel entities of environmental properties and organismic properties."

The author sees ecological thinking as a dualism-slayer – "if not conceived ecologically [it] takes us directly back to the persistent problem of dualisms in psychology." But if the two above conditions really need to be met for us to have a true scientific psychology – (1) intentionality as a priori and different from sensory influence (the hard-gained result of classical philosophy), and (2) the physical universe as prior to and different from intentionality (the conclusion of modern natural science) – obviously "the persistent problem of dualisms in psychology" are precisely what should *not* be evaded, but faced!

If there is a vital distinction (dualism), and we miss it, our understanding is likely to suffer. By not accepting a proper separation between organism and world but pasting it over with the help of a vague concept of affordance I believe that Gibson's understanding suffer. The whole point of my essay *What is the psyche and how did it get into the world?* (Engelsted, 1989a) cited by Jytte Bang is to make a clear distinction between the realm of sense and the realm of intentionality and attempt to meet the two above conditions. In subsequent work on this problem I have identified the realm of sense with that with which we are in sensory touch and have identified the realm of intentionality with that which we need in order to stay alive, food, but by extension other things as well. We are in a sense continuous with the realm of sense since it touches us. But it is a tricky continuity, since we meet this world across an *interface*, S/O, and this is a barrier or discontinuity as well (you cannot get onto the other side), which sets off all the problems haunting empiricism. Unfortunately, we are not always in direct touch with the things we need; we have to move to some other future place to get them (locomotion), we have to cross a spatial-temporal *interspace* (S–O). But this discontinuity is in a sense a continuity, since the locomotion in itself can be seen as an anticipation of the non present object.[1] It is this double play of continuity and discontinuity – the sets of *dash* (S–O) and *slash* (S/O) and their intersection[2] – that makes the domain of psychology unique in the material universe but also hard to fathom. If you reject dualism and abhor discontinuity, all of this, of course, escapes you.

Here is the enigma. I have no doubt it is the intuition of the above–dialectic, if you like–that guides the author in her

[1] For more on this notion see Engelsted, 2002.

[2] Jens Mammen has analysed this important distinction in terms of *category of sense* and *category of choice* and modelled it in an advanced mathematical topology. See for instance Mammen, 2002.

thinking about thinking. And yet she vehemently denounces dualism and discontinuity. This is the more strange since the author invokes Hegel in her deliberations; I mean if you cook Hegel down to one principle, it is the principle of the unity of opposites, or the simultaneity of continuity and discontinuity. If you really want to approach the "most persistent problems of psychology, including what psychology is all about, on which grounds should psychology be founded, and what should be the proper unit of analysis," this is what you need. So how can you miss it?

By the way, the distinction between the interface realm of sense and the interspace realm of intentionality in my work I refer to as *environment* and *ecology,* respectively. [3] Environment is literally our surroundings. Ecology is our vital relation to our life sources; it is the 'economy of life', so to speak. The multiple S–O links form the food-chain, which is the backbone of the unfolded ecology. Of course, environment and ecology come together, but the distinction is useful since they are obviously different sets of relation and affect our life and well-being in different ways; environments can become polluted, ecologies break down. Did you ever wonder why Gibson uses the two terms interchangeably, usually ecology in the headings and environment in the text? He is lacking an important distinction. His psychology is environmental only. This is fine as such, of course, but in her search for the deep sources of thinking the author is after something "transcending the situation" and reaching into the future. This can hardly be extracted from Gibson, for whom, writes the author, "the distinction between past-present-future to some extent seems meaningless." One can readily understand why the author here chooses not to "have to agree with Gibson in every detail."

What made Gibson so attractive to the author, we may wonder? I can only venture this suggestion – because they have a common enemy, which are cognitive psychology and the representational mind. In figure 1 we find two camps AD and BC, differently shaded. In the history of psychology they represent a more holistic approach with an eye on mind and meaning, intentionality and phenomenology, language and culture, and a more reductive approach adopting natural science methodology and focusing on elementary functions. To call them 'psychology without science' and 'science without psychology', respectively, would be malicious, but it would explain why they so passionately hate each others' guts.

Gibson ought perhaps to have belonged to the function camp, but since its main champion became cognitive science, which – thanks to Tolman and Hull, and the invention of the computer – in many ways was a return from the pure behaviourism of Skinner to the tainted representational mind of Wundt, he was up in arms. Jytte Bang belongs to the tradition of Danish general psychology which, being basically anchored in D, has aimed for a unitary understanding of all four fields, which of course is what a comprehensive psychology needs. Since BC was routinely rejecting an ecumenical effort like this, behaviourism first, then cognitive psychology was just as routinely seen as the enemy in Danish general psychology. Thus, perhaps, because Gibson was the enemy of the author's enemy, she thought he was her best friend.

As everybody knows, fractional strife beats food, drink, and sex every time. It might even overpower the quest for understanding. You cannot help thinking that this has been the case when you read in the paper that "the dualisms are due to the influence of liberal Protestant thought" and that a psychology inhering in such heresy is really a "defence of a theological conception of human nature." Obviously the blood is up, it steams of paradigmatic warfare.

If I should be right here, I think this is a great shame. Since I am sure that Jytte Bang's deep intuition is correct, it can be retrieved without recourse to paradigmatic denial of dualism and rejection of representational minds. Honestly, it is impossible to see how you can approach thinking without accepting some role of a representational mind. When I call forth an image of the author in my mind's eye, would that not depend on and be mediated by some representational memory function? Could the girl going to a birthday party in the paper really do her thinking without some representational memory function? Could you really talk about it in any other sensible way? Besides, what we call the mind is simply a fact, it exists. In mammalian evolution it grew out of the olfactory bulb to form the limbic system and was further extended into the prefrontal cortex. It is the seat of emotions, reminiscence and imagination and plays a huge role in the life of all mammals. And it is unquestionably representational. It could not be anything else. Olfaction is the sense that got away from Gibson's empire of direct perception. The molecules of smell do not allow a geometrical projection from proximal to distal stimuli; there is no projection at all, only biography. Thus smell is only known with reference to some prior experience, we say this smell smells like tar and this smells like roses. That is representational and indirect. Why deny it? It is the basic principle of the mammalian mind (Engelsted, 1989b)[4] Its recognition would in no way harm the author's deep intuition of the anticipatory nature of thinking. On the contrary, a representational mind might offer some biographical resources that thinking as anticipation surely needs.

I could, of course, be wrong in all of this. Wittgenstein talks about being in the grip of a picture. The author is obviously in the grip of a picture, but so am I. Only it does not seem to be quite the same picture. Who is to tell which the better picture is? When you cannot well fathom an author, it may not always be the author's fault.

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[3] This use of ecology and environment was first introduced in Engelsted, 1994.

[4] This conception of mind is developed in Engelsted, 1989b.

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