

Accommodating unconscious beliefs

Luís M. Augusto^{*1}

Abstract: More often than not, theories of belief and of belief ascription restrict themselves to conscious beliefs, thus obliterating a vast part of our mental life and offering extremely incomplete, unrealistic theories. Indeed, conscious beliefs are the exception, not the rule, as far as human doxastic states are concerned, and a naturalistic, realistic theory of knowledge that aspires to completeness has to take unconscious beliefs into consideration. This paper is the elaboration of such a theory of belief.

Keywords: Phenomenology of belief; Ontology of belief; Belief ascription; Unconscious belief; Positive epistemic status

Resumo: Na maioria das vezes, as teorias da crença e da atribuição de crenças limitam-se a crenças conscientes, obliterando, assim, uma parte grande de nossa vida mental e oferecendo teorias extremamente irrealis e incompletas. De fato, as crenças conscientes são a exceção, não a regra, no que diz respeito aos estados doxásticos humanos, e uma teoria do conhecimento realista, naturalista, que aspira à completude tem de tomar em consideração as crenças inconscientes. Este artigo é a elaboração de semelhante teoria da crença.

Palavras-chave: Atribuição de crença; Crença inconsciente; Fenomenologia da crença; Ontologia da crença; Status epistêmico positivo

Introduction

Cognitive psychology, emerging in the 1960s, conquered its terrain against behaviourism in great measure because it allowed for the existence of mental phenomena that the latter ignored or actually banned; among these, *beliefs* are, together with other, such as intentions and desires, seen as one of the most important entities of our mental life. As the most basic and simplest form of mental representation, they are seen to account for human action in a fundamental way. On the opposite end of a spectrum of approaches to the mind, psychoanalysis, too, is entirely founded on the notion that our beliefs, namely as ideational representatives of our instinctual

^{*} Pós-doutorando (FCT) no Instituto de Filosofia da Universidade do Porto, Portugal. *E-mail:* laugusto@letras.up.pt. Artigo recebido em 29.10.2010, aprovado em 20.12.2010.

¹ I wish to thank the Portuguese Foundation for Science and Technology (FCT), as well as the European Social Fund, for the postdoctoral fellowship that made this work – among others – possible.

drives, determine, rather than simply influence, our behaviour, bizarre as it may be. Given this scenario, it would be expected that both, or either one of these fields, had already elaborated on a robust conception of belief, and given that both fields rely heavily and more or less unproblematically on a notion of unconscious belief, a convincing theory of this particular kind of belief should by now be a part of these fields. Because belief appears to be more or less obviously an object of epistemology, it would be expected that this discipline had by now, if not provided, at least contributed to such a theory. That is however not the case: although belief has been the focus of a large number of works in this field, these restrict themselves to approaching conscious beliefs. It is the task of this paper to launch work into this particular kind of belief, mainly with the aim of, if not unifying, bringing epistemology, cognitive psychology, and psychoanalysis a little closer, at least in matters that immediately try to tackle our unconscious doxastic states.

In epistemology, it is widely assumed, though not unanimously agreed,² that belief is a necessary condition of knowledge. That is to say that knowledge can be seen as a body of beliefs. It is, however, also widely accepted that not all beliefs yield knowledge: a belief's inclusion in, or exclusion from, a knowledge base depends on its epistemic status.³ But while,

² It is often claimed that Radford (1966) argued for the possibility of knowledge without belief; if he actually did so (he seemed to think so; cf. Radford, 1970), then he did it relying on a misconception of belief: that someone *does not believe p* in the sense that *s/he actually believes s/he does not know that p* is, of course, a belief. I am not commenting here on the relevance of Radford's argument in terms of soundness or validity as far as the tripartite analysis of knowledge is concerned; as a matter of fact, Radford's 'counterexample' only obliquely applies to the tripartite analysis: following him, (i) *p* is true; (ii) *S* does not believe that *p* is true but *s/he* just goes for it; (iii) *S* is not justified in not believing that *p* is true, but *s/he* is actually justified in going for it. Formally, for the sake of clarity, (i) *p*; (ii) $\neg Bp \ \& \ B(?)p$; (iii) $\neg B'\neg Bp \ \& \ B(?)p$. Indeed, what precisely $B(?)p$ is actually supposed to mean – *S* risks *p*?, chances *p*?, ...? – is open to interpretation. But, for my purposes, $(\neg Bp \ \& \ B(?)p)$ is a *belief*.

³ The term 'epistemic status' can be taken in two senses. In a narrow sense, it refers to how beliefs stand regarding specific epistemic requirements: a belief has *positive epistemic status* when it fulfils epistemic requirements such as truth, justification, degettierazation, etc.; in this sense we speak, for instance, of the epistemic status of beliefs about gods, about politics, about eminent weather changes. In a broader sense, we can speak of epistemic status as the degree to which a theory, or a discipline as a body of theories, is given recognition and credit by the scientific community: we speak of the epistemic status of psychoanalysis, of astrology, of relativity, etc.

as said, belief is widely seen as a necessary condition of knowledge, more often than not it is not belief at large, but solely a specific kind of belief that is actually contemplated. Analyses of knowledge integrating belief⁴ commonly have in mind the very circumscribed notion of belief as a propositional attitude, a belief that p , where p is a proposition. Additionally, and as already said, they tend to restrict themselves to conscious beliefs. This approach neglects a broader, more encompassing notion of belief, as, for instance, a willingness or disposition to act in a certain way, and it rarely, if ever, accepts unconscious beliefs as candidates for knowledge. This is especially so if one intends to carry out a formal treatment of knowledge, as the former notion of belief escapes the handy p , and the latter, formalized as $\neg KBp$ (or even $\neg BBp$),⁵ does not go very far as regards its formal utility. In this scenario, thus, only a consciously held propositional attitude is a good candidate for a place in someone's knowledge base.

This is so reductive a scenario that it hardly deserves to be seen as an analysis of knowledge at all. Knowledge is displayed every instant of an individual's existence, as where knowledge fails, existence is disrupted or, ultimately, terminated. We can clearly allow ourselves a great margin of mistake, or 'false' beliefs, but we cannot endure constant disruption, which means that most of the time we actually hold beliefs that yield knowledge. However, most of the time we are not aware of our beliefs, nor do we appear to be able to consciously hold more than one belief at a time; but we do not for that cease acting in the world, and this even while we sleep, or are under other altered states of consciousness. Conscious belief holding is a special doxastic state, not the normal doxastic state in which we commonly are, and propositional attitudes of the sort 'S believes that p ' are a rare, usually emphatic occurrence. We thus need a theory of belief with a broader scope, i.e., one that is capable of accommodating the multiple forms beliefs can take, and this in particular as far as unconscious beliefs are concerned.

⁴ I am here referring to the usually tripartite analyses of knowledge comprising a truth condition, a belief condition, and a justification condition.

⁵ Where both beliefs concerned are of different orders, i.e., the agent or belief-holder does not have the higher-order belief B_1 that s/he has the lower-order belief B_0 that p (for which reason a better representation would be $\neg B_1 B_0 p$, or even $\neg B(Bp)$).

1 Belief: a general ontology

The two views of belief that have so far proved to be more popular among philosophers are the view of belief as a mental act/occurrence, and its conception as a disposition/willingness to act in a certain way.⁶ These, however, are not so much notions of belief as of the phenomenology of belief: according to this distinction, beliefs are formed and manifest themselves either as mental acts (= ideas) or as behavioural dispositions (= actions). Belief proper is commonly seen as a propositional attitude as in ‘*S* believes that *p*’, where *p* is a proposition like, for instance, “Socrates was a Greek philosopher,” “2 + 2 = 4,” and “It’s raining.” This conception of belief fits, more or less problematically, into the phenomenologies above, and its popularity is explained by the obvious analytical properties it possesses.

Although the notion of belief as a propositional attitude is not problem-free (e.g., Frege, 1892; Moore, 1953; Russell, 1912), it is useful in truth-based epistemologies in that it establishes a relation between the verb ‘believe’ and a proposition that allows for a true/false valuation as far as beliefs are concerned;⁷ this is so because propositions easily adapt to the role of truth-bearers, whereas mental acts/occurrences per se and/or behavioural dispositions are not – so, or at all – fit for such a role. And this role is a necessary one as things stand in epistemology today, where the by far most influential definition of knowledge is that of justified true belief.

However, this raises, among other issues, the problem of the distinction between the belief and the proposition believed: is a belief necessarily true because the proposition believed is so? This problem is brought on by an analysis that distinguishes the attitude of believing from the proposition believed (e.g., Armstrong, 1973, p. 18). I maintain, in order to eliminate this problem, that *p* and the belief <that> *p* are one and the same thing; the construction ‘*S* believes that *p*’ is an artefact meant to express

⁶ It is customary to talk of three ways of conceiving belief: besides the two mentioned, beliefs are also often seen as mental states (Armstrong, 1973; Ramsey, 1931). I find this third way superfluous in that the distinction between a mental state and a mental act or a disposition to act is far from clear; actually, this latter distinction is itself already opaque.

⁷ That is to say that the truth-value of the believed proposition *p* is the truth-value of the belief in which *p* is contemplated: if *S* believes that *p*, and *p* is false, then *S*’s belief is false (but see the next paragraph for the problem of the distinction between *p* and the belief that *p*).

belief as a propositional attitude, but beliefs just are the ‘propositions’⁸ they express. For instance, when I think that it is raining, my thought/belief is expressed simply as “It’s raining”;⁹ “I believe that it’s raining” is either an emphatic expression, for instance in a case of doubt, or an analytical artefact, as stated above. Thus, the construction “I believe *p*,” omitting the conjunction ‘that,’ is better suited for talk about beliefs. This, however, is still an artefact; “*p*” suffices to express the belief that *p*.

Last but not least, propositions are meaningful declarative sentences that may – or may not – function as truth-bearers; by ‘meaningful,’ I mean that they are grammatically sound within a specific natural language. Let us take the natural language English: examples of non-meaningful¹⁰ sentences in this language are all sentences in all other natural or artificial languages not immediately comprehensible for a monolingual speaker of English, as well as sentences with syntactic defects (e.g., “John goed to the cinema night last”) and semantically ‘odd’ sentences, such as “The sun screams every night”. Meaningfulness, however, is not to be confused with truth; “The sun screams every night” might be true – only, at least at present, this sentence is not meaningful for us. This shows us two important things: a) truth and falsity are values attributed to propositions when they are *beliefs* (or belief-like attitudes),¹¹ and b) our knowledge is restricted to what is meaningful for us, and this is contextually and historically dependent.¹²

⁸ Or, still better, the propositional-like (i.e., translatable into a proposition) mental contents and dispositions.

⁹ Or by my picking up my umbrella before going outside, without actually reflecting on what I am doing or why I am doing it.

¹⁰ Meaning, of course, comes in degrees; thus non-meaningful sentences need not be utterly meaningless, as the following cases show. In this light, a non-meaningful sentence may come very close to being meaningful as, for example, in the case of many sentences with grammatical mistakes.

¹¹ Very much in the way of Tarski’s T-Convention (Tarski, 1944), which establishes that *X* is true if, and only if, *p* (*ibid.*, p. 344), that is, using the example above, “*The sun screams every night*” is true if and only if *the sun screams every night*. What Tarski calls the *name* of a sentence *p*, *X*, I propose we see as a belief. Note, however, that this says nothing about the conditions on which *p* itself is true!

¹² The proposition “ $\int x^2 dx = x^3/3 + C$ ” would not be meaningful for a mathematician before the invention of calculus; although it is *today* considered a true proposition, given the formal body of mathematics, it would not yield knowledge *then*.

Let us now go back to the ontology of belief: above, I reduced ‘the belief that p ’ to ‘ p ’ alone; this means, according to my account, that beliefs directly and immediately express propositions or propositional-like contents. This supports my claim that dispositions to act in a certain way are beliefs, too, and that these, when not accompanied by a corresponding conscious mental act, i.e., a conscious belief, are *unconscious*, or *implicit* beliefs. Unconscious beliefs are at bottom propositional-like, or translatable into such a form, which means that there is no significant structural difference between conscious and unconscious beliefs; moreover, if one’s successful actions in the world are determined by one’s knowledge base, a body of beliefs, then there is fundamentally no ontological difference between both kinds of beliefs.

I am done with a positive ontology of belief. But before addressing the question of belief ascription, I first have to say what belief is not: emotions, volitions, intentions, feelings, instincts, and the like are in themselves not beliefs, but they underlie belief formation, and thus the disposition to behave in certain ways. Merely being ‘taken’ by an emotional state, say of love, or hate, is not a ground for action, unless one has an aim; action is prompted by the beliefs concerning the aim, the means to attain it, etc. The same is valid for instincts: it is not the instinct of hunger, but the consequent belief that one is hungry and needs to eat that prompts action. This said, beliefs are not clearly distinguished from their emotional and instinctual sources, not even in the case of man, an animal with a verbal language. This is merely a reminder concerning the point that beliefs are not necessarily verbal, but merely propositional-like.¹³

As for desires and intentions, perhaps more crucial for contemporary philosophical discussion, they, too, are not clear-cut mental states, independent from the beliefs that, as I see it, necessarily accompany them. Just as in the case of emotions/feelings and instincts, it takes more than desire and intention to act: it takes belief. Merely having the desire to go out for a walk does not prompt any specific behaviour; the action of actu-

¹³ This reminder is particularly important in cases in which it is difficult to individuate beliefs. A particularly problematic case is that of prosopagnosia in that all we have to base our belief ascription is a covert response, the skin conductance response (SCR). The hypothesis is that this response is accompanied by an unconscious belief expressing recognition of the faces that cause the significant SCRs (see below).

ally going out for a walk is prompted by a vast web of beliefs without which we would be unable to give a single step forward. The same is good for intentions; as a significant part of the philosophical community sees this, intentionality just is the aboutness of our beliefs in that they are necessarily about something, which means that intentions, taken in this sense,¹⁴ are a property of beliefs, and not beliefs proper.

With all this, I am not saying that an individual's psychical life reduces to beliefs; far from that, I see psychical life as a plethora of states more extensive than our nomenclatures can perhaps attain to classify. What I am claiming, perhaps too boldly but nevertheless emphatically, is that action, beyond the mere motor reflex, is grounded *ultimately* on belief, whether of the conscious or of the unconscious kind. This is the basic presupposition for the expansion of my theory, namely via an elaboration on belief ascription.

2 Fine-graining: belief ascription

a. Ascribing beliefs

Now that a general ontology of belief has been sketched, we require a finer-grained ontology only attainable within a theory of belief ascription, according to which we can attribute beliefs to human agents.

The obvious way to ascribe beliefs is to listen to what people say about their own beliefs. This, however, is not an infallible method, as people are capable of lying regarding their belief states, or can very simply be wrong about their own beliefs; moreover, only in certain special circumstances do people explicitly state their beliefs. We need a theory of belief ascription that goes beyond first person authority. This is to say that we have to explain how people successfully attribute beliefs to others when these say nothing regarding their own beliefs, or even when they lie, are wrong, or know nothing concerning them. Again, what they say is important, but what they 'say' that is not explicitly stated as a belief ("I believe that *p*") is as important as first person doxastic statements, because it just is part of their behaviour, and this is what reveals their beliefs. This shows

¹⁴ As opposed to *intentional beliefs*, i.e., beliefs which express an intention (e.g., "I plan/want/intend/... to visit Tuscany this year.")

how crucial it is to allow for a notion of belief as a willingness/tendency to act in a certain way: the way individuals act mirrors their doxastic states.¹⁵

As a matter of fact, the verb ‘mirror’ expresses metaphorically the fact that behaviour, or action, just *is a function of belief*, and I mean to say this in a strong, quasi mathematical sense: I mean that behaviour is a function of belief in the same way that a line/curve/graph *is* – also: graphs, depicts, shows – the function $f(x) = y$ (see Figure 1).

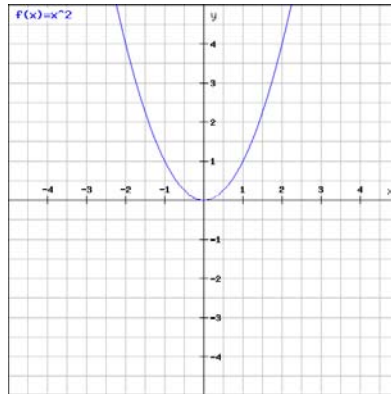


Figure 1. The graph of the function $f(x) = x^2$.

Summarily, action/behaviour is a function of belief; behind every action/behaviour – excepting perhaps motor reflexes in states of deep unconsciousness, like coma – there is a belief that underlies its performance by an agent. However, it takes a body of knowledge, as well as a theory, behind the ability to read the graph/curve in Figure 1 as the function of x^2 ; that is to say that only an individual with basic mathematical knowledge can read

¹⁵ Again, this might be a fallible method, as people lie about their beliefs, not only in words but also by acting in ways contrary to whatever it is they actually believe, and this for many reasons. Nevertheless, humans often appear to have a sort of lie detector that turns red in such situations, and they tend to ascribe beliefs with caution whenever they ‘feel’ that someone’s behaviour is not in accord with her/his beliefs. But, more importantly, the statement that action mirrors an agent’s doxastic state is not falsified by the fact that people lie: that they lie is an action, and that they act in discord with some of their beliefs is due also to a belief held, i.e., the belief that one needs to, or just can, lie, usually with some advantage or benefit in view.

the curve above as the function of x^2 , and that it takes the whole body of mathematics to justify why this reading is correct. The same is true of belief 'reading': it takes a body of 'knowledge,' too, as well as a theory that explains that 'reading.' Above, I elaborated on a phenomeno-ontology of belief: a belief is a propositional(-like) attitude manifested either (or both) as a mental occurrence or (and) in a disposition/willingness to act in a certain way. But this is manifestly insufficient, just as the curve above would be without its context (see Figure 2): without the gridlines and, especially, the explicit x - and y -coordinates, it allows numberless possible readings; it no longer is immediately readable as a graph, namely as the graph of the function $f(x) = x^2$.

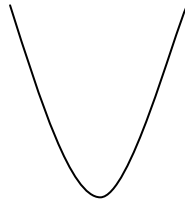


Figure 2: Can you read this?

This is to say that a theory should begin by demarcating the context of the phenomenon it aims to explain, the scenario in which a is a and not something else. In the same way that the curve above (Figure 2) can be read as the graph of the function $f(x) = x^2$ if and only if a precise mathematical context is given, so beliefs are readable as such only within their specific context. This is the context of *action*, or *behaviour*.

Let us thus move on to belief reading via action, or behaviour.

S. pets her cat in the head. The possible doxastic readings of this behaviour include: S. likes¹⁶ cats; S. believes her cat wants to be petted in the head; she thinks her cat needs human contact; etc. This is a fairly easy and almost infallible reading given the fact that neither the behaviour dis-

¹⁶ This is actually a misreading, given that, as seen above, feelings unsupported by beliefs (if such a state is possible) cannot promote action. We can say this is a characteristic of a folk belief ascription theory (see below) that often reads behaviour as a function of feelings and emotions unsupported by beliefs.

played by S. nor the context are particularly complex. People who dislike cats, or believe that they are nasty or messy, will very likely not pet a cat momentarily sharing the same room with them; their behaviour will be all but affective, and even if for some reason they have to hide their feelings/beliefs concerning cats, their behaviour will appear at best ambiguous, or awkward, and, interestingly enough, even the cat may 'read' it as such!

When faced with the following situation, the reading becomes more difficult, and also more fallible: J. got in the car, sat behind the wheel, and suddenly ran out of the car. We can read this behaviour in the following non-exhaustive ways: J. had forgotten something at home/in his office/...; he forgot he had run out of petrol; J. feared that there was a bomb in his car; etc. The readings of J.'s behaviour are numerous because the context is still too general; in order to read beliefs with more accuracy, we need specific contexts: for instance, if we know that J. is a reporter writing on a recent series of bombings, it is very likely that the last reading above might be correct.

It is undeniable that we often misread people's behaviour, even when the context is well known or obvious, but we oftener get it right – or else communal living would be impossible – because for each particular behaviour exhibited by a human there is, behind it, a limited number of beliefs that may explain it. The explanation for this is that beliefs are, firstly, *species-specific*, and, secondly, *culturally determined*. In fact, no matter how large the number of beliefs might be that humans can hold, they will not transcend the human possibilities of belief formation, being, as a matter of fact, bounded by the human material and existential schemas, namely by bodily, as well as cultural, determinants. For instance, humans do not, as we believe bats do, hold beliefs formed with the help of a biosonar, or echolocation system when navigating and searching for food, for the simple reason that humans are not endowed with a biosonar system; we can indeed imagine what it is like to have such beliefs, but this is inevitably from the human point of view, as Nagel (1974) pointed out. Moreover, human thought does not seem to be universally uniform, appearing to be in large measure culturally determined, namely by language, as proposed by the Humboldt-Sapir-Whorf hypothesis (Humboldt, 1836; Sapir, 1929; Whorf, 1941). Besides these two aspects, there is still the fact that humans form beliefs about the beliefs of other humans, and our belief reading ability is to

a great extent a ‘put oneself in their shoes’ skill, i.e., we more often than not interpret the behaviours of other people correctly, because there is a high probability that we would behave in a similar way if holding the same beliefs. That is to say, we attribute beliefs to ourselves, and do so concerning other people in an analogical way; in fact, only an animal capable of attributing beliefs to itself can in principle attribute beliefs to other beings, of the same or of other species.¹⁷

Back to S. and her cat, let us further imagine that she is an old spinster living in 13th-century Europe, that her cat is black and does not exactly look like a pussycat. S. is in for trouble; the context is against her in that it offers a few obvious readings for those a little versed in medieval social and cultural history. In fact, S.’s behaviour would be very probably pigeonholed in such a category as that of witchcraft, or Satanism; she would be thought of as holding beliefs that, while ‘positive’ towards the cat – or the entity ‘embodied’ in the cat –, would not be very much so towards her fellow humans. This – unfortunate – reading is not (perhaps primarily) due to a self-ascription of beliefs from the observers, but to a folk ‘theory’ of belief behind the reading of S.’s behaviour: many people in 13th-century Europe often read the behaviour of someone like S. as expressing (or as a function of) dangerous and malevolent beliefs towards humans while conveying other kinds of culturally and/or religiously (deemed) unacceptable

¹⁷ This is mainly why I restrict my analysis of belief and my theory of belief ascription to humans: it appears that other animals, namely mammals and, perhaps to a lesser extent, birds, can attribute beliefs to individuals not only of their own, but of other species. However, the main point is: can they ascribe beliefs to themselves? This is hard to say, if not altogether impossible, at least presently, given that we know next to nothing regarding the notion of self in other animals. (For a recent discussion on theory of mind – a major component of which is belief ascription – in primates, see Heyes, 1998; see Byrne, 2006 for a discussion contemplating other animals than primates.) Therefore, I prefer to leave non-human animals out of this theory, merely suggesting that they might be somehow able to ascribe beliefs, if not to themselves (reason why they do not fit into my theory), at least to other animals. The human case is paradigmatic in that human individuals not only attribute beliefs to themselves as well as to other humans/non-human animals, but do so for an amazing plethora of entities such as gods, devils, celestial bodies, and even human artefacts such as electrical appliances and other machines or objects, and this usually indirectly via the attribution of volitional states (e.g., the car that won’t start; the drawer that refuses to open; the cooker that tends to burn everything; the computer that refuses to do what it is instructed to).

beliefs towards supernatural entities, and they did so because, among other reasons, they were not immediately aware of evidence against such belief attribution; in turn, this was due to the conditions these belief ascribers found themselves in. We thus ascribe beliefs according to a more or less tacit dominant *folk belief ascription theory* that originates in and is part of our body of ‘knowledge,’ or still better, of our web of beliefs. This means that we are not only *conditioned* in our belief formation, as seen above, but also that we are to a great extent *determined* in our attribution of beliefs by the concrete (bio-psycho-sociological) conditions which we find ourselves in that shape our body of ‘knowledge.’

This is to say that there is not the simplest of actions we perform without being attributed, consciously or unconsciously, explicitly or implicitly, a belief, or beliefs behind it as its *cause*.¹⁸ Let me see anyone open a door; I will very likely not consciously attribute to the agent the belief that s/he can open doors, or that doors can be opened, but surely, in the back of my mind, there is that ascription being carried out; otherwise, supposing a world where doors cannot be opened by human agents, I would immediately become aware of the strangeness of the situation and would wonder at the bizarre belief behind that agent’s trying to open a door.

I am now ready to lay down a *general principle for belief ascription*, as well as a *safeguard principle* to back it against predictable opposition:¹⁹

When an ‘approved’ belief-holding subject S belonging to a specific community acts in a specific way x because s/he believes <that> p, S, a member of the same community and assumed to be also an ‘approved’ belief-holding subject, acting in a similar way x, ceteris paribus, may be said to also believe <that> p.*

The *safeguard principle* could be laid down as follows:

¹⁸ As is well illustrated by clinical cases involving persistent vegetative states: although they may have been informed that behaviour exhibited by the patients in this state (crying, screaming, agitated gestures, etc.) is merely reflex behaviour, the relatives and friends of the patients often cannot help attributing beliefs behind such behaviour.

¹⁹ I am actually basically repeating these two principles (see Augusto, 2009); as a matter of fact, the present paper can be seen as a further elaboration of the latter, namely as far as a theory of belief is concerned.

*Acting in a specific way x does not necessarily entail that S only believes <that> p, but it entails that S also believes <that> p.*²⁰

The *general principle* and the *safeguard principle* contain all that was said above: *action/behaviour is a function of belief*; beliefs are ascribed within a *context*; that they are ascribed at all is due to the fact that they are *sharable*, because they are *species- and community-specific* (i.e., *cultural*) and *(in)directly observable*.

b. Accommodating Unconscious Beliefs

It is important to remark that unconscious, or implicit, beliefs, are not simply excluded by the philosophical community at large; a number of philosophers considered influential in epistemology, both past and present, leave room for such beliefs; however, the tendency is to see these beliefs as either inattention, a tendency already quite patent in Leibniz's *petites perceptions* (Leibniz, 1765), or as mere logical inferences (e.g., Dennett, 1983). On the other hand, when the latter tendencies are avoided, unconscious belief is more often than not taken in a strictly psychoanalytical sense, confounding unawareness with denial, or lack of assent (e.g., Weintraub, 1987).²¹

²⁰ Note that this is true, too, of the graph of $f(x) = x^2$, in that there may be other inputs originating the same output: this means that no matter what other functions might originate the same curve, it *also* is a curve of $f(x) = x^2$.

²¹ Although Weintraub claims that lack of assent means simply lack of consciousness, her choice of the main ways in which unconscious beliefs manifest themselves – “through various pathological physical and mental phenomena: dreams, phobias, psychosomatic illness, hysteria, ‘faulty’ actions such as slips of the tongue, etc.”, which she sees as “evidence about the unconscious” (Weintraub, 1987, p. 428) – somehow contradicts this claim: most of these phenomena, if not all, indicate denial or rejection of the unconscious beliefs involved according to the psychoanalytical theory, as Weintraub is well aware and seems to agree with (cf. *ibid.*, p. 429). I do not intend to reject these as examples of unconscious beliefs; however, I see them as only a part, and by no means as the most significant one, of the vast number of unconscious beliefs that constitute most of our doxastic states. By this, I mean to say that there is no special weight to be attributed to pathological or ‘bizarre’ doxastic states in a theory of unconscious belief.

The fact is that unconscious beliefs, taken within a philosophical approach, appear to escape the realm of language,²² considered a *sine qua non* condition for beliefs even for dispositionalist readings, and thus greatly evade individualisation and formalisation. Due to this alienation from language, they appear not to be structured, namely in rational terms, and the tendency to see them as merely logical inferences might be explained as a way of rescuing their desired formal(-like), or linguistic(-like) character. Thus, it is not unusual that unconscious beliefs simply are not contemplated in a theory of belief, or are actually rejected as contributing to one (e.g., Ackermann, 1972, p. 11: “The first restriction usually adopted in studying the consistency of belief is to consider only conscious belief and rational belief.”).

These common readings of unconscious belief are not necessarily wrong; however, they represent only a part of what I see as unconscious belief:

An unconscious belief is a belief of which its holder is wholly unaware due to its specific genesis, structure, and/or meaning.

Let me clarify this:

a) *Genesis* of unconscious beliefs: data from experimental cognitive neuropsychology strongly suggests that unconscious beliefs are formed and processed in pathways that are not accessible to consciousness; for instance, the dual visual stream hypothesis, postulating two largely independent and functionally parallel pathways of processing of visual stimuli, the ventral and the dorsal streams, claims that visual percept processing in the dorsal stream alone is not accessible to consciousness (Bauer, 1984; Bridgeman, 1992; Milner & Goodale, 2007). We can deduce that beliefs formed with the assistance of this percept processing system remain altogether unconscious, or inaccessible.²³ Other clinical conditions studied by cognitive neu-

²² Contrarily to the psychoanalytical perspective, in which language often has a fundamental weight in the ontology of unconscious beliefs (e.g., Lacan, 1957/58[1998]).

²³ Inaccessibility to consciousness can be, and often is, understood as lack of attention, as in the case of automatised actions, but an important remark must be made in order to distinguish unconscious from ‘automatic’ beliefs, which contribute to a vast number of our daily actions; whereas the latter are those beliefs to which one is not paying attention but that might become the focus of attention, such as the beliefs behind the largely automatic be-

ropsychology that appear to preserve wholly unconscious belief formation in the absence of conscious doxastic states are blindsight, the puzzling ability shown by patients with blind fields to perceive visual stimuli, including stimuli of an affective nature, presented in their blind fields (e.g., de Gelder et al., 2008; Weiskrantz, 1986); left visuo-spatial neglect, a condition in which, despite claiming total unawareness of visual stimuli on their left visual side of space, patients show unconscious processing of visual information on that side (e.g., Marshall & Halligan, 1988); and prosopagnosia, the inability to consciously recognize faces, including one's own, while showing covert responses suggesting unconscious recognition (e.g., Tranel & Damásio, 1988). A particularly interesting case of unconscious belief formation is displayed by amnesic patients who show normal performance in lexical tasks in the repetition priming paradigm, suggesting that lexical learning has taken place (e.g., Graf, Squire, & Mandler, 1984).

Psychoanalytical theories, too, see the genesis of unconscious beliefs,²⁴ namely as the banning by means of repression of unwanted beliefs from the realm of consciousness, as one of their determining features (e.g., Freud, 1915a, 1915b). Postulating a psychical apparatus composed of more or less well-delimited 'regions' (the unconscious, the preconscious, and the conscious that account for Freud's first topographical theory of the psychical apparatus; see Freud, 1915a) or 'structures' (the id, the super-ego, and the ego that account for his second, more structural theory; see Freud, 1923), Freud explained how pathogenic ideas or beliefs gave origin to (were converted into) somatic distressing symptoms that were actually the expression of their 'fight' against repression. In this perspective, beliefs that originate in and are sent back to the unconscious are those that, for namely moral reasons, are deemed unacceptable by the preconscious or by the super-ego. But that they are unconscious does not mean that they do not influence or even determine action, as Freud thought to prove by means of the analysis of parapraxes (especially slips of the tongue and of the pen),

behaviour displayed in driving a car or in typing, the former are in principle not susceptible of attention.

²⁴ Beliefs, indeed, in that Freud (1915a) states clearly that what constitutes the nucleus of the unconscious are the *psychical, or ideational representatives* – or their *derivatives* – of the instincts, and not the instinctual impulses themselves; we are dealing here with ideas, or conceptions – in other words, beliefs.

forgettings, and other ‘mistakes’ (Freud, 1901), and even of jokes (Freud, 1905), besides that of the already mentioned neurotic symptoms, which he had already started as soon as in (Freud & Breuer, 1895), where he and J. Breuer concluded that their patients (diagnosed as hysterics) suffered mostly from unconscious reminiscences.

b) *Structure* of unconscious beliefs: not only the genesis of beliefs determine their inaccessibility to consciousness, but also their structure, in that they are hypothesized to be structured in such a way as to render them non-analysable or inexpressible in conscious and/or verbal terms. For instance, they might be holistic in the sense that representations cannot be decomposed into their atomic constituents (e.g., $P&Q$ as a single, non-decomposable representation; cf. Roberts & MacLeod, 1995), or they might simply be too complex, as defended by researchers working with artificial grammars and other complex systems (Broadbent FitzGerald, & Broadbent, 1986; Dienes, Altmann, Kwan, & Goode, 1995); their degree of structural abstractness can also explain their inaccessibility to consciousness (Reber, 1969; 1989). Another structural feature is incompleteness, or vagueness, as observed in experimentation in subliminal perception: stimuli presented below the threshold of conscious perception due to brevity of presentation or weakness of intensity are perhaps too insufficiently structured to allow conscious perception but enough so that they can be unconsciously processed (Spence & Holland, 1962); masked stimuli might be processed in a similar way (Marcel, 1983). For Freudian psychoanalytical theory, many unconscious beliefs arise directly from instincts (*Instinkte*) and drives (*Triebe*), or mere ‘quantities’ of psychical energy, or excitation, on the border between the physical and the psychical; what Freud calls the unconscious is composed in large part of the ideational representatives, or derivatives of such physiological-mental states, ideations that are not yet apprehensible by consciousness due to this structural ambiguity (Freud, 1915a, 1923; see footnote 24). This is so also because of a structural deficiency by the part of the unconscious ideations, restricted to thing-representations and lacking the word-representations that the conscious – together with the former – possesses (cf. Freud, 1915a).

c) *Meaning* of unconscious beliefs: this is what for psychoanalysis actually determines the unconscious character of a belief, i.e., the sweeping under the carpet of unconsciousness of the beliefs that do not pass the con-

trol of the preconscious, in earlier Freudian terms, or of the super-ego, according to later Freudian terminology (Freud, 1915a, 1915b, 1923). But the importance of the meaning of unconscious beliefs is not restricted to this field alone: contemporary experimental psychology tends to see unconscious beliefs in an evolutionary perspective as having a survival meaning. Take a situation of sudden danger, for instance: evolution appears to have fitted us with a sort of action-before-reflection skill which might increase our survival chances when there simply is no time to think consciously. Still other explanations of unconscious beliefs have to do with the pursuit of goals (e.g., the Somatic Marker Hypothesis: Bechara & Damásio, 2005; Damásio, Tranel, & Damásio, 1991) and our social relations; the latter seem to be greatly grounded on unconscious beliefs concerning the facial expressions, overall physical appearance and constitution, etc., of those we interact with (Lewicki, 1986; Nisbett & Bellows, 1977). It is postulated that resorting to conscious doxastic states in these instances would greatly hinder beneficial action.

It is important to emphasize that these three aspects are not distinct from each other, being associated in obvious ways: the structure of a belief might be too vague precisely because it was formed with the help of the dorsal visual stream, which is not meant to capture details with an identification in view, and this clearly gives a meaning of survival, especially in cases in which the dorsal stream alone can guide the behaviour of an agent in the navigation of obstacles. Nor am I claiming that these are the only features that matter in terms of the definition of unconscious beliefs: they are those that have more weight to help us to distinguish both kinds of belief, conscious and unconscious.

Having thus defined and characterized unconscious beliefs, when are we, so to say, authorized to ascribe them, perhaps even against the self-knowledge of the individuals concerned? When we witness *behaviours that are not acknowledged by the agents and, yet, appear to be goal-directed and to be guided by reliable and trustworthy belief formation processes that secure the wellbeing of those agents*. This 'authorization' is grounded on the following main presuppositions:

a) Behaviour is a function of belief (this has been duly discussed above and no more need be said on it).

b) Our mental life does not equate with consciousness, which means that a vast number of our beliefs, if not the majority, are held in an unconscious way. This hardly needs scientific evidence; for those of a more sceptic nature, for whom everyday experience is not enough, one need only bring into the discussion such phenomena as dreams, somnambulism, day dreaming, etc. But the best proof we have of this is in fact a vast amount of experimental evidence suggesting that we more often than not *learn, memorize, decide, plan, judge*, etc. – i.e., *act* – in a wholly unconscious way, sometimes even in states in which consciousness is safely ruled out, such as in coma or in anaesthesia (see Augusto, 2010). Does this make sense? Indeed it does, given that even in states of unconsciousness, like sleep, our perceptive and cognitive apparatus does not simply turn off, responding in unconscious ways to cues from the environment; for instance, we do not – often, at least! – fall off our beds when sleeping, by and large respecting their dimensions; still when sleeping, we only answer to auditory cues due to either their great intensity or personal relevance (our name, for example); etc.

c) From an evolutionary point of view, the postulation of an unconscious mentation, or of unconscious beliefs tout court, appears justified. Reber (1992a; 1992b), based on four cornerstone principles of evolutionism²⁵ that together state that the earliest and (most) successful in evolution is preserved, often across species boundaries, lays down an axiom establishing the recency of consciousness as compared to an earlier, sophisticated, unconscious perceptual and cognitive system (Reber, 1992a, p. 39). Reber intends to explain features of unconscious knowledge such as robustness, age-independence, low variability, IQ-independence, and commonality of process, by appealing to this axiom. Despite the fact that evolutionism appears to be for many a controversial theory, Reber's hypothesis is posed in terms that allow of falsification, and thus can be taken as an at least serious attempt at explaining the why of unconscious knowledge in an animal that seems to rely so much on consciousness. Besides these, other features can certainly be postulated within this evolutionary scenario; for instance, as already mentioned, unconscious beliefs, perhaps because of this evolutionary earliness, are also earlier compared to conscious ones, which explains the way we act in dangerous situations without being able to account

²⁵ The principles of success, conservation, stability, and commonality (see Reber, 1992a, p. 38; 1992b, p. 112f).

consciously for our actions; also, the evolution of an unconscious memory system seems to be earlier in evolution in that, and appealing to Jackson's principle (stating that the degree of resistance of a mental function is directly related to its antiquity in a species), what we may term procedural memory is largely unaffected in cases in which declarative (conscious) memory is damaged (e.g., Graf et al., 1984), which perhaps represent the majority of cases of amnesia. Still another evolutionary explanation for the existence of two different memory systems, one conscious and the other unconscious, is the idea of functional incompatibility proposed by Sherry and Schacter (1987): the idea makes sense if one sees a structural and qualitative difference between both the percepts and the processes that lead to conscious and unconscious knowledge bases. The psychoanalytical stance too is not averse to an evolutionary posture, unconsciously formed and repressed ideas and beliefs appearing as a more or less efficacious way of securing our wellbeing against the disruption brought on by feelings of guilt and by beliefs contrary to our moral and ethical standards (see, for example, Slavin & Kriegman, 1992).

d) The dynamic unconscious, as a hypothesis, seems justified; after all, what is at issue is the fact that much of our behaviour seems to be guided, if not determined, by beliefs of which we are not aware but that strongly threaten to disrupt our wellbeing due to their pathogenic character (Freud, 1900, 1912, 1915a, 1923). It is true that the notion of repressed ideas or beliefs is controversial and basically non-falsifiable,²⁶ but the Freudian approach to concrete material such as parapraxes, mistakes, and jokes (Freud, 1901, 1905) strongly supports the conception that unconscious beliefs striving for expression often succeed in replacing consciously planned and willed actions. Moreover, given that the application of psychoanalytical theories for therapeutic ends is not altogether null,²⁷ it is only

²⁶ Although I would argue that, because ethics and morality are so important to humans, the notion of repressed beliefs appears almost inevitable, as supported by evolutionary ideas, for instance (see above).

²⁷ I have no data on which to support this statement; I simply think that in case the therapeutic value of psychoanalysis were null, it would have been made known long ago by the patients treated with this method, and psychoanalysis would have more or less gracefully disappeared from the list of contemporary therapeutic methods. (I base my belief on the fact that the clients of psychoanalytical therapy are, to a great extent, informed people.)

reasonable to think that, at least at a purely heuristic level, psychoanalysis, whose foundation lies on the distinction between unconscious and conscious psychical life and on the primacy of the former over the latter,²⁸ is not to be too hastily dismissed.

Using both the data provided by experimental psychology and the observations and insights of psychoanalysis,²⁹ and appealing to the theory of belief elaborated above, we can see the following situations as doxastic states involving unconscious beliefs:

– When presented with stimuli in his blind field, D.B., a patient with blindsight, is believed to form unconscious beliefs concerning their shape, location, orientation, and kinetic state. Although he denies awareness of the stimuli, i.e., he consciously believes he does not perceive the stimuli, he nevertheless is capable, often with great accuracy, of identifying them and some of their properties (Weiskrantz, 1986).

– T.N., another patient with blindsight, is capable of navigating in space without bumping against obstacles, despite cortical blindness over his entire visual field (de Gelder et al., 2008); this strongly suggests that T.N. holds unconscious beliefs regarding environmental stimuli.

– Patients with left visuo-spatial neglect appear to be able to form unconscious beliefs that have to do with meaning: P.P., while claiming no awareness of stimuli on her visual left side, was somehow capable of realizing that one of the two identical houses she was shown had a negative feature (a fire) on its left, and she consistently preferred the intact one (Marshall & Halligan, 1988).

This, however, would not weaken the scientific value of the hypothesis of an unconscious cognition, though this is clearly not controversy-free.

²⁸ “The division of the psychical into what is conscious and what is unconscious is the fundamental premise of psycho-analysis; and it alone makes it possible for psycho-analysis to understand the pathological processes in mental life, which are as common as they are important, and to find a place for them in the framework of science. To put it once more, in a different way: psycho-analysis cannot situate the essence of the psychical in consciousness, but is obliged to regard consciousness as a quality of the psychical, which may be present in addition to other qualities or may be absent.” (Freud, 1923 [1966, p. 13])

²⁹ Throughout this paper, I put data from experimental psychology with observations and insights from psychoanalysis on the same footing, with a view to the aim stated above in the Introduction; moreover, both are here used mainly for illustrative – rather than ‘proving’ – effects.

– When patients with prosopagnosia are shown faces of people they are affectively close to, such as faces of relatives and friends, they appear to form unconscious beliefs of recognition displayed indirectly in their SCRs (Bauer, 1984; Tranel & Damásio, 1988).

– People exposed to highly complex artificial grammars without a learning strategy, i.e., without the attention required for conscious learning, seem to form unconscious beliefs regarding the rules of these grammars: when asked about the grammatical status of new strings, they answer correctly well above chance, despite claiming to be just guessing (Dienes et al., 1995; Reber, 1967).

– Long before gamblers in the Iowa Gambling Task (Bechara, Damásio, Damásio, & Anderson, 1994) begin to form a hunch about what the game is all about, they already appear to have unconscious beliefs about which decks are to be avoided and which to be chosen; as a matter of fact, gamblers can decide advantageously relying solely on these unconscious beliefs associated with what Damásio and colleagues have called somatic markers (Bechara & Damásio, 2005).

– Amnesics incapable of recalling data from their declarative, or explicit memory system are apparently still capable of forming and recalling unconscious beliefs by resorting to their procedural, or implicit memory system; this ability is displayed in tasks involving repetition priming and skill learning (Graf et al., 1984).

– Freud found that once hysterical patients were told about their repressed beliefs, their somatic distressing symptoms (contractions, convulsions, pains, etc.) would disappear, leading him to believe that unconscious memories were the cause of the disorder (Freud & Breuer, 1895). For instance, Miss Lucy R., a governess that consulted with Freud, saw her troublesome somatic problems (she complained above all of having completely lost the sense of smell and, at the same time, of being pursued by one or two wholly subjective – i.e., hallucinatory – olfactory sensations) vanish once she admitted to herself that she was in love with her employer (cf. Freud & Breuer, 1895). This and other kinds of ‘irrational’ and ‘illogical’ behaviour were seen to be grounded on unconscious beliefs (e.g., Freud, 1915a, 1923).

– Analysing concrete material such as parapraxes, forgettings (of proper names, of foreign words, of word order, of impressions and resolu-

tions, etc.), and miscarried actions, Freud concluded that repression was behind every error; for instance, the man who takes the wrong train – which will take him where he actually wants to spend his holiday – instead of the train he had forcefully decided to take in order to perform a social duty, can be said to have acted on the superior strength of an unconscious belief (Freud, 1901). Other instances of unconscious beliefs overcoming conscious ones can be found in the spontaneity of jokes, which display formation techniques analogous to those responsible for the dream work (namely displacement and condensation; cf. Freud, 1905).

Conclusion: the pay off

What is the pay off, for us, of this theory of belief and belief ascription? We now can ascribe beliefs in situations in which such ascription could not, easily or altogether, be carried out before. Namely, we now can take unconscious beliefs into account, and elaborate on a theory of unconscious beliefs as candidates for a positive epistemic status. This will provide us with a stronger foundation for a theory of knowledge, as no such theory will be sound or complete unless unconscious beliefs are fully considered, since they represent the vast majority of our beliefs. In turn, a stronger, more robust theory of knowledge will contribute to the development of cognitive psychology, which largely relies on the postulation of beliefs as a mental phenomenon, and even of psychoanalysis, whose reliance on unconscious beliefs actually lies at the foundation of its entire edifice. Other disciplines dealing with belief will undoubtedly profit directly or indirectly from this; we speak here of, for instance, medicine in general and psychiatry in particular, the education sciences, knowledge management, and consumer behaviour.

References

- ACKERMANN, R. J. (1972). *Belief and Knowledge*. New York: Anchor Books.
- ARMSTRONG, D. M. (1973). *Belief, Truth, and Knowledge*. Cambridge: Cambridge University Press.
- AUGUSTO, L. M. (2009). Do unconscious beliefs yield knowledge? *Revista Filosófica de Coimbra*, 35, p. 161-184.

_____ (2010). Unconscious knowledge: A survey. *Advances in Cognitive Psychology*, 6, p. 116-141.

BAUER, R. M. (1984). Autonomic recognition of names and faces in prosopagnosia: A neuropsychological application of the Guilty Knowledge Test. *Neuropsychologia*, 22:4, p. 457-469.

BECHARA, A., DAMÁSIO, A. R., DAMÁSIO, H., & ANDERSON, S. W. (1994). Insensitivity to future consequences following damage to the human prefrontal cortex. *Cognition*, 50, 7-15.

BECHARA, A., & DAMÁSIO, A. R., (2005). The Somatic Marker Hypothesis: A neural theory of economic decision. *Games and Economic Behavior*, 52, p. 336-372.

BRIDGEMAN, B. (1992). Conscious vs. unconscious processes: The case of vision. *Theory & Psychology*, 2:1, p. 73-88.

BROADBENT, D. E., FITZGERALD, P. & BROADBENT, M. H. P. (1986). Implicit and explicit knowledge in the control of complex systems. *British Journal of Psychology*, 77, p. 33-50.

BYRNE, R. W. (2006). Animal cognition: Know your enemy. *Current Biology*, 16:17, p. R686-R688.

DAMÁSIO, A. R., TRANEL, D. & DAMÁSIO, H. (1991). Somatic markers and the guidance of behavior: Theory and preliminary testing. In: H. S. LEVIN, H. M. EISENBERG, & A. L. BENTON (eds.), *Frontal Lobe Function and Dysfunction*. New York: Oxford University Press, p. 217-229.

DENNET, D. C. (1983). Styles of mental representation. *Proceedings of the Aristotelian Society*, 83, p. 213-226.

DIENES, Z., ALTMANN, G. T. M., KWAN, L., & GOODE, A. (1995). Unconscious knowledge of artificial grammars is applied strategically. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 21:5, p. 1322-1338.

FREGE, G. (1892). Über Sinn und Bedeutung. *Zeitschrift für Philosophie und philosophische Kritik*, 100, p. 25-50.

FREUD, S. (1900). *Die Traumdeutung*. Leipzig / Wien: Franz Deuticke. [English translation: (1953). *The Interpretation of Dreams. The Complete Psychological Works of Freud. The Standard Edition*, vols. IV-V, trans. by J. Strachey, London: The Hogarth Press.]

_____ (1901). *Zur Psychopathologie des Alltagslebens*. In *Monatsschrift für Psychiatrie und Neurologie*, 10:1/2. [English translation: *The Psychopathology of Everyday Life. The Complete Psychological Works of Freud. The Standard Edition*, vol. VI, trans. by J. Strachey, London: The Hogarth Press.]

_____ (1905). *Der Witz und seine Beziehung zum Unbewussten*. Leipzig / Wien: Franz Deuticke. [English translation: *Jokes and their Relation to the Unconscious. The Complete Psychological Works of Freud. The Standard Edition*, vol. VIII, trans. by J. Strachey, London: The Hogarth Press.]

_____ (1912). A note on the unconscious in psycho-analysis. *Proceedings of the Society for Psychical Research*, 26 (Part 66), p. 312-318. [(1958). *The Complete Psychological Works of Freud. The Standard Edition*, vol. XII, trans. by J. Strachey, London: The Hogarth Press, p. 255-266.]

_____ (1915a). Das Unbewusste. *Internationale Zeitschrift für Psychoanalyse*, 3:4, p. 189-203 and 3:5, p. 257-269. [English translation: (1968). The unconscious. *The Complete Psychological Works of Freud. The Standard Edition*, vol. XIV, trans. by J. Strachey, London: The Hogarth Press, p. 166-215.]

_____ (1915b). Die Verdrängung. *Internationale Zeitschrift für Psychoanalyse*, 3:3, p. 129-138. [English translation: (1968). Repression. *The Complete Psychological Works of Freud. The Standard Edition*, vol. XIV, trans. by J. Strachey, London: The Hogarth Press.]

_____ (1923). *Das Ich und das Es*. Leipzig, Vienna, Zürich: Internationaler Psychoanalytischer Verlag. [English translation: (1961) *The Ego and the Id. The Complete Psychological Works of Freud. The Standard Edition*, vol. XIX, trans. by J. Strachey, London: The Hogarth Press, p. 3-66.]

FREUD, S., & BREUER, J. (1895). *Studien über Hysterie*. Leipzig / Wien: Franz Deuticke. [English translation: (1955). *Studies on Hysteria. The Complete Psychological Works of Freud. The Standard Edition*, vol. II, trans. by J. Strachey, London: The Hogarth Press.]

DE GELDER, B. et alii (2008). Intact navigation skills after bilateral loss of striate cortex. *Current Biology*, 18:24, p. 28-29.

GRAF, P., SQUIRE, L. R., & MANDLER, G. (1984). The information that amnesic patients do not forget. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 10:1, p. 164-178.

- HEYES, C. M. (1998). Theory of mind in nonhuman primates. *Behavioral and Brain Sciences*, 21, p. 101-148.
- VON HUMBOLDT, W. (1836). *Über die Verschiedenheit des menschlichen Sprachbaues und ihren Einfluss auf die geistige Entwicklung des Menschengeschlechts*. Berlin: Dümmler.
- LACAN, J. (1998). *Le Séminaire, Livre V: Les formations de l'inconscient*. Paris: Seuil.
- LEIBNIZ, G. W. [1765](1993). *Nouveaux essais sur l'entendement humain*. Paris: Flammarion.
- LEWICKI, P. (1986). *Nonconscious Social Information Processing*. New York: Academic Press.
- MARCEL, A. J. (1983). Conscious and unconscious perception: Experiments on visual masking and word recognition. *Cognitive Psychology*, 15, p. 197-237.
- MARSHALL, J. C., & HALLIGAN, P. W. (1988). Blindsight and insight in visuo-spatial neglect. *Nature*, 336, p. 766-767.
- MILNER, A. D. & GOODALE, M. A. (2007). Two visual systems reviewed. *Neuropsychologia*, 46: 3, p. 774-785.
- MOORE, G. E. (1953). *Some Main Problems of Philosophy*. London: Unwin.
- NAGEL, T. (1974). What is it like to be a bat? *Philosophical Review*, 83, p. 435-456.
- NISBETT, R. E., & BELLOWS, N. (1977). Verbal reports about causal influences on social judgments: Private access versus public theories. *Journal of Personality and Social Psychology*, 35:9, p. 613-624.
- RADFORD, C. (1966). Knowledge: By examples. *Analysis*, 27:1, p. 1-11.
- RADFORD, C. (1970). Does unwitting knowledge entail unconscious belief? *Analysis*, 30:3, p. 103-107.
- RAMSEY, F. P. (1931). *The Foundations of Mathematics, and Other Logical Essays*. London: Routledge and Kegan Paul.
- REBER, A. S. (1967). Implicit learning of artificial grammars. *Journal of Verbal Learning and Verbal Behavior*, 77, p. 317-327.
- REBER, A. S. (1969). Transfer of syntactic structure in synthetic languages. *Journal of Experimental Psychology*, 81:1, p. 115-119.
- REBER, A. S. (1989). Implicit learning and tacit knowledge. *Journal of Experimental Psychology: General*, 118:3, p. 219-235.

- REBER, A. S. (1992a). An evolutionary context for the cognitive unconscious. *Philosophical Psychology*, 5:1, p. 33-38.
- REBER, A. S. (1992b). The cognitive unconscious: An evolutionary perspective. *Consciousness and Cognition*, 1, p. 93-133.
- ROBERTS, P. L., & MACLEOD, C. (1995). Representational consequences of two modes of learning. *Quarterly Journal of Experimental Psychology, Section A*, 48:2, p. 296-319.
- RUSSELL, B. (1912). *The Problems of Philosophy*. Oxford: Oxford University Press.
- SAPIR, E. (1929). The status of linguistics as a science. *Language*, 5:2, p. 207-214.
- SLAVIN, M. O., & KRIEGMAN, D. (1992). *The Adaptive Design of the Human Psyche. Psychoanalysis, Evolutionary Biology, and the Therapeutic Process*. New York: The Guilford Press.
- SHERRY, D. F., & SCHACTER, D. L. (1987). The evolution of multiple memory systems. *Psychological Review*, 94:4, p. 439-454.
- SPENCE, D. P., & HOLLAND, B. (1962). The restricting effects of awareness: A paradox and an explanation. *Journal of Abnormal and Social Psychology*, 64:3, p. 163-174.
- TARSKI, A. (1944). The semantic conception of truth and the foundations of semantics. *Philosophy and Phenomenological Research*, 4:3, p. 341-376.
- TRANEL, D. & DAMÁSIO, A. R. (1988). Non-conscious face recognition in patients with face agnosia. *Behavioral Brain Research*, 30, p. 235-249.
- WEINTRAUB, R. (1987). Unconscious mental states. *Philosophical Quarterly*, 37:149, p. 423-432.
- WEISKRANTZ, L. (1986). *Blindsight: A case study and implications*. Oxford: Clarendon Press.
- WHORF, B. L. (1941). The relation of habitual thought and behavior to language. In L. SPIER (ed.), *Language, Culture, and Personality: Essays in Memory of Edward Sapir*, Menasha, Wis.: Sapir Memorial Publication Fund.