

# Emotional Introspection

## I. The Representational Theory of Consciousness

It would be hard to deny that the experience of emotion is one of the most significant aspects of consciousness. While it is possible to imagine a being who enjoyed some forms of consciousness while lacking any awareness of its emotional states, such a being's conscious life would be radically different from human consciousness. Yet, I believe that in fact we are surrounded by such beings and, most of the time, we ourselves are such. This is not to say that such beings lack emotions, or that they lack consciousness, or even that they lack a specific sort of emotional consciousness. But to be conscious of one's own emotional state is much more complex than any of that, and much more rare.

The framework within which I want to explore emotional consciousness is that of the representational theory of consciousness (RTC). One of the most exciting and fruitful advances in recent philosophical research in consciousness, there is now a plethora of distinct versions of RTC (see for example Carruthers 2000, Dretske 1995, Gennaro 1999, Lycan 1996, Rosenthal 1985, 1993a, 1993b, Tye 1995). Although I think the ultimate mystery of how or why the brain generates conscious experience remains unresolved by RTC, the theory nonetheless offers many insights into the nature of consciousness, and provides a theoretical viewpoint which addresses many of the philosophical problems of consciousness. In this paper, I want to extend the RTC so as to provide a theory of emotional consciousness and emotional introspection.

The RTC postulates that if a cognitive system is conscious then it represents. More, consciousness *is* a kind of representation. Obviously, not every system that represents is conscious and not every representation generated by a conscious system is a conscious representation. Unfortunately, it is not yet very well understood what are the exact criteria for a representation's being a conscious representation. Very abstractly, RTC posits that representations which play a certain 'appropriate' role within a cognitive system of 'sufficient' complexity are conscious representations. A number of theories offer quite different accounts of the nature of 'appropriateness' and 'sufficiency' (see the list of references given above). There is vigorous controversy amongst proponents of these accounts.

Part of the contentiousness here is that most advocates of RTC wish to enlist the theory in defense of physicalism, and thus hope to explicate 'appropriateness' and 'sufficiency' in such a

way that the generation of consciousness in a purely physical system will thereby be explained. This ambitious goal can be divorced from RTC however. RTC has plenty of virtues independent of an outright and immediate solution to the ‘hard problem of consciousness’.

For example, we might hold out hope that *representation* itself can be successfully naturalized (that is, rendered explicable from a physicalist perspective) so as to effectively isolate the hard problem. The more this problem can be circumscribed the more hope for its eventual solution.

RTC has no problem of qualia. The experience of, say, redness is a representation of red; there need be no inner states with mysterious ‘qualitative’ properties or – even more implausibly – properties, like color, smell, or sound, that do not properly apply to neural states at all (a representation of red need not itself be red). Other classic difficulties in the theory of consciousness, such as the inaccessibility of what it is like to be a certain kind of conscious being (or to have certain sorts of conscious experiences) and the attendant *ineffability* of consciousness, are thereby plausibly defused in RTC without denying the phenomena. The explication depends simply on the inaccessibility of certain modes of representation. To know, for example, the subjective character of bat echo–locatory experiences (see Nagel 1974) I would at least need to *possess* a bat’s particular mode of representing. Since I don’t have this representational capacity, I cannot represent the world the way a bat does and thus can have no access to that mode of representation. Nonetheless, I can in principle know perfectly well *what* the bat is representing and I can, again in principle, know the details of how the bat manages to represent those features of the world. Why should anyone expect that my figuring out what and how the bat represents will generate bat–mode representations in me? And why should my lack of bat–mode representations be a problem for physicalism?<sup>1</sup>

Although most of the controversy about consciousness focusses on *phenomenal* consciousness, that is, the qualitative nature of perceptual consciousness (colors, smells, tastes, etc.) and conscious sensations (pains, tickles, twinges, etc.), there is a second kind of consciousness associated with conscious thought or what might be called *intentional* consciousness. It seems to me that I sometimes am consciously thinking without there being any phenomenal features of consciousness attached to my thoughts (although there is the usual field of phenomenal consciousness accompanying my thinking). For example, figuring out directions from a map involves consciously thinking about the map and this goes beyond merely being

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<sup>1</sup> This line of argument has been advanced by each of Dretske 1995, Tye 1995 and Carruthers 1999; see also Loar 1990 and Harman 1990.

presented with the visual appearance of the map, and does not, at least not always, involve any stream of “inner speech” about the map. In addition to its phenomenological plausibility, there is some (perhaps not very strong) empirical evidence in support of this distinctive form of consciousness (see Hurlburt 1990, Lecours and Joannette 1980<sup>2</sup>). The RTC nicely unifies both forms of consciousness insofar as they equally involve representation and can be postulated to invoke the same mechanisms of consciousness generation, whatever those might be. The particular target of this paper, emotional consciousness, seems to be one place where the two forms of consciousness are closely integrated since emotion necessarily involves both phenomenal and cognitive components.

Furthermore, RTC comes with a high degree of general phenomenological plausibility. At least, it seems to me that my states of consciousness are primarily in the business of representing various features of the world from a particular point of view. Of course, we must include the conscious subject within the field of representation. But this too is not implausible. The job of pain, for example, is to carry vital information about the state of the body, or parts of the body. It is true that RTC goes further to claim that *every* state of consciousness is representational and this has traditionally been regarded as problematic. Sometimes the qualitative nature of perceptual experience itself is thought to be non-representational. In some versions of the inverted spectrum thought experiment, all representationality is said to be preserved across the subjects with inverted color perception even though the qualitative nature of their states of color consciousness are radically different (see for example Block 1990). But in truth there seems no difficulty in supposing that a subject could represent the color of something as red, even though the subject’s external relations (behavioral and linguistic) connect this representation to green things, although rather deep issues of narrow versus wide content and other philosophical minefields threaten here (see Carruthers 2001, ch. 4; Seager 1999, ch. 6). Less narrowly philosophical worries stem from diffuse states of consciousness such as moods. I think the proper treatment of moods views them as a kind of general representational tone, with widespread effects on one’s representational machinery, rather, as the old proverb suggests, like wearing tinted glasses (elation is like wearing

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<sup>2</sup> The latter paper reports on the case of a man who during epileptic seizures retains consciousness but entirely loses linguistic abilities, being neither able to produce nor comprehend language (aural or written). Afterwards, he nonetheless reports that he can consciously think during these episodes. For example, during one such attack he went into a restaurant and, being unable to read the menu or talk to the waiter, simply pointed to something in the menu. He reports that he knew what he was doing at the time and hoped that he would like what he had pointed to. This certainly suggests a mode of conscious thought not dependent upon conscious inner speech.

rose-tinted glasses, depression would, I guess, be like donning blue spectacles). This topic takes us close to the field of the emotions and more will be said about it below<sup>3</sup>.

Finally, RTC leads naturally to a very interesting and plausible account of introspection which offers insight into the nature of emotional consciousness and which it is the main purpose of this paper to explore.

It is impossible to move on without adverting again to the fact that there are several quite distinct forms of RTC. The primary distinction is that between first-order versus higher-order accounts (FOR vs. HOR theories). HOR theories explain consciousness as being essentially a kind of meta-representation: a state is conscious just in case it is the target of a higher-order mental state about it. Various objections require that quite stringent conditions of ‘appropriateness’ have to be placed upon these meta-representations, both in their content and mode of production, to generate a plausible theory of consciousness. FOR theories attempt to explicate consciousness without this extra layer of representation, although they also appeal to relations between the first-order representations and other complex cognitive states and systems and, no less than the HOR theories, have to place stringent constraints on just which first-order representations will count as conscious. Neither kind of account is obviously better than the other and both have vigorous defenders.

However, much of what I want to say is independent of the details of RTC or the HOR vs. FOR debate. I will throughout assume that some form of *first-order* representationalism offers the correct account of consciousness. I happen to believe that the first-order account provides a better theory of consciousness, and allows a more straightforward account of introspection and its relation to emotional consciousness. But I expect that much of what I say could be readily adapted to a HOR perspective.

## **II. The Significance of Emotional Consciousness**

Despite recent twin surges in philosophical interest in both emotion and consciousness, *emotional consciousness* has been curiously overlooked by philosophers. I believe this is the result of an understandable but narrow focus on understanding the phenomenality of perceptual consciousness. Yet emotional consciousness is a highly distinctive feature of our conscious lives, perhaps the central feature of which phenomenal consciousness and conscious thought

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<sup>3</sup> I am of course rushing by topics that deserve much deeper consideration. See Lycan 1996, chs. 5–7, Carruthers 2001, ch. 5 and Seager 1999, ch. 8.

themselves are best seen as mere components.

At the same time, work in cognitive science more generally has been emphasizing the importance of the emotions within cognition, and their neurological underpinnings. For example, the work of Damasio (1994) and LeDoux (1996) reveals that emotional response is at the core of cognition (Damasio also sees emotion as central in the account of consciousness, while LeDoux is more ambivalent about the relation of consciousness to the emotions). This work as well as many other studies strongly supports the idea that emotional engagement with the world is at the root of cognition<sup>4</sup>.

Fundamentally, emotions serve as a quick, sometimes dirty, assessment of the *value* – positive, negative or neutral – of whatever we encounter in the world. Simple minds regard as valuable only that which is useful (positive) or dangerous (negative) relative to the most basic and immediate biological needs of the organism. Complex minds layer additional, more abstract forms of value on this basic system of value assessment, but never leave it behind<sup>5</sup>. But there is little point to possessing a measure of value if there is nothing you can do about it after assessment. Equally, there is no point to being able to maneuver through the world without some guide about where it would be worthwhile to go and what it would be worthwhile to do. Thus the integration of action with value assessment was high on the list of nature's priorities. But while there could be no action without value assessment and no value assessment without the possibility of action, this co-dependence should not disguise the conceptual dependence of action upon value. Fundamentally, we act because we value something; we do not value things because we act.<sup>6</sup>

Furthermore, the possession of a guide to action in the form of value assessment is the spur towards the joint development of cognition and perception. The ability to plan and form devious and complex routes to the valued has clear advantages over mere approach or avoidance behavior. Contrast the lowly amoeba with any mammal. Although I don't wish to suggest that the

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<sup>4</sup> For more of an overview see Panksepp 1998 or Lane *et. al.* 1999.

<sup>5</sup> Artifactual minds will have to have their values imposed upon them by their designers, but they no less than evolved minds must be able to assess the value of things in their environment if they are to act successfully in a changing world, or even if they are to act at all. One key difference between a *mind* and a mere program is autonomy, but autonomy requires prioritizing possible actions, which is based upon value assessment.

<sup>6</sup> Paradoxical, often pathological, special cases in complex cognitive systems where valuing follows acting can certainly be found. Thus in Pascal's famous wager on the existence of God, Pascal notes that while one cannot will oneself to believe, if one goes to church, engages in religious ritual and generally acts religiously one will come to believe in (and hence to value) religious doctrine. While Pascal is psychologically astute, the case is obviously peculiar and, of course, depends upon possessing certain other prior values.

amoeba is conscious (RTC explains the absence of consciousness despite reactive behavior via the presumed lack of appropriate representational machinery within the amoeba) the amoeba is nonetheless a model of a very simple positive–negative value assessor. The amoeba ‘flows’ towards certain favored chemical concentrations and away from disfavored ones. Thus it acts. Adding remote sensing abilities would evidently be useless without the cognitive machinery which makes sensory information valuable. Mammals possess a rich sensory apparatus, and thus also the cognitive abilities to exploit the information thus provided.

It is therefore likely that emotional consciousness is about the most primitive as well as conceptually primary form of consciousness which then co–developed with sensory and cognitive systems during the evolution of animals. That is, it was the need to improve the accuracy of, and the remote assessment of, the value of stimuli to an organism, as determined by basic biological needs, which explains why perceptual consciousness appeared and prospered<sup>7</sup>. The aversiveness of pain, one of the most vivid features of its phenomenology and one which can be divorced from its accompanying sensory phenomenology, is an experience of ‘pure negative value’. The aversiveness of pain and the similarly fundamental attractions of pleasure, coming in a scale of negative to positive value assessments, were, I think, the first, and certainly functionally primary, elements of consciousness and they were also the birth of the emotions.

A classic split–brain experiment offers striking support for the thesis that emotional *consciousness* is a ‘primitive’ feature of the brain. In this experiment, the patient was (via a clever optical device) shown an emotionally charged film exclusively to her right hemisphere. The patient then reported experiencing disturbing emotions despite being completely unaware of their source. It is also very interesting that the patient went on to attempt to account for the emotional response, with such remarks as “I don’t know why, but I feel scared ... I know I like Dr. Gazzaniga, but right now I’m kind of scared of him” (Gazzaniga 1985, p. 77). It is presumed that the emotional ‘charge’ of the film passed from right to left hemisphere via intact low level

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<sup>7</sup> It is true that some versions of RTC regard phenomenal consciousness, at least, as a kind of accident of evolution, sparked by the independent development of a ‘theory of mind’ (see Carruthers 2000 for such a theory). Such views do not dispute the need for accurate value assessment as the basis of action; they just withhold the ascription of consciousness to such states. This has the consequence that very few organisms are actually conscious (roughly, only human beings post theory of mind acquisition, which is generally thought to occur between the ages of three and four years in the individual and might have been a late development of our species, perhaps only forty or fifty thousand years old, or conceivably much less). Although such an account is possibly correct (which reveals once again how feeble is our grasp on the nature and function of consciousness) it seems implausible to me and I will assume that consciousness was evolutionarily useful, and appeared quite early in the development of animals for the reasons discussed.

connections (e.g. the anterior commissure) residing below the disconnected cerebral hemispheres. It should be no surprise that the evaluative functions of the emotions depend upon very old and basic brain structures, but this case of conscious emotion in the absence of awareness of the emotive stimulus seems also to suggest that emotional consciousness is similarly ancient. Furthermore, the way in which the patient attempted to attribute her feeling of fear to a particular object of awareness (Dr. Gazzaniga in this case) illustrates the cognitive component of emotional consciousness, as well as the frequently observed human tendency to ‘confabulate’ mentalistically cogent explanations for otherwise discordant feelings or behavior (see Nisbett and Wilson 1977 for a classic discussion of this). Finally, this case is an interesting specimen of introspective error, which any theory of introspection ought to be able to explain.

Only after the core emotional capabilities were in place would there be a role for sensory consciousness. For example, we, and many other animals, use our color vision to tell the difference between ripe and unripe fruit, but the point of this exceedingly complex and metabolically expensive machinery is evidently to perfect the discrimination of the good-to-eat from the bad-to-eat. Sensory faculties arose to assist the pre-existing value assessment systems, as early warning systems or to exploit the signs of remote enticement which the environment provides. Of course, more sophisticated behavioral capacities would co-evolve with the ability to detect value-at-a-distance. In turn, this would lead to the creation of much more complex and finely differentiated emotional states (the trail from pain to petulance or *schadenfreude*) in a spiral of behavioral, sensory and emotional co-development.

One thing which is especially interesting about emotional consciousness in general is that it has a ‘dual character’, possessing elements of both qualitative or phenomenal consciousness and intentional consciousness. Any strongly felt emotion makes this evident. In fear, for example, there are highly characteristic feelings coupled to the idea of a threat or danger to oneself. These components are themselves complex. The intentional element inherits all the possible complexity of thoughts themselves (someone can be *afraid* that the continuum hypothesis is absolutely undecidable for example). I will try to show below that the *feeling* component is also complex in nature, involving at least three distinguishable elements of consciousness: bodily arousal, perception and evaluation of these elements (including itself, recursively).

I do not think that any component can be slighted. In William James’s theory of the emotions the aspect of bodily feeling is taken as primary. James writes ‘My thesis on the contrary is that

the bodily changes follow directly the *perception* of the exciting fact, and that our feeling of the same changes as they occur *is* the emotion' (James 1884, p. 190). However, it is perfectly possible to experience such bodily arousal without any particular emotion being fixed or experienced thereby. Any asthmatic knows the effect of a *ventolin* inhaler, which quite adequately mimics excitement or nervousness without creating any emotional response. The famous Schacter and Singer experiments (Schacter and Singer 1962) succeeded in evoking opposite emotional responses to identical bodily arousals. After injecting epinephrine into volunteer subjects, who were not told of the arousing effects of the substance, confederates played out various emotionally charged scenarios in front of the volunteers. The subjects reported experiencing emotions in line with these scenarios which varied dramatically from positive to negative. Whether or not we fully endorse the Schacter and Singer account of emotion it is reasonable to interpret their results as strongly supporting a cognitive component to emotional experience: the subjects felt the emotion appropriate for their presumed situation<sup>8</sup>.

Another illustration of the significance of the cognitive component is the way emotions can be completely altered or even eliminated simply by receipt of information. A mother's agonizing worry can be erased by a single phone call. The bodily arousal cannot so quickly be altered but it can be, so to speak, reinterpreted: she is now bursting with elated relief. Such cases are almost real life examples of the Schacter–Singer effect.

At the same time, feelings are also essential to emotional experience. It is perfectly possible and in fact not uncommon to *know* that one is in a situation in which a certain emotion is appropriate but not to feel anything<sup>9</sup>. This does not count as experiencing the emotion. But even so, I would not want to *reduce* the feeling of emotion to mere bodily arousal. The evaluative component itself is the core of emotional consciousness and is the primary aspect of *feeling*, and to which the bodily arousal is normally a reaction.

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<sup>8</sup> See also Dutton and Aron (1974). These researchers found that after an exciting, anxiety inducing experience (crossing the Capilano suspension bridge in Vancouver, which I can personally attest is indeed quite disturbing) people were more inclined to regard themselves as sexually aroused when faced with an attractive interviewer than were unaroused control subjects.

<sup>9</sup> This notion of appropriateness is normative, and not merely a causal notion. And the fact that emotions can so much as *be* appropriate or inappropriate relative to the situations in which they occur (or do not occur) is highly interesting and strongly differentiates them from states of perceptual consciousness (a thorough analysis of this can be found in DeSousa 1987, especially ch. 5). It is neither *appropriate* nor *inappropriate* to see a tiger when a tiger is in front of one and hallucinations are not instances of normative inappropriateness. The possibility of appropriateness for emotions stems from their cognitive components but also, I think, the recursiveness of the evaluative component. One can evaluate one's evaluations, and find *them* negatively valued. This will be discussed more below.



The RTC is well designed to explicate emotions at a basic level. Emotional consciousness formally involves three representational components. There is a representation of the state of the body which is qualitatively or phenomenally conscious. There is also a representation of some relevant portion of the environment which is, normally at least, also conscious. We might term these the ‘internal’ and ‘external’ components of emotional consciousness. Both components involve sensory, and hence phenomenal consciousness, but more important from the point of view of explaining the nature of emotion they also involve an ‘evaluative’ component which is a further element of consciousness and one which is essential to emotional experience. This aspect will be explored in detail below.

I say ‘formally’ above since the relevant portion of the environment might well be the body itself. One can be afraid of a twinge in one’s chest no less than a bear in front of one. This simple model of emotion discerns a threefold structure in emotional experience: some perceptual act, with an attendant and in fact inseparable evaluation, and a bodily reaction to that evaluated perception. These are all elements of consciousness. It is vital to stress that the evaluative component is not to be thought of as a *judgement*, for one can judge that something is desirable without feeling any desire, and one can feel desire while judging that the object is not desirable. Of course, normally it is this element of basic evaluation which underlies and even *prima facie* justifies our judgements about the desirability of something, but the two are nonetheless quite distinct.

Notice, however, that so far there appears to be no need for any sort of introspective awareness of emotion in the explication of emotional consciousness. All the representational components of emotional experience are directed not at mental states themselves but rather at worldly targets (counting the subject’s body as a part of the world). This is as it should be and is typical of conscious experience in general. One can consciously see, hear or feel something in the absence of any introspective awareness that one is seeing, hearing or feeling (or even in the absence of the *ability* to introspect at all). This is in fact our usual state of consciousness and presumably the only way in which most animals have conscious experience. There is nothing special about emotional consciousness that requires introspection or even introspective faculties. There is a big difference in consciousness between merely seeing a bear and being afraid of a bear than one sees, but it is not a difference to be explicated in terms of introspection, but rather in terms of the additional representational content – the evaluative component – that makes for

emotional consciousness. Nonetheless, important complications have to be addressed. As I've already noted, it is not uncommon to have an emotional reaction to one's own mental states. For a classic example see Plato's *Republic* (Book 4), where Leontius feels disgust at his own interest in horrific scenes of human mutilation. Such sophisticated emotional response does indeed require introspective faculties and will be discussed in more detail below. Such complexity arises because of the recursive nature of the evaluative component along with introspective abilities and is central to human emotional consciousness. In fact, I daresay that assessment of our own emotional states is the most common form of introspection which humans undertake. But emotional introspection is peculiar because of the threefold structure of emotional consciousness as outlined above. To make this point clear we need to investigate the RTC account of introspection.

### **III. Introspection under the RTC.**

One of the prime virtues of the RTC is the provision of a plausible and clear account of the nature of introspection. Dretske (1995, ch. 2) provides a good initial outline of the theory (other versions can be found in Tye (1995) and Carruthers (2000, though Carruthers, being a HOT theorist, presents it rather differently). For the sake of economy, I'll focus on Dretske's version.

Certain critical features of introspection impose constraints on any theory of it. First, it is a kind of knowledge and thus involves conceptualization. Second, introspection is 'transparent'. That is, there is no distinctive phenomenology to introspection. When I become introspectively aware that I am seeing red, for example, there is no qualitative element of consciousness beyond the redness that I am seeing. Third, in addition to involving conceptualization, introspection possesses an immensely *complex* conceptual structure. Our introspective awareness can be finely articulated and involves a myriad of mental states drawn from a large number of very finely differentiated categories (contrast *petulance* with *irritability*). Although it may well be that some of our mental states, at certain times, are not introspectible, it does not seem that there is any *kind* of mental state which cannot be introspected. Finally, our introspective abilities are an extension of pre-existing abilities to predict behaviors caused by mental states. Since there is little or no need to *predict* one's own behavior, simply because one's own behavior is generated by one's own intentions or plans<sup>10</sup>, these abilities would have been aimed, in the first instance, at the

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<sup>10</sup> As one ascends the scale of cognitive complexity, however, it is possible to find some room between knowing what one intends and actually predicting what one will do. Humans can sometimes predict that they will not do

behavior of other human beings and animals. Such predictive abilities could exist prior to any explicit conceptualization of the mental (see Sterelny 2000). Our theory of mind is presumably an outgrowth and conceptual codification of such abilities. Even with a conceptualization of the mind in place there is still little point in self prediction (for under this more advanced condition we can have genuine knowledge of what we are going to do via knowing our intentions) but there would be great pressure to deploy these concepts in the explanation and justification of our own actions to our fellows. From that point of view, introspection would be of great value. Thus introspection had to ‘map onto’ our growing mentalistically based predictive and explanatory abilities in a consistent way. It would have been more than merely unfortunate, but rather a kind of incoherence, if our introspective judgments systematically differed from our fellows’ mentalistic interpretations of us. All these constraints can be met by theories of introspection such as Dretske’s.

Dretske’s idea is that introspection is a form of what he calls ‘displaced perception’ which is simply learning about one thing by perceiving something else. An example Dretske uses is learning that the postman has arrived by perception of the dog’s barking. To get such knowledge one must hear the dog and one must also know what the dog’s barking signifies. Introspective knowledge of our own perceptual states similarly requires that we perceive but also that we know, so to speak, what perceiving is. Knowledge is conceptual and so requires an appropriate field of concepts for its formulation. Distinctively *introspective* knowledge requires the field of concepts that together form our notion of the mind. I don’t think it does any harm to label this body of concepts, with their associated grounds for application, folk psychology (lately many have labeled it our (prescientific) ‘theory of mind’). I know that I am perceiving red, when I am perceiving red, because I can apply the concept of *perceiving red* to this instance of my perceptual experience. I don’t need to *perceive* my perceiving to make this application any more than I need to perceive my perceiving of a barking to dog to apply the concept of ‘barking dog’ to that object. Of course, I do need to be perceiving red to make the introspective application of the concept ‘perceiving red’. In fact, I have to be consciously perceiving, for if I was not conscious of the color I would have no ground for asserting my introspective knowledge claim. A rough definition of introspection would then be: self-knowledge of one’s mental state formed on the

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what they intend, though an obvious threat of paradox looms. Simpler systems do not predict their own actions, they just perform them in accordance with “action-plans” of more or less complexity with greater or lesser temporal horizons.

basis of one's current state of consciousness engaging one's distinctively mentalistic conceptual machinery.

One difficulty with Dretske's account is that the displaced perception model threatens to make introspective knowledge a form of inferential knowledge. I don't think this can be right in general, although it is certainly possible to acquire knowledge of one's own mental states via inference in some circumstances. In the first place it is simply phenomenologically implausible that introspective knowledge is based upon inference. Compare looking at the night sky trying to figure out which of the little lights are planets and which are stars. You remember that Aristotle said that stars twinkle and planets do not, so you look for a non-twinkly light in the sky and *infer* that it is a planet. There is no such story for how you know that you are *seeing* a non-twinkly light rather than a twinkly one in the first place. I suppose that one can always appeal to unconscious inference here, but that leads only to more difficulty.

For what would be the the input information for the putative inference? If it was something like a belief that, or simply the information that 'I am visually aware of a tiger in front of me' we would have implicitly appealed to introspective knowledge, for we are then claiming that I already know about, or have information about, my visual awareness of the tiger. The account offered would thus be circular. And anything less won't do for a reasonable inference. The mere belief that, or information that, a tiger is before me does not entail that I'm having any visual experiences at all.

But the solution is neither difficult nor strange. It is obvious that not all applications of concepts can proceed via inference (conscious or unconscious), on pain of a vicious infinite regress. When I believe that something is red because I am conscious of its color, there is nothing from which I infer this – all I have is the redness of the thing before me and that *triggers* the application of the concept red. The exact same conscious experience also licenses the application of the concept of *seeing red*, or *visually experiencing red*<sup>11</sup>. Part of learning folk psychology is learning how to non-inferentially apply mentalistic concepts to oneself.

The key to understanding this position on introspection is always to bear in mind that according to the RTC when we are conscious we are *not* thereby aware of some representational

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<sup>11</sup> A different way of making what I think is the same point can be found in Carruthers's discussion of what he calls the 'dual content' of cognitive representations (see Carruthers 2000, ch. 9). These representations carry both the content which describes the object of experience but also the content that the object *seems* or *appears* a certain way. The second layer of content is possible only because the cognitive system possesses the set of concepts that constitute folk psychology or the theory of mind.

state; we are aware of what that state represents. Seeing a tiger involves a representation of a tiger but it does not involve seeing (or otherwise experiencing) that representation. To adapt a remark of Dretske's (1995, pp. 100–101), mental representations are the things we are conscious with, not the things we are conscious of. Although it is venerable, the idea that we are really aware of our mental states instead of being aware of what they represent is as confused as the idea that we can only talk about words because we have to use words whenever we talk. 'Talking about X' involves the use of words but it does not require that we talk about those words in order to talk about X. Just so, seeing a tiger demands the use of representations (of tigers) but it does not require that we see (or be otherwise aware of) those representations. The fact that perception can be illusory or hallucinatory is of no more significance than the fact that we can utter falsehoods. Obviously, there is no reason at all to think that the sentence 'tigers live on the moon' is really about its own words just because it is false.

#### **IV. Emotional Introspection.**

Although this is only a bare sketch of the theory of introspection<sup>12</sup>, it is enough to address the question of how we introspect our emotional states. The first requirement would be a set of mentalistic concepts of the emotions which we could apply to ourselves to generate introspective knowledge. Obviously folk psychology provides a rich fund of such concepts. But there must also be the 'material' to which these concepts are applied, that is, the appropriate states of consciousness which license, or trigger, the application of emotional state concepts.

The somewhat primitive analysis of the emotions provided above suggested there were three components to any emotional experience: some perception, a bodily disturbance and an 'evaluation'. It is the third component that differentiates emotional from mere perceptual consciousness and which permits a distinctive *emotional* introspection. Taking it into account forces an interesting extension of the RTC.

Let us consider desire as one of the most basic emotional states. We said above that there was a difference between *judging* that something was desirable and actually experiencing desire for that thing. This difference is a feature of consciousness, and has to be available to consciousness if we are going to be able to introspect desire according to the Dretskean model. Thus desirability

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<sup>12</sup> For more see Dretske 1995, ch. 2 and for an attempt to extend the account to intentional states in general see Seager 2000.

must be analogous to perceptibility<sup>13</sup>. The hypothesis is, then, that conscious experience reveals not only the host of perceptible features that are the prime focus of the debate about qualia and phenomenal consciousness, but also a ‘field of value’. That is, according to this hypothesis the world is not presented to us as a value–neutral set of objects and properties to which we affix value through an intellectual act. Rather, the values of things are an integral part of our conscious experience of the world right from the start.

Is this phenomenologically plausible? I can only speak for myself, but it does seem clear to me that I experience the value of things as well as their perceptible appearance. In fact, a world in which this aspect of experience was lacking would be almost incomprehensible, alien and extremely troubling (or it would be if the hypothesis itself did not outlaw that sort of consciousness of the situation). The evaluative field is so pervasive in consciousness that perhaps it is easy to overlook. But consider this everyday situation. You are trying to finish a little job around the house and need some kind of special tool. Lacking a ready made tool you look around for something to improvise. Suddenly everything you perceive seems ‘charged’ with its potential, or lack of potential, to serve your purpose. You hardly notice at all things that are obviously useless while possibilities almost seem to be jumping up and down to attract your attention. The pervasiveness of evaluation also points to the proper treatment of moods and other diffuse states of consciousness. They are, so to speak, reflections of the base or average value of the evaluative field: turned up you get an emotional state like elation, depression corresponds to the general lowering of the base evaluative value. This account explains why moods don’t seem to be representational in nature while nonetheless fitting them smoothly into the representational theory of consciousness.

Furthermore, we have seen reasons above for expecting that the representation of value would in fact be one of the earliest and most vital functions of consciousness. For by ‘value’ here I do not mean anything nearly as sophisticated or abstract as *ethical* or *moral* value. The value at issue is relative to the conscious subject, and is rooted in the elementary functions of life itself. This value is concerned with what to eat, what to fight, what to run away from and what to mate with. Thus, I do not mean to imply that consciousness of value is distinctively human or is an aspect of ‘high level’ consciousness. It is at least as basic and ubiquitous as perceptual consciousness.

The simplest emotions are pain and pleasure and it is there we should be able to observe the

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<sup>13</sup> A highly interesting paper of Denis Stampe (1987) advances a kind of precursor of this view, though presented with an entirely different motivation than the explication of either consciousness or introspection.

simplest cases of evaluative consciousness. And I think we can observe exactly that. Pain and pleasure have affective components which are essential to the identities of these mental states but which are separable from the particular sensory qualities associated with any particular instance of pain or pleasure. Thus a pain in one's ankle carries a great deal of sensory information about one's ankle but also essentially involves the 'intrinsic irksomeness' (to borrow a nice phrase of Carruthers's) or aversiveness which makes it an instance of pain. It is well known that certain analgesics, notably morphine and other opiates, seem primarily to affect the evaluative component, leaving the sensory features relatively unchanged. There is no doubt that this effect of morphine involves an alteration in one's state of consciousness. According to the RTC, this has to involve a change in what one's cognitive system is representing. It is the evaluative component that has altered, and thus the evaluative component is a feature of the way things are being represented<sup>14</sup>.

Pain and pleasure are primitive emotions in themselves (perhaps to be thought of as limiting cases), but they are of course intimately connected to the more complex emotion of desire insofar as we normally desire that pain cease and pleasure persist. Perhaps the most basic difference between primitive emotions and the more complex forms is the addition of *reasons*. Desires are states for which one can and ought to give, or at least be able to give, reasons. The desire that pain stop is rational insofar as pain gives a reason for wanting it to cease, and of course pain does provide such a reason. There does not seem to be any more basic reason which could explain why we want pains to stop (the desire that one's body not be damaged is derivative, since it is still reasonable to want pains that are not associated with any physical damage – for example phantom limb pains – to stop). That desires and other emotions can be given rational justifications reflects the way emotion involves both phenomenal as well as intentional consciousness. It also permits the creation of much more complex emotional states insofar as these can themselves be emotional reactions to possible reasons. Thus one can desire X for reason R, but suffer shame that R could give you a reason to want X. On the other side of this coin, one may have a good reason for feeling an emotion but nonetheless lack any feeling. Without the evaluative component there will be no emotion, no matter what we might *think* about the situation, but thoughts themselves can engage the evaluative machinery.

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<sup>14</sup> See Foss (2000, pp. 144 ff.) for an interesting account of the disconnection between sensory and affective components of pain. The account is valuable both philosophically and as a harrowing first hand account of the phenomenon.

This is not the place to examine all the complexities of emotional consciousness. What is of interest here from the point of view of the RTC is the evident fact that intentional states such as thoughts and judgments can themselves engage the evaluative mechanisms which underlie emotional consciousness. Every state of consciousness, no matter how ‘purely intellectual’ it might seem, contains the evaluative component (though in many cases the represented value might be virtually neutral, rather than the decisively positive or negative values characteristic of vividly experienced emotion). This is necessary if we are to *care about* our thoughts. It is in any case phenomenologically obvious that abstract thoughts can produce strong emotional reactions (as those engaged in intellectual pursuits know better than anyone).

This view of emotional consciousness can also be applied to decidedly abnormal emotional states. For example, some of the extremely bizarre symptoms of Capgras Syndrome might be understood from the point of view of a breakdown in parts of a subject’s value representation system. A victim of CS ‘comes to regard close acquaintances – usually his parents, children, spouse or siblings – as impostors’ (Ramachandran 1998, p. 161). Beginning with Capgras himself (1923), it has often been postulated that the syndrome results from some kind of disconnection of the facial perceptual recognition systems and the emotional or affective response system<sup>15</sup>. Ramachandran’s hypothesis is that the emotional reactions which one normally feels when encountering loved ones, or close friends, do not occur in someone suffering CS because of some breakdown in the connections between the face recognition region of the brain and the amygdala (p. 162). It is the lack of emotional response which drives the subject to invent an hypothesis to explain why someone who looks exactly like, say, his mother, should not *feel* like his mother, namely, that the person before him is an impostor (a twin or, nowadays, perhaps a robot double)<sup>16</sup>.

No matter the neurological details, the RTC account of emotional consciousness can describe CS quite well. This description makes CS a deficit of consciousness. The evaluative component of one’s representation of a loved one is lacking, or suppressed so that, in a very broad sense, the person no longer feels like anyone you can recognise, although they bear a visual resemblance to

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<sup>15</sup> We now know that there are brain systems dedicated to facial recognition which lends weight to these hypotheses and accounts for the fact that victims of CS can recognize their loved ones *as* their loved ones when face recognition is not involved, such as when conversing on a telephone (it remains an interesting question why visual information should trump auditory information when the subject is confronted with his loved ones).

<sup>16</sup> CS sufferers are often very dangerous. In one case at least, a man killed his father in order to find the robot machinery animating the impostor (see Blount 1986).



a loved one which the subject is perfectly capable of appreciating. It is nonetheless striking that patients are not capable of overcoming the lack of emotional response. Perhaps that reflects other mental disturbances (victims of CS very frequently have other problems, often severe) but it also reflects, I think, the fundamental nature of the evaluative representations. They are at the center of our consciousness and everything else must be made to ‘fit’ with them (recall the split–brain experiment described above – it was apparently not an option for the patient to simply stop feeling fear because of an ‘intellectual’ knowledge that there was nothing nearby worthy of fearing; the patient in fact preferred to guess that for no good reason she was afraid of Dr. Gazzaniga). Perceptual consciousness is in the service of evaluative consciousness and the mind prefers to regard even crystal clear and seemingly obviously veridical perception as erroneous before questioning evaluative awareness. This helps to account for the outrageous and baroque stories which the victims of CS will spin to support the impostor hypothesis.

Now, just as in the case of the introspection of states of perceptual consciousness, where there is the application of mentalistic concepts of perceptual seeming, in emotional introspection there is the application of mentalistic concepts of emotional mental states to oneself. How do I know that I desire the chocolate? According to the theory proposed here, this introspective knowledge depends first upon there being a representation of the positive value (to me, now) of the chocolate, a representation which is bound up with the perceptual representation of the chocolate as well as a concurrent representation of a bodily reaction which are both part of my current field of consciousness. So, in essence, I can *sense* the positive value or goodness of the chocolate just as I can sense its color and shape. Then, I can (usually non–inferentially) apply a ‘theorem’ of our common theory of mind to the effect that the proper object of desire is the valued. Thus sensed value licenses the application of the concept of desire.

There is a close analogy here between the introspection of belief–states and the introspection of desire which it may be worth expanding upon. How do I know that I believe that, say, ‘no giraffes live on the moon’. It is obviously ridiculous to imagine that I ‘look within’ my mind and discover a belief, labelled as ‘no giraffes live on the moon’ and thereby become able to report that I have that belief. What I must do to discover what I believe is to discover what seems true to me. Once I figure out that giraffes do not live on the moon I know that I believe it. The application of the concept of belief depends only upon discerning some truth<sup>17</sup>. Similarly, the application of the

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<sup>17</sup> For more on the introspection of belief states, see Seager 2000.

concept of desire depends only upon discerning value<sup>18</sup>.

The analogy between the introspection of desire and belief also recalls a feature of the introspection of perceptual states already remarked upon, namely its transparency. Introspection of perceptual states has no distinctive phenomenology of its own, and no more does the introspection of belief or desire. This allows for a fully unified account of introspection, and perhaps offers some unifying insights as well. For example, in the realm of belief we have what is known as Moore's Paradox, which is the incoherence of my claiming: 'P is true, but I don't believe it' despite the fact that such a claim is not, in general, logically inconsistent. I'm sure there are a great many things which are true but which I unfortunately do not believe. Why can't I report that P is one of them? The problem is that such a claim would be contrary to a basic precept of our theory of mind: *people believe what they take to be true*. The analogy with the transparency of the introspection of perceptual states suggests an analogue 'paradox' of perceptual introspection, something like: '*look, there's a tiger, but I am not having any visual experiences*'. I grant this is not as striking as the Moore paradox, but I believe it is formally the same.

The desire version of this paradox takes us into new territory and the conclusion of this paper. The desire version would be something like: 'this is wonderful, but I have no desire for it'. This strikes one as considerably less paradoxical than either of the earlier versions. The reason is that desires can directly conflict, whereas neither truths nor perceptual appearances can be internally contradictory<sup>19</sup>. Thus it is possible, and indeed common, for one desire to undercut another. So I think that we do still have our paradox, but find it somewhat difficult to see because we tend to confuse 'desire all things considered' with plain desire.

Desires can conflict both because we value a variety of things, and there are many situations where it is simply impossible, or at least very difficult for us to attain all we value but also because we can consciously prioritize our values and impose upon ourselves a kind of meta-valuing of values. Even animals can have desires which conflict for the first reason. A behavior of a hungry wolf facing an aggressive adult moose provides a clear picture of conflicted

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<sup>18</sup> Although it is probably unnecessary, I want to stress again that the kind of value at issue here is not 'ethical' or 'moral' value, but rather the biologically based values of usefulness to the subject here and now. It is of course an interesting question whether or not ethical valuation could be explained in terms of this simpler and more basic form of valuing, but not one I wish to pursue here.

<sup>19</sup> What about the famous impossible figures? We can only see the parts of such figures and are simply unable to combine them into a single percept (that is how we know they are impossible figures).

desires. I'm sure every reader of this paper knows firsthand something of what the wolf feels.

But I doubt that animals prioritize what they value *as* values. For that requires introspective awareness of emotions as well as the ability to emotionally respond to states of introspective awareness (i.e. caring about what are emotions are, or, in general, what are mental states are). Suppose someone resolves to quit smoking because they are afraid of getting lung cancer in twenty years. This involves abstract future-directed thought but it also involves feeling something about a possible future and thus knowing that you care about it.

Such sophisticated, multi-layered and abstract emotional response is characteristic of human consciousness; it requires and presupposes introspective knowledge. While I hope that the theory advanced here has plausibly outlined how at least basic introspective knowledge of our emotional states is achieved, readers might be forgiven if they harbor doubts about the theory successfully extending to such elaborate feats of emotional introspection as full human consciousness allows. I don't think that such doubts undermine the theory. Instead they reveal something interesting about emotional introspection which accounts for its potential complexity and another well known feature of emotional introspection that has not yet been explored. This feature is the fact that emotional introspection is nowhere near as reliable as the introspection of states of perceptual consciousness.

According to the account given above, emotional states have a threefold internal structure which includes, in the paradigm case, a bodily reaction to a perception where both are subject to evaluation. These are all elements of consciousness and are potentially introspectible as such. It does not follow directly that it will always be easy to introspect the emotional state which these elements constitute. Consider once again the split-brain patient discussed above. She was well able to introspect an emotional state of fearfulness, but in the absence of any perceptual consciousness of the disturbing film sequence that had been shown solely to her brain's right hemisphere she misattributed the fear. In the Singer-Schacter type experiments a endogenous bodily arousal is created in a context where certain emotions would be 'expected'. Introspection fails here as well, as the subjects classify a 'pure' bodily arousal with an emotional arousal (because of being placed intentionally in an emotionally charged situation) and mischaracterize the strength and possibly even the identity of their emotions on that basis. It seems reasonable to suppose that the complex internal structure of emotions is what makes such introspective errors possible.

As we go on to ponder whether we feel much more complex emotions that may involve our feelings about other emotional states, other mental states such as memories and thoughts as well as current perceptions, and even the mental states of others, there is still more room for error. And it is these sorts of more complex emotional states that are the chief focus of our introspective efforts, if only because the introspection of more basic emotional states is so easy – not much harder, if at all harder, than the introspection of our current perceptual states. The task of introspecting these complex emotional states involves a genuine intellectual effort of integration in order to put together properly the components of our actual emotions (there is room here even for the view that the very idea of our ‘actual emotions’ loses its legitimacy as the complexity of the attributed emotions increases).

What is worse, our introspective task suffers from emotional biases of its own. This follows simply from the fact that we have emotional responses to emotional states and thoughts about emotional states. This is a source of much self–deception. An amusing example (which I borrow from Elster 1999) can be found in Jane Austen’s novel *Emma* which, though fictional, is entirely plausible. Persistently unable to acknowledge her love for Mr. Knightly, Emma finds herself somewhat attracted to, and commonly thought to be the natural object of affection of, Frank Churchill (who is secretly in love with someone else). Emma, whose most characteristic emotional state throughout most of the novel is one of boredom, contrives to imagine that she is in love:

this sensation of listlessness, weariness, stupidity, this disinclination to sit down and employ myself, this feeling of everything’s being dull and insipid about the house! – I must be in love ... (Austen 1816/1966, p. 266)

This example falls under our account of emotional consciousness and emotional introspection quite well. Emma is conscious of various bodily sensations, and especially the (weakly negative) evaluative assessment of her surroundings (characteristic of boredom or low level depression). She is also well aware of Frank Churchill and the general expectation that he and she ought to be in love. Furthermore, Frank Churchill is undeniably a possible matrimonial match for whom Emma definitely has some feelings of genuine affection. But to know that she is love with him, Emma has to correctly assess the linkages amongst the components of her emotional state. This is not to say that it is always difficult to know that one is in love, and Emma soon achieves a more accurate self assessment. But it is significant that the vagueness or unclarity in the *concept* love

infects attempts at introspection about love. In general, mental states which are expressed by ‘difficult’ or complex mental state concepts are harder to introspect than simple or straightforward ones. This is something which our account of emotional introspection predicts.

Emma’s task presents in itself some intellectual challenge and demands full competence in the intricacies of folk psychology. Such a case is not at all like looking at or smelling some delicious food, with the attendant positive evaluational component featuring as an essential part of this perceptual experience, and thereby coming to know that one desires to eat that food. But of equal significance in a case such as Emma’s is the way that introspective assessment is itself an object of evaluation. To Emma, the idea that she is merely bored would be unpleasant to contemplate, and might lead to further infelicitous assessments of her general situation and character, whereas it is rather enjoyable to fancy that she is in love.

It is an interesting feature of emotional experience that what is a very ‘low level’ element of consciousness is thoroughly integrated with high level cognition and indeed with every aspect of consciousness. Thus Emma’s thoughts about being in love can themselves evoke an emotional response which affects introspection. This integration is completely in line with the idea emphasized throughout this paper that higher level mental functions evolved to serve the evaluative functions.<sup>20</sup> Some interesting recent work on the pleasures of gambling reveals how quite abstract cognition involved in understanding the nature of a game as well as the fundamentally abstract nature of the payoff itself (we could hardly have evolved to value *money*) is quite literally connected to basic evaluative systems in the brain (Breiter *et. al.* 2001)<sup>21</sup>.

Such results are not unexpected, but in the present context they help to explain why introspection of our emotional states is, in general, not as straightforward as the introspection of perceptual states. The intrinsic complexity of emotional states and the possibility of emotional response to introspective thoughts about those states leaves plenty of room for errors of self attribution. At the same time, basic emotional states remain as directly introspectible as

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<sup>20</sup> Rather curiously, this both supports and undercuts Hume’s famous dictum that “Reason is, and ought only to be, the slave of the passions, and can never pretend to any other office than to serve and obey them” (Treatise, p. 415). It supports it insofar as rationality developed to serve, and to improve the functioning of, the evaluative system, but it undercuts it because the link between the evaluative systems and cognition which this development presupposes means that we can emotionally respond to rational thought itself, so that rationality can become as much a value for us as pleasure, or anything else.

<sup>21</sup> This brain imaging study showed that “[h]emodynamic responses in the sublenticular extended amygdala (SLEA) and orbital gyrus tracked the expected values of the prospects, and responses to the highest value set of outcomes increased monotonically with monetary value in the nucleus accumbens, SLEA, and hypothalamus” (Breiter *et. al.* 2001, p. 619).

perceptual states. This provides a unified treatment of the introspection of emotional states under the RTC which integrates with the general theory of introspection, allows for the privileged access and immediacy of emotional introspection without denying the possibility of introspective error, respects the phenomenology of emotional consciousness, and, not least, adds general support for the theoretical framework of the representational theory of consciousness.

## **V. Summary**

Hopefully, it is now clear that both emotional consciousness and emotional introspection can be integrated with the general framework of the representational theory of consciousness in a plausible and theoretically satisfying way. The integration of emotional awareness does require an interesting addition to the representational theory, namely the inclusion of representations of *evaluative* properties. It was argued that in fact such representations constitute the fundamental features of consciousness since it is they that directly serve the most basic tasks of survival and reproduction. Sensory awareness thus arose in the service of more accurate determination of the evaluative properties of things. Once the system of evaluative and sensory representation is in place, the theory asserts that it is the development of a conceptual representation of mental states that permits the introspective awareness of our mental states

William Seager  
University of Toronto at Scarborough

## References

- Austen, J. (1816/1966). *Emma*, Harmondsworth: Penguin.
- Block, Ned (1990). 'Inverted Earth', in J. Tomberlin (ed.) *Philosophical Perspectives*, vol. 4, pp. 53–79.
- Blount, G. (1986) 'Dangerousness of Patients with Capgras Syndrome', *Nebraska Medical Journal*, 71, p. 207.
- Breiter, Hans C, Itzhak Aharon, Daniel Kahneman, Anders Dale, and Peter Shizgal (2001). 'Functional Imaging of Neural Responses to Expectancy and Experience of Monetary Gains and Losses', in *Neuron*, Vol. 30, pp. 619–39.
- Capgras, J. (1923). 'L'illusion des sosies dans un délire systématisé chronique', *Bulletin de la Société Clinique de Médecine Mentale*, 11, pp. 6–16.
- Carruthers, P. (2000). *Phenomenal Consciousness*, Cambridge: Cambridge University Press.
- Damasio, A. (1994). *Descartes's Error: Emotion, Reason, and the Human Brain*. New York: G. P. Putnam.
- de Sousa, R. (1987). *The Rationality of Emotion*, Cambridge, MA: MIT Press.
- Dretske, F. (1995). *Naturalizing the Mind*, Cambridge, MA: MIT Press.
- Dutton, D. and A. Aron (1974). 'Some Evidence for Heightened Sexual Attraction Under Conditions of High Anxiety', *Journal of Personality and Social Psychology*, 30, pp. 510–17.
- Elstser, J. (1999). *Alchemies of the Mind*, Cambridge: Cambridge University Press.
- Foss, J. (2000). *Science and the Riddle of Consciousness: A Solution*, Boston: Kluwer.
- Gazzaniga, M.S. (1985). *The Social Brain*. New York: Basic Books.
- Gennaro, R. (1996). *Consciousness and Self-consciousness: A Defense of the Higher-Order Thought Theory of Consciousness*, Philadelphia: Benjamins.
- Harman, Gilbert (1990). 'The Intrinsic Quality of Experience' in J. Tomberlin (ed.) *Philosophical Perspectives*, vol. 4, pp. 31–52.
- Hume, D. (1739/1973). *A Treatise of Human Nature*, L. Selby-Bigge (ed.), Oxford: Oxford University Press.
- Hurlburt, R. (1990). *Sampling Normal and Schizophrenic Inner Experience*, New York: Plenum Press.

- James, W. (1884). 'What is an Emotion?', *Mind*, 9, pp. 188–205.
- Lane, R, Lynn Nadel and Geoffrey Ahern (eds.) (1999). *The Cognitive Neuroscience of Emotion*, Oxford: Oxford University Press.
- Loar, B. (1990). 'Phenomenal States', in J. Tomberlin (ed.) *Philosophical Perspectives*, vol. 4, pp. 81–108.
- Lecours, André and Yves Joanette (1980). 'Linguistic and Other Psychological Aspects of Paroxysmal Aphasia', *Brain and Language*, 10, pp. 1–23.
- LeDoux, J. (1996). *The Emotional Brain: The Mysterious Underpinnings of Emotional Life*, New York: Simon and Schuster.
- Lycan, W. (1996). *Consciousness and Experience*, Cambridge, MA: MIT Press.
- Nagel, T. (1974). 'What is it Like to be a Bat?', *Philosophical Review*, 83, pp. 435–50.
- Nisbett, R. and T. Wilson (1977). 'Telling More than We Can Know: Verbal Reports on Mental Processes', in *Psychological Review*, 84, pp. 231–59.
- Panksepp, Jack (1998). *Affective Neuroscience : The Foundations of Human and Animal Emotions*, Oxford: Oxford University Press.
- Ramachandran, V. (1998). *Phantoms in the Brain*, New York: Morrow.
- Rosenthal, David (1986). 'Two Concepts of Consciousness,' *Philosophical Studies*, 49, pp. 329–59.
- Rosenthal, David (1993a). 'State Consciousness and Transitive Consciousness', *Consciousness and Cognition*, 2, pp. 355–63.
- Rosenthal, David (1993b). 'Thinking That One Thinks', in M. Davies and G. Humphreys (eds.) *Consciousness*, Oxford: Blackwell.
- Schacter, S. & J. Singer (1962). 'Cognitive, Social, and Physiological Determinants of Emotion', *Psychological Review*, 69, pp. 379–99.
- Seager, W. (1999). *Theories of Consciousness*, New York: Routledge.
- Seager, W. (2000). 'Introspection and the Elementary Acts of Mind', *Dialogue*, 39, pp. 53–76.
- Stampe, D. (1987). 'The Authority of Desire', *Philosophical Review*, 96, 3, pp. 335–81.
- Sterelny, K. (2000). 'Primate Worlds', in C. Heyes and L. Huber (eds.) *The Evolution of*



*Cognition*, Cambridge, MA, MIT Press, pp. 143–62.

Tye, M. (1995). *Ten Problems of Consciousness*, Cambridge, MA: MIT Press.