

# Imperative content and the painfulness of pain

Manolo Martínez

Published online: 6 August 2010  
© Springer Science+Business Media B.V. 2010

**Abstract** Representationalist theories of phenomenal consciousness have problems in accounting for pain, for at least two reasons. First of all, the negative affective phenomenology of pain (its painfulness) does not seem to be representational at all. Secondly, pain experiences are not transparent to introspection in the way perceptions are. This is reflected, e.g. in the fact that we do not acknowledge pain hallucinations. In this paper, I defend that representationalism has the potential to overcome these objections. Defenders of representationalism have tried to analyse every kind of phenomenal character in terms of *indicative* contents. But there is another possibility: Affective phenomenology, in fact, depends on *imperative* representational content. This provides a satisfactory solution to the aforementioned difficulties.

**Keywords** Pain · Imperative content · Representationalism

## Introduction

Representationalism, under some guise or other, is one of the most popular approaches to a naturalistic treatment of phenomenal consciousness (to name but a few recent discussions, cf. Carruthers 2000; Dretske 2003; Van Gulick 2004; Rosenthal 2005; Tye 2000). The main tenet of this family of theories is that the phenomenal character of a mental state somehow depends on its representational content (cf. Tye 2009b). Individual theories differ on just what

---

M. Martínez (✉)  
Logos—Logic, Language and Cognition Research Group,  
Departament de Lògica, Història i Filosofia de la Ciència,  
Universitat de Barcelona, C/ Montalegre, 6, 08001 Barcelona, Spain  
e-mail: manolomartinez@ub.edu

it is that makes a mental state phenomenally conscious,<sup>1</sup> but they all agree that, once a state is conscious, its phenomenal character—what exactly it is like to undergo it—is constitutively linked—by a relation that ranges from identity to supervenience, depending on the theory—to its representational content.

Representationalism is an elegant way of combining realism about qualia with a commitment to materialism. According to this view, when we, e.g. feel the sand under our naked feet, the main thing going on is that we are tokening a mental state which *represents* a real property of the world—call it *sandness*. Everything involved in having this experience is unobjectionable from the materialist's point of view: the mental state—which is probably a brain state with some biological function (more on this later)—and the real-world property it represents: sandness—maybe a very complicated geometrical–rheological property of surfaces. According to what Tye (2009b) calls *strong representationalism*, for example, what we feel just *is* what gets represented in the experience: real-world sandness.

Representationalism also has a good explanation of the phenomenon exploited by the arguments from illusion and hallucination (for background, see Huemer 2009; Kiteley 1972). According to representationalism, if we seem to feel sand under our naked feet but actually are just hallucinating while lying on a bed, we are tokening a mental state that *misrepresents* sandness. Nothing sandy (certainly no immaterial sandy *quale* that is not identical with, or supervenient upon, naturalistically acceptable entities) is involved. Of course, this account must be complemented with a materialistic account of content that allows for misrepresentation, but there are a number of promising proposals available. Many representationalists advocate *reductive representationalism*; that is, they believe that a reduction (or a supervenience claim) of phenomenal character to physical properties is possible via, first, an identification between phenomenal character and representational properties (or a supervenience claim) and, second, the reduction/supervenience of representational properties upon physical properties.

So that we have a concrete proposal before us, I will concentrate on *strong poised, abstract, non-conceptual intentional content (PANIC) representationalism*. According to this proposal (which used to be advocated by Tye, until his Tye (2009a), and which, within the bounds of the present discussion, is still a good approximation to the views of this thinker), the phenomenal character of a state is its poised, abstract, non-conceptual intentional content. That is, if a contentful state is *poised* (or available for the formation of beliefs and desires, verbal reports etc.), abstract (i.e. purely quantificational, and not involving

<sup>1</sup>The main divide in this respect lies between *higher-order* theories (be it higher-order *thought* theories such as Rosenthal's (op. cit.) or higher-order *perception* theories such as the one defended in Lycan (1995)) for which what makes a mental state phenomenally conscious is that *another* state is properly related to it and *first-order* theories (such as Tye's or Dretske's, op. cit.) which propose other constraints on contentful states. For a summary of higher-order theories, see Carruthers (2009). Tye (2009b) is an overview of first-order representationalism.

concrete entities) and non-conceptual, it is phenomenally conscious and its phenomenal character is identical with its representational content.

A final *caveat*: Although I think the main point of this paper holds for representationalism in general, I will restrict the discussion to the problem that pain poses for strong PANIC representationalism (or simply *PANIC*, henceforth). That is, although I expect that the recipe I advocate may be used to fix the problem of the painfulness of pain (and some other related problems along the way) for the reader's preferred flavour of representationalism, I only wish to commit myself to its being a solution for PANIC.

The structure of the paper is as follows: In the next section, I will review some important criticisms to PANIC based on its problems in accommodating pain. I will, then, go on to discuss Tye's solution to said problems, which will be found wanting. In "[Pain and imperative content](#)" section, I will present my own positive, *imperative content* proposal. In "[A brief defence of imperative contents](#)" section, I briefly defend the existence of imperative contents and, in "[The PANIC answer to the objections to PANIC](#)" section, show how they deal with the objections to PANIC based on painful experiences. "[Emotions, pleasures and affective phenomenology in general](#)" section explores how the imperative content proposal may be extended to other affectively charged phenomenally conscious states—such as emotions and pleasant sensations. Finally, "[Objections](#)" section discusses some objections. The conclusion of my paper will be conditional: If one finds representationalism in general and PANIC in particular, attractive as a solution for the naturalisation of phenomenology, then the imperative content strategy to be shortly presented is the way of extending this solution to pains.

## Representationalism about pain

The *opacity* cluster of objections

According to PANIC, the phenomenal character of the characteristic awfulness of pain—what I will call its *painfulness*—has to be identical with the (poised, abstract, non-conceptual) representational content of painful experiences. What could this representational content be? Tye (1995, p. 113) suggests that pain represents "certain sorts of disturbances in the body, paradigmatically, bodily damage". Pains are, then, "sensory representations of bodily damage or disorder" (*ibid.*).<sup>2</sup>

The first objection comes at this point: It is fair to say that, when we introspect a visual experience, we are first and foremost interested in the features of the external world which the experience represents and only secondarily in the experience itself. If at all, a widely held idea being that

<sup>2</sup>From Tye (2006a) on, he defends a slightly different intentional object for pains. See Footnote 13. To simplify the exposition, I stick with "bodily damage" in this section.

perceptual experience is *transparent*: When we try to attend to the properties of our perceptual experiences, all we find ourselves attending to is the properties of the objects (green trees, blue oceans, red patches) represented in such experiences (cf. Harman 1990, p. 39). This seems to be mirrored in the fact that perception verbs are success verbs: *I see a red patch* entails *There is a red patch*, and if we find out that, actually, we are hallucinating, we withdraw the claim that we *see* anything. We merely seem to see it.

Things are otherwise with pains. It is unclear that painful experiences are transparent: In the case of pain, our main object of interest seems to be the experience itself. A very clear exemplification of this fact is that “we do not acknowledge pain hallucinations, cases where it seems that I have a pain but in fact there is no pain” (Block 2006). Seeming to be in pain *is* to be in pain. That is, regardless of how conclusively we may establish that no bodily disturbance happens in our back, we do not withdraw the claim that our back hurts if we have a feeling as of back pain. There may be nothing wrong there, but it hurts all the same.<sup>3</sup>

This asymmetry between perceptions and pains presents a problem for representationalism. The contention that, e.g. the redness experienced *is* the representation of worldly redness goes hand in hand with the recognition of the fact that perceptions may be *wrong*—in that they may represent the world as it is not. How come, then, that we do not recognise such a possibility in the case of pain? As Aydede puts it,

Whatever else the transparency of genuine perceptual experiences involves it must take us to the extramental world in a *committal* way (...) But what we access in pain is the experience itself and what it represents without a commitment to its veridicality. (Aydede 2006)

Let us call the family of issues that surround the failure of transparency associated with pain the *opacity cluster of objections*. A representationalist account of pain should explain the asymmetry between pain and perceptual experiences in this particular respect. Tye has suggested (most clearly in his 2006a) that these facts can be accommodated if we suppose that we have two concepts of pain:

The term ‘pain’, in one usage, applies to the experience; in another, it applies to the quality represented. (*Ibid.*)

We have, then, two concepts: pain<sub>e</sub> (which refers to the experience) and pain<sub>q</sub> (which refers to the quality represented). If this is so, the asymmetry can be explained by pointing out that, in the case of pain but not in the case of

---

<sup>3</sup>This is not to say that our self-knowledge regarding our pains is infallible, of course. For example, we may very well mistake the touch of an unremoved laundry tag for the painful bite of a stinging insect on our neck. It is also well-known that expectations and other psychological factors may increase or decrease, even to the point of elimination, the feeling of pain (cf. Koyama et al. 2005). The point is simply that, when we *do* feel pain, we are unmoved by news according to which the bodily disturbance which supposedly is in the content of our pain experience really does not exist.

perceptual experiences, our main interest lies in pain<sub>e</sub>. And, of course, if we have an experience as of pain<sub>q</sub>, then we are in pain<sub>e</sub>. Which is what we are interested in.

The question remains, though, why *this other* asymmetry. Why is it that, in the case of pain but not in the case of, e.g. visual experiences, our main interest lies in the experience itself and not in the quality represented? A commonsense answer is that pain feels *awful*, regardless of its success at representing the external world. This is why we want, first and foremost, to avoid this awfulness, independently of whatever it may be represent.<sup>4</sup> Unfortunately, when we try to capture this feature in a representationalist framework, some other issues crop up.

### The painfulness of pain

Pain is unpleasant and it is a challenge for representationalists to explain how this aspect of its phenomenology is to be accounted for in terms of a representational content. Early proponents of perception-theories of pain defended *cognitivism*: The thesis that this aspect of pain experience can be reduced to cognitive responses to pain, such as, e.g. the formation of the desire for the pain to cease. Armstrong's theory is a clear example of this approach:

[P]ain, itches and tickles normally involve a bodily perception of a certain sort of disturbance in the body, and, evoked by the perception, a more or less peremptory desire for the perception to cease. (Armstrong 1968, p. 318)

But theorists have since come to realise that mere desire evoking is not enough for unpleasantness: It seems perfectly possible that someone had a hard-wired mechanism that connected affectively neutral (or positive) representations of bodily disturbances with certain appropriate desires. The

---

<sup>4</sup>What about this other explanation:

Pain experiences track bodily damage with high reliability; this may explain the existence of a practice of applying the concept of pain whenever the experience is present -even in the absence of bodily damage. This practice, given the high reliability of pain, is sufficiently safe, so its emergence is all too natural; but this is compatible with pain being *about* bodily damages and, therefore, with there being experiences of pain without the thing experienced. That is, this is compatible with there being pain hallucinations, even if we never judge that we are suffering them.

This would be, in effect, an error theory about pain hallucinations: Whenever we suffer one of these, we judge, wrongly, that we do not. Regardless of the plausibility of this kind of error theories—it would be understandable for a sufferer of chronic phantom limb pain to feel outraged at the suggestion that she is not really in pain at all—this suggestion faces the following problem: Visual experiences are as reliable as pain experiences, if not more, in tracking the facts that their content is about. If so, the suggestion above can be applied equally well to seeing: It would have been equally natural to end up in a situation in which visual hallucinations are not recognised. It remains to be explained, then, why we *do* recognise them. Reliability cannot explain the asymmetry between seeing and being in pain because both kinds of experiences are equally reliable.

situation could be, for instance, that when I *saw* my foot to be injured, by some deviant causal chain, I immediately formed the desire for that perception to cease. But this would not make the seeing *unpleasant*, at least not in the phenomenological sense we are trying to capture.

Tye is well aware of the problems with Armstrong's cognitive approach to the affective dimension of pain, and the alternative he favours is very interesting: Given that, according to PANIC, every aspect of the phenomenal character is part of the representational content of the experience, unpleasantness itself must be identical to some content:

Pain is normally very unpleasant. People in pain try to get rid of it or to diminish it. Why? The answer surely is because pain *feels* unpleasant or bad, because it is *experienced* as such. (...)

To experience tissue damage as bad is to undergo an experience which represents that damage as bad. Accordingly, in my view, the affective dimension of pain is as much a part of the representational content of pain as the sensory dimension is. (Tye 2006a, p. 107)

So, apart from tissue damage, painful experiences also represent the property of *badness* (or *aptness to harm*). Some theorists (e.g. Aydede 2006) have levelled what we may call the *not representational at all* objection: Perceptions are very naturally seen as having representational content, but the painfulness of pain is not like that. It does not seem *at all* as if it had representational content, and Tye's solution strikes us as somewhat ad hoc.

There is a final minor worry raised also by Aydede (op. cit., see also Aydede 2001): Tye defends a causal–informational theory of content, according to which “[e]xperiences represent various features by causally correlating with, or tracking, those features under optimal conditions” (Tye 2000, p. 64). Aydede points out that it is unlikely that such properties as *being bad* or *being apt to harm* can be given a causal–informational treatment along the lines envisaged by Tye: More needs to be said of how the aptness to harm enters in causal relations with our pain detectors, even under optimal conditions. But, as Tye (2006b, p. 167) rightly points out, the problem cannot be with the objectivity of such properties as *being apt to harm*. Surely, a number of things are objectively harmful for us, and there is no problem in principle to their entering in causal relations with some of our sensory equipment.<sup>5</sup>

I believe that the best reason to reject Tye's account of affective phenomenology is simply that there is a better theory—the imperative content

---

<sup>5</sup>I should point out that the account to be presented in this paper answers Aydede's complaint. So, if I am wrong and Aydede has identified here a substantial difficulty with Tye's account, this would count as an additional reason to embrace my solution. For a sketch of a causal–informational account of imperative content that may help assuage naturalistic worries such as Aydede's, see “[A naturalistic account of imperative content](#)” section.

proposal that I will introduce in “[Pain and imperative content](#)” section. But there are independent reasons to doubt that Tye’s solution is a plausible way out for PANIC. I discuss these reasons in the section below.

### PANIC and naturalistic accounts of representation

I have quoted above Tye on the nature of representation:

Experiences represent various features by causally correlating with, or tracking, those features under optimal conditions. (Tye 2000, p. 64)

This quote shows allegiance to a powerful line of thought in contemporary philosophy (beginning with Stampe’s (1977) seminal paper; see also Dretske (1981)) according to which having a certain content is a causal property of representations. Of course, the sheer identification of causation and representation will not do. For example, this naive causal account of content,

(CAC) A mental state  $M$  has the content  $p$  iff  $M$  causally correlates with, or tracks, the fact that  $p$ .

is unable to account for *misrepresentation*: According to CAC, whatever causes  $M$  is its content. So, if I have some mental state  $M$  that fires whenever I see a cat, but it also fires whenever I see a cattish lump, I will not be able to say that  $M$ ’s going *on* means CAT AROUND and it just misrepresents cattish lumps as cats; according to CAC, the content of  $M$  is CAT OR CATTISH LUMP AROUND—see (Fodor 1990). Something must be added to CAC, and one possibility is Stampe’s (and Tye’s) appeal to normal or optimal conditions, the idea being roughly that, under optimal conditions of light, distance and the like, I will not mistake cattish lumps for cats. Hence, the optimal conditions causal account of content:

(OC-CAC) A mental state  $M$  has the content  $p$  iff  $M$  causally correlates with, or tracks, the fact that  $p$  under optimal conditions.

which is more or less the account that Tye advocates. The problem is that OC-CAC is not yet a *naturalistic* account of content: The notion of *optimal conditions* is clearly normative, and naturalistic theories should be expressed using only descriptive vocabulary. In the context of a project of naturalising phenomenal character, we cannot leave OC-CAC as it is.

Fortunately, there are several proposals about how to unpack the normativity necessary to account for misrepresentation in naturalistic terms. Dretske (op. cit.) proposed to distinguish a phase of concept learning from the phase of normal concept use. This proposal has several drawbacks that I will not review (again, see Fodor (1990); also, see Sterelny (1990) for a more optimistic opinion). In any event, Dretske himself, since his (1986), following Millikan (e.g. 1984; 2004), has come to be convinced that the right way to add normativity to a causal theory of content is by appealing to the *biological*

*function* of the representing structure. A (very simplified) way to incorporate this so-called *teleosemantic* insight, then, could be roughly like this:

(TSAC) A mental state *M* has the content *p* if *M* has the biological function of detecting the fact that *p*.

The notion of biological function, in turn, is to be understood as being analysable in terms of biological explanations, of the sort that evolutionary biologists normally appeal to (cf. Wright 1973/1994):

(Ex»F) *M* has the biological function to *F* iff the fact that *M*'s ancestors used to *F* explains that they were selected and, therefore, that *M* is around.

The idea, very roughly, is that *ancestors* of the mental state *M* started reacting in some way to *F* (maybe because of some random mutation); this reactivity to *F* was useful and endowed the possessor of *M* with some evolutionary advantage. This evolutionary advantage helps explain that it was the possessor of *M*, and not some other competitors, that got to reproduce and pass their genetic material. This explaining underlies our biological function attributions. Finally, thus, optimal conditions talk may be unpacked as follows:

(OC-CAC-Unpacked) A mental state *M* has the content *p* iff *M* causally correlates with, or tracks, the fact that *p* under [those conditions under which *M*'s causally correlating with the fact that *p* has historically furthered the goals of the possessors of *M* in a way that explains that *M* is actually present].

The problem now is that it is very likely that the mechanisms of detection of tissue damage have furthered the goal of their possessors precisely because they track tissue damage *that is apt to harm*. That is, it is very plausible that detecting tissue damage has helped creatures further their goals by allowing them to avoid or limit potentially harmful situations. Optimal conditions for the detection of tissue damage are thus, most likely, conditions in which tissue damage is apt to harm. This, in turn, entails that contents involving tissue damage, under Tye's account of representation, are also contents involving tissue damage that is apt to harm. This is a problem because, at least according to a wide consensus in pain studies,

Pain can be thought of as having sensory (discriminative) and affective (the 'unpleasantness') dimensions. (Hunt and Mantyh 2001, p. 84)

The sensory or discriminative dimension may be thought of as a somatic perception of noxious stimuli; its affective dimension, which I am concerning

myself with in this paper, is its characteristic unpleasantness. Furthermore, it has been shown that

the affective component of pain can be reduced by lower doses of morphine than those which are necessary to reduce the sensory component of pain. (Van der Kam et al. 2008, p. 373)

Hypnotic modulation of the two dimensions has also been reported by Rainville et al. (1999). These papers and many others referenced in them provide a solid empirical case in favour of distinguishing sensory and affective dimensions in pain and to the effect that both dimensions can be modulated somewhat independently. Precisely, this independence is not a possibility under OC-CAC-Unpacked. Thus, the very likely existence of the former militates against the truth of the latter.

### **Pain and imperative content**

Analysing the affective phenomenology of pain in terms of the representation of aptness to harm is, then, a bad solution, even if it is, maybe, the best solution if phenomenal character is to be analysed in terms of a representation *that something or other is the case*. And not just Tye, but most other theorists working on representationalism has simply assumed that all representations must be representations that something or other is the case.<sup>6</sup> But this is simply not true: Not all representations are information-gathering devices. And not all representations have truth conditions. Take, for example, the imperative sentence

(IS) Open the door!

IS is clearly contentful and equally clearly lacks truth conditions. It does have satisfaction conditions:

(SC) The door is open.

but, even if IS is satisfied if and only if SC is true, the point remains that IS is neither true nor false and cannot be.

These are, to be sure, the simplest platitudes about the way in which imperative sentences work. But it is precisely these platitudes that representationalists working on pain have been consistently overlooking. The proposal I wish to make is that if PANIC is the right account about the phenomenal character of experiences, then the affective phenomenology of pain is the same

---

<sup>6</sup>Two recent exceptions are Klein (2007) and Hall (2008). I discuss their views below. I would like to point out that my views on pain were developed independently from and before reading the work of these theorists.

thing as poised, abstract, non-conceptual, *imperative*, intentional content. The painfulness of pain is PANIIC.<sup>7</sup>

In particular, the representational content of the painfulness of pain is imperative content with the satisfaction conditions:

(SC—Pain) I don't have this bodily disturbance.<sup>8</sup>

That is, something along the lines of

(IS—Pain) Don't have this bodily disturbance!

Indeed, a context in which a command such as IS—Pain is sensibly uttered must be a very bizarre one. But orders and imperative sentences in general are not the only bearers of imperative content. We may think of imperative content as individuated by its function to bring about the state of affairs represented by its satisfaction conditions, and this is a function shared by, e.g. desires and intentions—content bearers which much more naturally may have a content such as IS—Pain.

According to this understanding of imperative contents, such contents may have a very large array of satisfaction conditions. For example, it may be the case that a certain imperative content of mine has the satisfaction conditions that my wife's basketball team wins a match. It may help to bring about such a state of affairs by, e.g. causing me to buy new basketballs for training, or causing me to cheer for them as if my life depended on it. Many actions may be rendered appropriate by such a content, although none in particular is made obligatory. This is just the venerable doctrine in the philosophy of mind according to which no concrete course of action is sanctioned as *the* right one by any one of my desires. The same point carries over to other states with imperative content, such as pains.

On the other hand, in most cases, just as the non-conceptual content of perception makes rational several judgements and beliefs—say, seeing a tree makes a judgement that a tree is there rational—the content of painful experiences will make rational a *desire* for tissue damage not to be there where it is anymore.

Paraphrasing Ernest Sosa, if experiences have only one foot on the space of reasons, painful experiences have their foot on a desire. This explains why cognitivism has seemed a viable option to perception-theorists about pain such as Armstrong: The evoking of a desire is, indeed, a likely and fully rational

---

<sup>7</sup>And if, e.g. your preferred brand of representationalism is a Rosenthal-style HOT theory, then you should say that the phenomenal character of the painfulness of pain is constituted by the right kind of *imperative* representation being targeted by the right kind of higher-order thought. And so, *mutatis mutandis*, with other representationalist theories.

<sup>8</sup>Remember this is non-conceptual content. For example, no capacity of entertaining *de se* thoughts is necessary for the having of a representation with this imperative content.

outcome of the undergoing of a painful experience. But it is not what having a painful experience consists in.

### Klein's command model

Klein (2007; following ideas later published in Hall (2008)) has proposed an account of pain which follows closely—if I am right, *too* closely—the template provided by imperative sentences:

Imperative sentences demand an action; similarly so with imperative sensations. Richard Hall has argued that the content of an itch is the command 'Scratch here!', the content of hunger is 'Eat Something!', and so on. These sensations obey a logic similar to that of imperative sentences. (Klein 2007, p. 519)

The content of many imperative sentences is special among imperative contents in general in that it does seem to sanction a certain, concrete course of action. "Eat Something!" sanctions eating and nothing else; "Open the door!" sanctions opening the door and nothing else. On the contrary, as we have seen, the desired content in "I desire my wife's basketball team to win" does not sanction any particular action.

One may want to agree with Hall that, indeed, "[t]he connection between itches and scratching is very intimate." (Hall 2008, p. 525)—although see below; this makes it plausible that the content of an itch is (a non-conceptual version of) "Scratch here!". But no such intimate relation seems to exist between pains and particular actions. No particular action is sanctioned by the pain of a broken ankle, or a toothache. Klein, reasoning under the assumption that the intimate connection between content and action is the mark of imperative contents, proposes that the content of pain is a negative imperative:

There is a small obstacle to treating pains as imperatives. Other imperative sensations are unified by a single action type that would satisfy them (eating, scratching, and so on). Most pains do not seem to demand any particular positive course of action... The content of any pain is a negative imperative. The imperative force of pains is thus to proscribe rather than prescribe. What unifies the above pains is the imperative that I stop doing what I am doing; their content is a proscription against action. (Klein 2007, p. 520)

Thus, "the content of [the pain of a broken ankle is] a negative imperative against moving in a way that would put weight on the ankle", "[t]he pain of a burn commands against any action that would cause the injured area to contact the world" etc. (all from Klein's op. cit.)

The problem with this suggestion is that the connection between pains and actions is not even of the tenuous kind provided by the negative imperatives

of Klein's proposal. Illustrations of this are provided by what Klein himself regards as problem cases for his account:

... headaches, menstrual cramps and disturbances of the deep viscera. It is difficult to see which actions these pains weigh against. (Klein 2007, p. 530)

The answer, I think, is clear: none whatsoever. And, if I am right, this was just to be expected. The content of a headache is one with satisfaction conditions that we could render more or less as: *that this bodily disturbance is no more*. No particular course of action is prescribed, or proscribed by such a content, but, on the other hand, in many everyday situations, such a content would make appropriate many different actions—e.g. going to see the doctor—as indeed headaches do. This feature of headaches is straightforwardly captured by my account, and it is unclear how could it be captured, if at all, by Klein's.

In fact, I think that Klein's proposal runs into problems even in the cases he regards as most successfully explained by his account. Take again broken ankle pain. According to Klein, its content is something along the lines of

(Broken Ankle—Klein) Don't put weight on that broken ankle!

It is (I am inclined to say conceptually) impossible that such a content makes appropriate a course of action which involves letting a traumatologist put weight on our broken ankle while manipulating it. But broken ankle pain *does* make such a course of action appropriate. Again, my account has no problems explaining this: Broken ankle pain has a content with the satisfaction conditions that the bodily disturbance in question be no more. No particular course of action is prescribed or proscribed by such a content, but many are made appropriate by it. The analogous point can be urged against Hall's account of itches: a course of action that involves rubbing the affected skin with olive oil and *refraining* from scratching it—I am told this is the right thing to do—could not be made rational by the content "Scratch here!", but it is made rational by itches.

To summarise, the problems with Klein's account, carried over from Hall's, stem from an insufficient appreciation of the possibilities of imperative contents. Many imperative sentences sanction or proscribe concrete actions—although consider "My wife's basketball team has to win the match. See to it!"—but many other imperative contents do not. Desires do not and pains do not—they simply compel the subject in pain to see that certain satisfaction conditions get to obtain.

I will now quickly defend the existence of imperative contents; first ("[Content and force](#)" section), by reviewing evidence in their favour coming from the philosophy of language and then ("[A naturalistic account of imperative content](#)" section) by sketching a general strategy for naturalising them. After that, in "[The PANIIC answer to the objections to PANIC](#)" section, I will

go on to explain how the imperative content proposal deals with the objections to representationalism raised in “[Representationalism about pain](#)” section.

## A brief defence of imperative contents

### Content and force

In this paper, I am assuming the existence of at least two quite different varieties of content, which I have labelled *indicative* and *imperative content*. The former is the content of, e.g. assertions, beliefs and (if representationalists about phenomenal consciousness are right) perceptions; the latter is the content of imperative sentences, desires and (if I am right) pains.

But the traditional position about content is, instead, what Pendlebury (1986) calls the *force treatment*:

Supporters of this position hold, for example, that the three utterances

1. Sam will play it again,
2. Will Sam play it again?,
3. Play it again, Sam!

do not differ in sense, but only in force. The sense in each case, they tell us, is exhausted by the fact that the utterance (so to speak) expresses the proposition that Sam will play it again. (Pendlebury 1986, p. 361)

There are good arguments in favour of recognising the existence of abstract entities that are constitutively endowed with mood—entities such as what Pendlebury (1986) calls *questions* and *orders*; Hanks (2007) calls *assertive*, *interrogative* and *imperative propositions*; and I have been calling *indicative* and *imperative contents*. These are supposed to be entities “which appropriate sentences express, and which can be thought and entertained mentally” (Pendlebury 1986, p. 368).

One such argument is provided by the fact that the sentences

- (1) John knows that Smith is tall.
- (2) John knows whether Smith is tall.

differ in truth conditions: If, for example, Jones knows that Smith is not tall, 2 is true and 1 false. Under the plausible assumptions that “knows” introduces a relation between a subject and a known entity, that the difference in truth conditions between 1 and 2 stems from a difference in meaning and the usual considerations about the compositionality of meaning, we are forced to conclude that the meaning of the entities referred to by “that Smith is tall” and “whether Smith is tall” must be different (Hanks 2007, p. 144; see also Pendlebury 1986). This is so even if, plausibly, the forceless propositions expressed by the embedded clauses is the same—that Smith is tall. The

“known entities” in question must be, then, an indicative content in 1 and an interrogative content in 2.

More to the point of our current discussion,

- (3) John told Smith that Smith will go to the store.
- (4) John told Smith to go to the store.

also differ in truth conditions. If John has simply made a prediction about Smith’s future behaviour, 3 comes out true and 4 false. If, instead, he is simply ordering Smith to go to the store, 4 comes out true and 3 false. Reasoning analogous to the one above makes plausible the idea that what John says is an indicative content in 3 and an imperative content in 4.

Considerations around the problem of the unity of proposition also militate in favour of imperative contents—again, see (Hanks 2007). As is well-known, Russell disparaged of finding the ingredient that binds together, e.g. the property of doghood and Descartes in the false proposition that Descartes is a dog—Descartes being, in fact, a cat. There is no fact consisting of Descartes being a dog, and the alternative of considering that false propositions subsist but do not exist, although briefly endorsed, was soon taken by Russell to be intolerable. His considered solution, around 1912,<sup>9</sup> was to analyse

- (5) Othello believes that Desdemona loves Cassio

not as

- (6)  $B(O, p)$

where  $p$  stands for the proposition that Desdemona loves Cassio but, rather, as

- (7)  $B(O, d, L, c)$

where it is the *act of believing* that keeps together Othello, Desdemona, Cassio and the relation of loving. Thus, e.g.

The relation ‘loving’, as it occurs in the act of believing, is one of the objects—it is a brick in the structure, not the cement. The cement is the relation ‘believing’. Russell (1912/2001, p. 23).

That is, it is the *assertive* (and we would add: or imperative, or...) mood under which the content is entertained that effects the binding of the propositional components. One tentative conclusion is that without mood there is no real, unified proposition. The defender of forceless content as the only contentful entities that we judge or belief has, then, to offer an alternative explanation of the unity of proposition.

---

<sup>9</sup>Russell’s so-called *multiple-relation theory of judgement* gets more complicated in later writings. See Pincock (2008) for an informative discussion.

These considerations provide some evidence for the existence of imperative contents. The fact that such contents can be fruitfully used in solving a totally unrelated problem in the philosophy of mind—the problem presented by the painfulness of pain—may be taken as providing some further evidence in their favour.

#### A naturalistic account of imperative content

It is, then, likely that there are imperative representations. On the other hand, most efforts in the naturalisation of content have been directed to *indicative* (information-gathering, belief-like) representations which, I have argued, are ill-suited to accounting for affective phenomenology. The only worked out naturalistic account of imperative content is Millikan's, as presented in chapter 6 of her Millikan (1984). According to Millikan, the content of representations is fixed by their consumers—e.g. a mechanism that forms perceptual beliefs is a likely consumer for perceptual experiences, and the person whom we order to open the door is the consumer of the imperative sentence we utter. In the case of *imperative intentional icons*,<sup>10</sup> their content is given by *the state of affairs that their consumers have the function to produce*. For example, the imperative sentence “Open the door” has the satisfaction condition that the door is open, which is the state of affairs the consumers of the sentence are supposed to produce. See (Millikan 1984, p. 97).

Millikan's detailed account is extremely sophisticated, and this is not the place to review it. We can instead, for illustration and in keeping with Tye's preferred streamlined causal-informational account of content, provide a counterpart to OC-CAC for imperative content:<sup>11</sup>

(OC-CAC-Imperative) A mental state *M* has the imperative content *F* iff *M* helps to make it the case that *F* under optimal conditions.

that is, simply reversing the causal relation (the direction of fit) between world and representation under optimal conditions we pass from indicative to

<sup>10</sup>She has also called them *goal icons* (and indicative icons *fact icons*) in her manuscript *Some Different Ways to Think*. Millikan has never discussed the phenomenal character of experiences, although she does maintain that pains are what she calls *pushmi-pullyu* representations (extremely simple representations that have both indicative and imperative contents, cf. Millikan 1995).

The proposal defended in this paper would not exist had it not been for Millikan's material on imperative content.

<sup>11</sup>I would like to note that OC-CAC-Imperative provides a straightforward solution to the problem of mental causation. Some mental states (which are identical to physical states with certain causal-historical properties) have the (imperative) content they have precisely in virtue of what they tend to cause.

imperative contents. Imperative contents are not more problematic from the naturalistic perspective than indicative contents are.<sup>12</sup>

### The PANIC answer to the objections to PANIC

The opacity cluster of objections

First of all, it should be noted that there is no presumption that imperative contents should “take us to the external world in a committal way”, as Aydede puts it. Imperative contents are not truth-evaluable. *Stop having a tissue damage there!* is neither true nor false. And, furthermore, in optimal conditions, it is *not* the case that the satisfaction conditions of imperative contents hold. Imperative contents are, rather, supposed to help bring about that their satisfaction conditions obtain. So having a painful experience (regardless of how transparent or opaque such experiences are) cannot and does not make us incur in a commitment as regards how the world is.

Once we notice this, there is no problem with accepting that painful experiences are fully transparent: All we take in when undergoing a painful experience are the qualities represented in the experience. It is just that these qualities (namely that there is no bodily disturbance there anymore) are not represented as holding. Nor are they represented as being desirable or undesirable that they hold. There is no indicative mood sentence that captures the way in which they are represented because they are represented in precisely the way that the fact that the door is open is represented in *Open the door!* They are represented, so to say, *sub specie obligationis*.

Imperative content provides a straightforward explanation of the asymmetry between perceptions and pains in that, in the latter but not the former, we are more interested in the experience than in its object. It is just that there is *no* intentional object of pain experiences, at least not in the sense of an *indicative* object, something that is there or not, independently of the experience that represents it. The only thing we can be committal about is the experience itself, hence the fact that our concept PAIN has the experience, not the object,

---

<sup>12</sup>In fact, I think, a correct set of sufficient conditions for the presence of (imperative or indicative) content has to solve the indeterminacy problem—it has to warrant a univocal content attribution, see, e.g. Fodor (1990), Enç (2002), Ryder (2006) and this calls for heavy refinement in OC-CAC-Imperative. Millikan’s account is also subject to a similar objection. I am confident that these issues can be solved, although a presentation of my reasons for this confidence would take us too far afield.

as its reference.<sup>13</sup> Now, it may be pointed out that, even if this explains the asymmetry, it does not explain why we *care* about unpleasant experiences. Well, caring is, at least partly, a matter of forming the right desires. And the imperative content of pain makes rational the formation of precisely these desires: It has the caring built in.

And why can we have hallucinatory perceptions but no hallucinatory pain? The explanation is that the whole content of perceptions can be veridical or non-veridical, but not the whole content of pain can: The imperative part (the unpleasantness) is neither veridical nor non-veridical, just as desires are neither true nor false. That part cannot be *wrong*, and so, it makes no sense to talk of hallucinating the negative phenomenology of pain, hallucinations being a special kind of non-veridical experiences. The unpleasant side of phantom-limb pain is as fine from the veridicality point of view as the unpleasant side of limb pain is.

### The *not representational at all* objection

The proponent of the imperative content approach can candidly agree that, indeed, pain does not seem to have indicative intentional content at all. But it is simply not true that it does not seem to have *imperative* content. On the contrary, it seems to me that the sensation of being compelled by an experience to get away from something, or to make it stop, is very much what the painfulness of pain is like, and it is intuitively appealing to suppose that such compelling is constituted by the having of an experience with imperative content.

## Emotions, pleasures and affective phenomenology in general

Some theorists have defended that the painfulness of pain is “an experience of ‘pure negative value’” (Seager 2002, p. 671). But it does not seem that pains have a special claim at being *the* purely negative experiences. First, different pains are phenomenologically different, not just because they have a different sensory component but because their way of being painful is different. For example, a throbbing toothache and the sharp pain in a cut finger are painful in entirely different ways. Besides, other non-painful sensations have at least as good a claim at being experiences of pure negative value as pains do, e.g. those

<sup>13</sup>Although I have been simplifying his view, in fact Tye (2006a) defends that pain represents the complex object: [tissue damage only insofar as it is represented by a pain experience]. Tye postulates this slightly awkward intentional object in an attempt to avoid the charge that PANIC must accept that pain (the object, not the experience) can happen without a pain experience, which, admittedly, would be an implausible consequence.

A better answer to this objection is, simply, to point out that painful experiences have no indicative intentional objects. That is, *painful<sub>i</sub>* is an empty concept.

associated with depression, intense sorrow and the like.<sup>14</sup> Unfortunately, there is a whole range of unpleasant experiences, each awful in its own special way.

The imperative content proposal nicely captures this feature of affective phenomenology: Imperative contents can be, if maybe not as fine-grained as indicative contents, nonetheless very much so. There is one imperative content for each set of satisfaction conditions a mental state may have the function to bring about.

So, just as the variety of phenomenal characters that perceptions present is mirrored in the variety of indicative representational contents that perceptual experiences may have, equally the variety of unpleasant phenomenal characters that affective experiences present is mirrored in the variety of imperative representational contents that these other experiences may have. This is, I think, a further reason to prefer my account to others, such as Seager's or Tye's, that equate unpleasant phenomenology with representations of properties *as bad*.

The possibility of imperative contents that do not represent bodily disturbance may open the door for a representationalist treatment of other affective phenomenology. For example, emotions are paradigmatically accompanied by affective experiences, and a representationalist treatment of these affective experiences—such as, maybe, (Goldie 2009)—is subject to the same kinds of objections that were levelled against the representationalist treatment of pains, e.g. it may be argued that there are no false fears or hallucinatory fears—someone who fears the wrath of Zeus *does* fear, even if Zeus does not exist—and, e.g. being sad does not seem representational at all. It may be worth looking into imperative contents for a solution to these problems.

I will not try to provide here contents for unpleasant feelings (such as nausea) or emotions (such as despair) and will leave this matter for further work. I

---

<sup>14</sup>Seager may be alternatively interpreted as saying that “pure negative value” provides the *common* phenomenological core that every painful experience and no other shares. Indeed, it seems as if painful experiences share a common phenomenology, but the suggestion that it may be cashed out in terms of pure negative value does not work, for the reasons advanced in the main text.

In any event, I am willing to concede that it does seem as if pains have a common phenomenological core. There is, I think, a way in which this can be accommodated by the imperative content account. An experience is painful if and only if it has a PANIIC which is a substitution of the following schema:

Common Core: Stop that<sub>x</sub> bodily disturbance!

where *that<sub>x</sub> bodily disturbance* is a variable that stands for any kind of bodily disturbance, such as, say, *the left middle finger's being bruised* or *the stomach's being ulcerated*. Common Core provides the common element in all painful experiences.

Groups of pains that seem to share a common phenomenological character (say, thermal, mechanical or chemical pains) will have contents that are substitutions of a schema just like Common Core, except for the domain of the variable, which will be more restricted. For example,

Common Core—Thermal: Stop that<sub>y</sub> bodily disturbance!

where *that<sub>y</sub> bodily disturbance* stands for a bodily disturbance caused by an abrupt change in temperature.

will simply make the (admittedly programmatic) suggestion that emotions may be characterised by imperative contents that involve entities different from our body: Fear may turn out to have a content involving objects or circumstances whose possible consequences we consider as dangerous for us (e.g. *May that dog stay away from me!*), and feelings of, say, Sartrean desperation may involve imperative contents that quantify over a great many things (*Stop everything!* or some such). As I say, these are just crude, illustrative suggestions, and should not be taken very seriously.<sup>15</sup>

Orgasms, chocolate tastings and other pleasant experiences share similar problems with pains: lack of transparency, lack of apparent representational content etc. The imperative content proposal deals with them in exactly the same way that it deals with pains (and, maybe, emotions): Orgasms have the PANIIC *Have more of that!*, where the *that* in question is, probably, mechanical stimulation of the genital zone of the kind that, on occasion, leads to fecundation.<sup>16</sup> Similarly with chocolate tasting: *Have more chocolate!*

I will finish by considering some objections to the imperative content proposal.

---

<sup>15</sup>An important problem for this approach is that we may fear bodily disturbances. For example, I may be afraid of a (painful) cancer. If we are not careful, some fear contents may end up coinciding with pain contents, which would be disastrous, at least because no fear is a pain and no pain is a fear.

Let me say something about how to distinguish fear contents which involve bodily disturbances from pain contents—although it will be no more than educated speculation. It looks as if a crucial difference between pains and fears is that the former are directed at stopping or reverting an *occurrent* bodily disturbance, while the latter is directed at the *future consequences* of the bodily disturbance in question. So, the feelings associated with a fear of a cancer I have involve the future development of the cancer which may eventuate, say, in my death or further pains. Maybe, then, the PANIIC of the feelings associated with fear of my cancer is something along the lines of

Cancer—Fear: May my cancer not cause further disturbances!

If the cancer is painful, on the other hand, the PANIIC of such painfulness will be something like

Cancer—Pain: Stop my cancer!

This fear PANIIC does not seem entirely implausible. For example, when I cut my finger I feel pain—I token a state which compels the cut to be no more—but I am not afraid of it—I do not token a state which compels it not to cause further disturbances, maybe because I have a standing belief that such cuts do not cause them. In any event, let me stress that these points are advanced tentatively and speculatively and are not part of the core proposal defended in the paper.

<sup>16</sup>Actually, a teleosemantic theory of content such as Millikan's would allow the content of orgasm to be "Have more fecundation!", even if the orgasms that lead to actual fecundation are, statistically, a minority. It is enough if the conditions under which orgasms were selected—those conditions under which orgasms helped their consumer fulfil its function—where those in which it caused more fecundation (through more sexual activity).

## Objections

More of that pain!

We sometimes form the desire for unpleasant experiences to continue, or recur. It so happens with unpleasant tastes that are strangely craved, S/M sexual practices, harsh dissonances in music that we end up loving.<sup>17</sup> There is nothing irrational, or cognitively abnormal about these desires. But, if so, does it still make sense to say that the unpleasant experiences in these cases have the imperative content for, say, the dissonance or the tissue damage to cease?

It does. The best way to describe these unpleasant-but-craved experiences is, precisely, by first establishing that they are unpleasant: They have the imperative content, and they rationalise the avoiding desires. That is, people who crave an unpleasant (say, sour or extremely spicy) taste are not inverted qualia subjects. They do not taste the hot as I taste the sweet. Rather, they form a second-order state with the imperative content *More of that experience!* where the experience in question has a negative affective phenomenology and, thus, an imperative content of its own. They genuinely find pleasure in having the unpleasant experience.

The hypothesis here is that finding pleasure in, say, masochistic practices or harshly dissonant music presupposes the ability to form second-order PANICs about other experiences. They require, then, a higher degree of cognitive sophistication than the mere having of pains or orgasms require. But, I think, this is as it should be: The former pleasures *do* seem to be comparatively more sophisticated than the latter experiences. Of course, if it were established that creatures incapable of higher-order mental states are, nevertheless, capable of these kind of emotions, the hypothesis advanced in this subsection would have been proven wrong.

This higher-order treatment of several sophisticated sensations invites questions regarding several *recherché* scenarios. For example: what happens if I form a second-order state with the content “No more of this pain” alongside my pain experience? Does it become unbearable? The answer is that forming a second-order state with the content “No more of this pain” does not add painfulness to the original pain.<sup>18</sup> It simply adds a different unpleasant sensation—if it has a phenomenal character of its own, that is. The original pain can be very slight but, nevertheless, I may experience disgust at it. The resulting state is one in which I feel pain and disgust, not a stronger pain. Nothing in my account implies the latter.

One may also worry about how many layers of higher-order sensations one may have. Consider, for example, the masochistic monk that feels bad about

<sup>17</sup>The complementary cases, although we are less familiar with them, also exist: being physically disgusted with our feeling (what we take to be) a lowly pleasure, for instance.

<sup>18</sup>*Modulo* the impact of expectations and the like on our feelings of pain. See Footnote 3.

his enjoyment of pain and entertains a third-order state with content *No more pleasure!* related to the second-order state *More pain!* related to the first-order state *No more of this!* Does not that become absurd somewhere?

Well, emotions such as the masochistic monk's are clearly possible. It does not seem as if third- or higher-order sensations are absurd, although the process certainly becomes psychologically unrealistic after some iterations. By the way, even if there is no clear limit to the degree  $n$  up to which we can entertain  $n$ th-order thoughts, there might be a limit to the degree up to which we can entertain sensations *with phenomenal character*. Just *which* limit is an empirical question.

### Imperative contents rationalising desires

I have contended that the content of pain experiences is something along the lines of *Stop having that bodily disturbance!* and that these contents rationalise the corresponding desires for the disturbance to disappear. It may be thought that such imperative contents are not the right kind of things to form the rational basis for a desire. Something unpleasant does not seem the kind of thing that is able to rationalise anything in the way perceptions can.

Again, there has been much more thought about rational transitions from and to indicative representations than from and to imperative ones, but this does not mean that no such latter transitions are rational; there are, e.g. obviously rational transitions between desires. Although I have no particular theory to offer, I am sympathetic to the idea that some transitions among imperative states are rational because

1. They, reliably, take from a state with an imperative content (such as an experience of pain) with some satisfaction conditions  $p$  to a state (such as a desire) with an imperative content with satisfaction conditions  $q$ , such that [if  $q$  then  $p$  in the context in which the experience and the desire are had].
2. This reliability figures in the relevant way in an explanation of our actual dispositions to make such transitions.<sup>19</sup>

It is plausible that painful experiences and the desires they rationalise stand in one of these relations; if so, painful experiences rationalise desires for the bodily disturbance not to be there.

### Cognitivism strikes back

I have criticised cognitivism—the view that the painfulness of pain is constituted by the experience causing the appropriate avoidance desires. Instead, I have argued that such painfulness is constituted by the imperative content of the painful experience.

<sup>19</sup>I take Peacocke to be gesturing towards a view about rational transitions in general along this lines in several passages of Peacocke (2008; for example, p. 197, on judgements about the pain of others on the basis of their behaviour).

I have also described one general approach to the naturalisation of imperative contents—Millikan’s—which, in a form that is simplified almost beyond recognition, yields the following content-attribution recipe:

(OC-CAC-Imperative) A mental state *M* has the imperative content *F* iff *M* helps to make it the case that *F* under optimal conditions.

Now, one way in which *M* may help to make it the case that *F* is by causing a *desire* that *F*. So, if *M* causes a desire for the tissue damage to cease in optimal conditions, it has an imperative content with the satisfaction conditions that the tissue damage ceases. Is not this, after all, a version of cognitivism?

It is not. First of all, the imperative content and the cognitivist proposals differ in their predictions: Pain experiences that (in abnormal conditions) do not cause avoidance desires are counted as painful by the imperative content proposal and as painless by the cognitivist. Secondly and maybe more important, what *constitutes* the painful phenomenal character is different according to the two theories. Imperative content is to blame in the one case (regardless of how it goes about causing its satisfaction conditions) and the very causing of desires is to blame in the other case.<sup>20</sup>

### Opacity and the sensory phenomenology of pain

I have mainly been discussing the painfulness of pain, but pain has, apparently, another purely sensory dimension—see “[A naturalistic account of imperative content](#)” section. I think it is plausible that the sensory phenomenology depends on indicative content of the kind “There is tissue damage there”. But, then, what about the impossibility to hallucinate pain experiences?

I do not think that our opacity intuitions about pain extend to the purely sensory component. We are reluctant to say that a phantom-limb pain is a hallucination because it is just as painful as the genuine article. This reluctance is explain by identifying the painfulness of pain with imperative content. On the other hand, if we focus on the purely sensory dimension of pain<sup>21</sup>, it is much less obvious that we do not recognise the possibility of hallucination: The sensory phenomenology informs us of some goings-on in our phantom limb. There is no phantom limb, so in some sense we must be hallucinating said goings-on. This is not a strange thing to say.

Most pain experiences are painful, so most pain experiences are opaque in the intended sense. But the sensory dimension of pain is not to blame.

<sup>20</sup> A final, minor point is that the desires that may help fix the imperative content of a pain (desires for a *tissue damage* to cease) are not the desires commonly appealed to by cognitivists (desires for an *experience* to cease).

<sup>21</sup> I am utterly unable to do this myself, but I believe the disassociation reports.

**Acknowledgements** Financial support for this work was provided by the DGI, Spanish Government, research project FFI2009-11347 and Consolider-Ingenio project CSD2009-00056. I would like to thank Manuel García-Carpintero, Blanca Gómez, David Pineda, Michael Tye, two anonymous reviewers, and audiences in Berlin and Buenos Aires for their comments and feedback on earlier drafts.

## References

- Armstrong, D. (1968). *A materialist theory of mind*. London: Routledge.
- Aydede, M. (2001). Naturalism, introspection, and direct realism about pain. *Consciousness and Emotion*, 2, 29–73.
- Aydede, M. (2006). The main difficulty with pain. In M. Aydede (Ed.), *Pain: New essays on its nature and the methodology of its study* (pp. 123–136). Cambridge: MIT, Bradford Books.
- Block, N. (2006). Bodily sensations as an obstacle for representationism. In M. Aydede (Ed.), *Pain: New essays on its nature and the methodology of its study* (pp. 137–142). Cambridge: MIT, Bradford Books.
- Carruthers, P. (2000). *Phenomenal consciousness: A naturalistic theory*. Cambridge: Cambridge University Press.
- Carruthers, P. (2009). Higher-order theories of consciousness. In *Stanford encyclopedia of philosophy (spring 2009 Edn)*. <http://plato.stanford.edu/archives/spr2009/entries/consciousness-higher/>.
- Dretske, F. (1981). *Knowledge and the flow of information*. Cambridge: MIT.
- Dretske, F. (1986). Misrepresentation. In R. Bogdan (Ed), *Belief, form, content and function* (pp. 17–36). Oxford: Oxford University Press.
- Dretske, F. (2003). Experience as representation. *Philosophical Issues*, 13(1), 67–82.
- Enç, B. (2002). Indeterminacy of function attributions. In A. Ariew, R. Cummins & M. Perlman (Eds.), *Functions: New essays in the philosophy of psychology and biology* (pp. 291–313). Oxford: Oxford University Press.
- Fodor, J. (1990). *A theory of content and other essays*. Cambridge: MIT.
- Goldie, P. (2009). Getting feelings into emotional experiences in the right way. *Emotion Review*, 1(3), 232–239.
- Hall, R. J. (2008). If it itches, scratch! *Australasian Journal of Philosophy*, 86(4), 525–35.
- Hanks, P. (2007). The content–force distinction. *Philosophical Studies*, 134, 141–64.
- Harman, G. (1990). The intrinsic quality of experience. *Action theory and philosophy of mind. Philosophical Perspectives*, 4, 31–52.
- Huemer, M. (2009). Sense-data. In *Stanford encyclopedia of philosophy (Spring 2009 Edn)*. <http://plato.stanford.edu/archives/spr2009/entries/sense-data/>.
- Hunt, S. P., & Mantyh, P. W. (2001). The molecular dynamics of pain control. *Nature Reviews Neuroscience*, 2, 83–91.
- Kiteley, M. (1972). The argument from illusion: Objects and objections. *Mind*, 81, 191–207.
- Klein, C. (2007). An imperative theory of pain. *The Journal of Philosophy*, 104, 517–32.
- Koyama, T., McHaffie, J. G., Laurienti, P. J., & Coghill, R. C. (2005). The subjective experience of pain: Where expectations become reality. *Proceedings of the National Academy of Sciences of the United States of America*, 102(36), 12950–12955. <http://www.pnas.org/content/102/36/12950.abstrac>.
- Lycan, W. G. (1995). Consciousness as internal monitoring. *Philosophical Perspectives*, 9, 1–14.
- Millikan, R. (1984). *Language, thought and other biological categories*. Cambridge: MIT.
- Millikan, R. (1995). Pushmi-pullyu representations. AI, connectionism, and philosophical psychology. *Philosophical Perspectives*, 9, 185–200.
- Millikan, R. (2004). *Varieties of meaning*. Cambridge: MIT.
- Peacocke, C. (2008). *Truly understood*. Oxford: Oxford University Press.
- Pendlebury, M. (1986). Against the power of force: Reflections on the meaning of mood. *Mind*, 95(379), 361–72.
- Pincock, C. (2008). Russell's last (and best) multiple-relation theory of judgement. *Mind*, 117(465) 107–40.

- Rainville, P., Carrier, B., Hofbauer, R., Bushnell, M., & Duncan, G. (1999). Dissociation of sensory and affective dimensions of pain using hypnotic modulation. *Pain*, 82(2), 159–71.
- Rosenthal, D. M. (2005). *Consciousness and mind*. Oxford: Clarendon.
- Russell, B. (1912/2001). Truth and falsehood. In M. P. Lynch (Ed.), *The nature of truth: Classic and contemporary perspectives* (pp. 17–24). Cambridge: MIT.
- Ryder, D. (2006). On thinking of kinds. In G. Macdonald, & D. Papineau (Eds.), *Teleosemantics* (pp. 115–145). Oxford: Oxford University Press.
- Seager, W. (2002). Emotional Introspection. *Consciousness and cognition*, 11, 666–87.
- Stampe, D. (1977). Towards a causal theory of linguistic representation. *Midwest Studies in Philosophy*, 2, 42–63.
- Sterelny, K. (1990). *The representational theory of mind: An introduction*. Oxford: Oxford University Press.
- Tye, M. (1995). *Ten problems of consciousness: A representational theory of the phenomenal mind*. Cambridge: MIT, Bradford Books.
- Tye, M. (2000). *Consciousness, color and content*. Cambridge: MIT, Bradford Books.
- Tye, M. (2006a). Another look at representationalism about pain. In A. Murat (Ed.), *Pain: New essays on its nature and the methodology of its study* (pp. 99–120). Cambridge: MIT, Bradford Books.
- Tye, M. (2006b). Defense of representationalism: Reply to commentaries. In A. Murat (Ed.), *Pain: New essays on its nature and the methodology of its study* (pp. 163–176). Cambridge: MIT, Bradford Books.
- Tye, M. (2009a). *Consciousness revisited: Materialism without phenomenal concepts*. Cambridge: MIT.
- Tye, M. (2009b). Representationalist theories of consciousness. In B. McLaughlin, & A. Beckermann (Eds.), *The Oxford handbook of philosophy of mind* (pp. 253–267). Oxford: Oxford University Press.
- Van der Kam, E. L., Vry, J. D., Schiene, K., & Tzschentke, T. M. (2008). Differential effects of morphine on the affective and the sensory component of carrageenan-induced nociception in the rat. *Pain*, 136, 373–79.
- Van Gulick, R. (2004). Higher-order global states (hogs): An alternative higher-order model of consciousness. In Gennaro, R.J., (ed.) *Higher-order theories of consciousness: An anthology* (pp. 67–92). Amsterdam: John Benjamins.
- Wright, L. (1973/1994). Functions. In E. Sober (Ed.), *Conceptual issues in evolutionary biology* (pp. 27–48). Cambridge: MIT, Bradford Books.