

Oxford Bibliographies Online

Philosophy of Pain

DRAFT ONLY: 15 October 2014

Please don't distribute further or cite without permission.

David Bain

TABLE OF CONTENTS

1. Introduction
2. Overviews, Textbooks, Collections
3. Pain and the Mind-Body Problem
4. The Structure of Pain Experience
 - a. Mental Objects v. Modes of Sensing
 - b. Perceptualism and Representationalism
5. Pain Location and Spatial Phenomenology
6. The Sensory-Affective Distinction
 - a. Pain Asymbolia
 - b. Other Cases
7. Affect and Motivation
 - a. Desire/Dislike Views
 - b. Evaluativism and Functionalism
 - c. Imperativism
8. Pain Insensitivity and Chronic Pain
9. The Extent of Pain: Animals, Fetuses, Computers

1. INTRODUCTION

Philosophers think of pain less and less as a paradigmatic instance of mentality, for which they seek a general account, and increasingly as a rich and fruitful topic in its own right. Pain raises specific questions: about mentality and consciousness certainly, but also about embodiment, affect, motivation, and value, to name but a few.

The growth of philosophical interest in pain has gone hand-in-hand with the growth of pain science, which burgeoned in the 1960s. This is no accident: developments in pain science have prompted philosophers to take account of empirical data, and to revisit their assumptions about pain. Pain, in short, demands interdisciplinary investigation, hence while this entry focuses on the philosophy of pain, it makes liberal reference to empirical literature along the way.

This entry's focus is on physical pains, that is pains that are felt in bodily locations, not emotional suffering more broadly, such as grief or disappointment. The entry also does not address pain's place in ethical theories; its focus is rather on issues that arise within philosophy of mind. Even so, part of what makes pain such an interesting and important topic is that the questions it raises span boundaries, and normative questions concerning pain's badness, on the one hand, and its value, on the other, are never far away.

2. OVERVIEWS, TEXT BOOKS, COLLECTIONS

There are few good overviews, textbooks, or edited collections in the philosophy of pain. Probably the best overview—comprehensive and accessible, with an excellent bibliography and links to further resources—is **Aydede** 2009. While overlapping extensively, **Aydede** 2006a adds a brief, helpful survey of the science of pain. **Hardcastle** (1999) too gives a philosopher's overview of pain science in the course of advancing her own eliminativist theory of pain (*Pain and the Mind-Body Problem*). For

scientists' accounts of pain science, **Fields and Price** 1994 provides a useful snapshot of pain science, while **Melzack and Wall** 1982/2008 is the latest edition of the classic introduction by the Canadian psychologist and British neuroscientist who revolutionised pain science in the 1960s. Another accessible book-length introduction to the science is **Price** 1999. **McMahon and Koltzenberg** 2013 is something quite different: a substantial (and very expensive) medical textbook, aimed at specialists, begun by Melzack and Wall in 1983 but now comprising chapters by more than 100 authorities on the genetics, neurophysiology, psychology, assessment, and treatment of pain. Finally, bringing together the philosophy and science of pain, **Aydede** 2006b is a useful interdisciplinary collection.

- **Aydede, M.** 2006a. "A critical and quasi-historical essay on theories of pain." In *Pain: New Essays on Its Nature and the Methodology of its Study*. Edited by Murat Aydede, 1-58. Cambridge, Mass.: MIT Press.
 - ▶ A useful overview of the philosophy of pain, emphasising difficulties for perceptual and representational views. §5 contains a brief overview of the science of pain, focusing on sensory-affective dissociations (see *The Sensory-Affective Distinction*) and gate-control theorists' attempts to explain the difficulty of establishing pain/stimuli correlations (see Melzack and Wall 1982/1999).
- **Aydede, M, ed.** 2006b. *Pain: New Essays on Its Nature and the Methodology of Its Study*. Cambridge, Mass.: MIT Press.
 - ▶ A stimulating collection. While primarily philosophical, it includes papers by psychologists and neuroscientists. Also has an extensive bibliography.
- **Aydede, M.** 2009. "Pain". In **Stanford Encyclopaedia of Philosophy* [<http://plato.stanford.edu/entries/pain/>]*.
 - ▶ The best overview of the philosophy of pain. Overlaps with Aydede 2006b but covers more of the philosophy of pain (e.g. motivational and evaluative theories) and less of the science.

Includes an extremely helpful bibliography and links to other resources.

- **Fields, H. and D. D. Price.** 1994. "Pain." In *A Companion to the Philosophy of Mind*. Edited by Samuel Guttenplan, 452-459. Oxford: Blackwell Publishers.
 - ▶ A short and useful, if dated, overview of pain science.
- **Hardcastle, V. G.** 1999. *The Myth of Pain*. Cambridge, Mass.: MIT Press.
 - ▶ Primarily a defence of Hardcastle's eliminativism about pain (see *Pain and the Mind-Body Problem*), but along the way provides an overview of the philosophy and science of pain, for which see especially chapters 4-6.
- **Melzack, R. and P. D. Wall.** 2008. *Challenge of Pain*. London: Penguin Books.
 - ▶ Originally published in 1982, this is the classic introduction to the science of pain, updated with a new introduction by Melzack in 2008. See Part III for theories of pain, including the gate-control theory for which Melzack and Wall are famous.
- **McMahon, Stephen and Martin Koltzenberg** (eds.). 2013. *Wall and Melzack's Textbook of Pain*. 6th ed. Philadelphia: Churchill Livingstone.
 - ▶ Written for doctors, the classic textbook on the science and treatment of pain. Begun by Wall and Melzack in 1983, it is now entering its sixth edition and fourth decade.
- **Price, D. D.** 1999. *Psychological Mechanisms of Pain and Analgesia*. Seattle: IASP Press.
 - ▶ Accessibly surveys what is known about the mechanisms underlying pain, as well as advancing Price's own view (influenced by Melzack and Wall's gate-control theory; see Melzack and Wall 1982/2008) which takes pains to be or involve bodily perceptions (see *Perceptualism and Representationalism*).

3. PAIN AND THE MIND-BODY PROBLEM

Pain is often a central example in debates among the standard approaches to the mind-body problem: behaviourism, identity theories, functionalism, and eliminativism. In these contexts, pain often figures as a mere exemplar of mental states in general. Even so, these discussions are a useful background for more recent and specific theorising about pain. A good place to start is **Hempel** 1949/2004, who comes closest to the classic behaviourist account that is now the whipping boy of undergraduate philosophy of mind courses. In the 1950-60s, two key alternatives came onto the scene: the identity theory and functionalism. See **Smart's** very readable 1959/2004 for a classic statement of a version of the identity theory on which pains and other sensations are *contingently* identical to brain states; for a more recent defence of an identity theory, distinctively based on a survey of pain science specifically, see **Polger and Sufka** 2005. **Putnam's** 1967/1975, a seminal piece, rejects behaviourism and the identity theory for a functionalist account of pain. Like Putnam, **Kripke** (1972) famously rejects the identity theory, arguing that pain/neural-state identity statements would be necessary if true (contra Smart) but are not necessary so must be false. Rejecting Kripke's metaphysical and semantical commitments, **Lewis** (1983) instead articulates a view of pain that is sometimes regarded as lying between the identity theory and functionalism. As for eliminativism, **Dennett** (1978), while not quite endorsing the view, argues that our concept of pain requires reform, owing to inconsistencies in the folk concept revealed by pain science, of which he provides a helpful, brief survey. **Hardcastle** (1999), also on the basis of a review of pain science, goes further and embraces the eliminativist conclusion that the folk term "pain" lacks reference.

- **Dennett**, D. 1978. Why you can't make a computer that feels pain. *Synthese* 38: 415-456.
 - ▶ Argues on the basis of neurophysiological data and anomalous cases thrown up by pain science that our intuitions about pain are

in irresolvable conflict. Provides a useful survey of the science (§2, pp. 423-438) and concludes that our folk concept of pain requires reform.

- **Hardcastle**, V. G. 1999. *The Myth of Pain*. Cambridge, Mass.: MIT Press.
 - ▶ An empirically informed defence of eliminativism about pain, with a particular focus on "psychogenic" pain.
- **Hempel**, C. 2004. "The logical analysis of psychology." In *Philosophy of Mind: A Guide and Anthology*, edited by John Heil, 85-96. Oxford: Oxford University Press.
 - ▶ First published in 1949, a classic exposition of logical behaviourism. Gives an account of the meaning of "Paul has a toothache" in terms of its verification conditions, both behavioural and—complicating the characterisation of this as a behaviourist view—physiological. The editor's introduction to the section in which Hempel's paper appears (pp. 75-84) would be useful for students.
- **Kripke**, S. 1980. *Naming and Necessity*. Oxford: Basil Blackwell.
 - ▶ Rejects (at pp. 146-155) the thesis that pain is a brain state on the basis of a modal argument that poses a threat to materialism more generally. Even so, concedes that some arguments for the identity theory are "highly compelling" and concludes that the mind-body problem is "wide open and extremely confusing" (n. 77, p. 155). (For criticism, see Lycan 1987 cited in *Mental Objects vs. Modes of Sensing*.)
- **Lewis**, D. 1983. "Mad Pain and Martian Pain." In his *Philosophical Papers: Vol. I*, 122-132. Oxford: Oxford University Press.
 - ▶ Defends the view—variously characterised as an identity theory or an unorthodox version of functionalism—that pain for a species is whatever state plays the pain role in typical members of that species, thus allowing (with identity theorists) the possibility of pains that do not play the "pain role" and (with functionalists) the possibility of pains being different states in Martians and humans. The 1983 version of the paper has a useful postscript, briefly responding to worries about pain's "phenomenal qualia".

- **Polger, T. W.** and **K. J. Sufka.** 2005. “Closing the gap on pain: mechanism, theory, and fit.” In *Pain: New Essays on Its Nature and the Methodology of Its Study*. Edited by Murat Aydede. Cambridge, Mass.: MIT Press.
 - ▶ Argues that developments in pain science are beginning to close any “explanatory gap” that might appear to block an identity theory of pain.
- **Putnam, H.** 1975. “The nature of mental States.” In his *Mind, Language, and Reality: Philosophical Papers vol. 2*, 429-440. Cambridge: Cambridge University Press.
 - ▶ Building on his earlier “Brains and behaviour” (which appears in the same collection), this paper rejects both behaviourism and the identity theory for a functionalist account of pain, of which it provides a seminal formulation. First published as “Psychological Predicates” in 1967
- **Smart, J. J. C.** 2004. “Sensations and brain processes.” In *Philosophy of Mind: A Guide and Anthology*. Edited by John Heil, 116-127. Oxford: Oxford University Press.
 - ▶ Argues, on grounds of simplicity, that pains and other sensations are contingently identical to neural states. The editor’s introduction to the section in which this paper appears (pp. 75-84) would be useful for students. First published in 1959.

4. THE STRUCTURE OF PAIN EXPERIENCE

While many agree that being in pain involves undergoing a kind of experience, this claim generates more questions than it answers. What is the structure of pain experiences? Are they perceptual? Do they consist in acquaintance with objects? If so, are the objects mental (e.g. pains, conceived along the lines of sense-data) or non-mental (e.g. body parts)? Do pain experiences enjoy representational content? And if so, does their possession of content constitute their phenomenal character?

A. MENTAL OBJECTS v. MODES OF SENSING

Just as the sense-datum view of visual experience says that its seeming to you as though a red tomato is before you consists in your being acquainted with a sense-datum (not a red tomato), so too the mental-object conception of pain says that your being in pain consists in your being acquainted with a pain, conceived as an awareness-dependent object. For an admirably clear, and much-discussed defence of this view, see **Jackson** 1977. **Langsam** (1995) also defends it, as a piece of common sense whose roots he seeks to illuminate. **Lycan** (1987), by contrast, presses a materialist objection, while **Wittgenstein** 1953/1967—a seminal but fiendishly difficult work—presents a more complex worry, centring on the putative impossibility of a “private language”. **McDowell** 1989/1998 accepts what he takes to be the thrust of Wittgenstein’s argument, but argues that a “non-givenist” version of the mental-object view escapes it; see **Bain** 2009 for exegesis and criticism. One key alternative to the mental object view is perceptualism (*Perceptualism and Representationalism*); another is adverbialism, which says that what makes an experience a pain experience is not what it is *of*, but *how* it is undergone. See **Tye** 1984 for a technical elaboration, and **Janzen** 2013 for an attempt to split the difference between mental object and adverbialist views. Among adverbialism’s critics are **Lycan** (1987) and **Jackson** (1977); both are clear and helpful but see especially Jackson for his influential “many-properties” objection.

- **Jackson, F.** 1977. *Perception: A Representative Theory*. Cambridge: Cambridge University Press.
 - ▶ A classic defence of mental objects and presentation of Jackson’s influential “many-property problem” for adverbialism. See especially chapter 3, which addresses relational, state, and adverbial theories of pain. (Jackson has since rejected mental objects and embraced representationalism; see *Representation and Perception*.)
- **Janzen, G.** 2013. An adverbialist-objectualist account of pain. *Phenomenology and the Cognitive Sciences* 12: 859-876.

- ▶ An attempt to combine the insights of putatively rival theories in an “adverbialist-cum-intentionalist” view that also acknowledges a way in which pains are objects of awareness. (See *Perceptualism and Representationalism*.)
- **Langsam**, H. 1995. Why pains are mental objects. *Journal of Philosophy* 92: 303-313.
 - ▶ Defends and explains what Langsam takes to be a piece of common sense: that, typically and contingently, pains are private and experience-dependent objects, by contrast with the objects of perceptual experience. Replete with suggestive thought experiments.
- **Lycan** 1987. *Consciousness*. Cambridge, Mass.: MIT Press.
 - ▶ Chapter 8 argues against *both* mental objects *and* adverbialism; it is in effect a first stab at the representationalism that Lycan develops in later work (*Representation and Perception*). Note also Lycan’s argument (at pp. 16-18) that Kripke’s case against the identity theory illicitly assumes the mental-object view (*Pain and the Mind-Body Problem*).
- **McDowell**, J. 1998. “One strand in the private language argument”, in his *Mind, Value, and Reality*, 279-86. Cambridge Mass.: Harvard University Press.
 - ▶ A rich but extremely difficult paper. Argues that a “givenist” version of the mental object view is the real target of one strand of Wittgenstein’s private language argument, which McDowell thinks a non-givenist variant escapes. First published in 1989.
- **Bain**, D. 2009. “McDowell and the presentation of pains. *Philosophical Topics* 37: 1-24.
 - ▶ Useful exegesis of McDowell 1998. Argues that McDowell’s desiderata are better met by perceptualism than by McDowell’s own mental-object view (see *Perceptualism and Representationalism*).
- **Tye**, M. 1984. Pain and the adverbial theory. *American Philosophical Quarterly* 21: 319-328.

- ▶ Formulates adverbialism in a way that is supposed both to escape Jackson’s (1977) many-property problem and to cope with phantom-limb pains. Rather technical for first-years.
- **Wittgenstein**, L. 1967. *Philosophical Investigations*. Oxford: Basil Blackwell.
 - ▶ First published in 1953, a seminal work of twentieth century philosophy. Rejects a conception of sensations as private objects reportable in a private language. At times comes close to an expressivist account of “I am in pain” (see §244 and §293). See also §§246, 257-272, 350-351, 379-381, 384, and 393, as well as “pain” in the index.

B. PERCEPTUALISM AND REPRESENTATIONALISM

As understood here, perceptualism contrasts both with the mental-object view and with adverbialism (*Mental Objects v. Modes of Sensing*). Perceptualists think that what makes an experience a pain experience is not simply *how* it is undergone, but *what*—in undergoing it—its subject *perceives* or *seems to perceive* or *has perceptually represented* to her, where this is understood otherwise than in terms of acquaintance with mental objects. David Armstrong and George Pitcher are two early perceptualists. **Armstrong** takes pains to be perceptual representations of “bodily disturbances” (in particular, “pain-receptor” stimulation). See his 1962, a short and beautifully readable book about pain and other bodily sensations, and also his 1968, which covers similar ground more briefly, within a book-length exposition of his general philosophy of mind. **Pitcher** (1970), another beautifully clear paper, argues for a slightly different version of the view: that *standard* pains are perceptions of *bodily disorder*. Moving to more recent perceptualists, the most influential is **Tye** (1995), who augments perceptualism with two novel ingredients, much-discussed in the current literature: a “tracking” account of perceptual content, and a “representationalist” thesis to the effect that the phenomenal character of perceptual experiences (including pains) consists in possession of such content. For an unorthodox version of perceptualism, on which those in pain perceive their body parts not as

disturbed, disordered, or damaged but as aching or hurting, see **Cornman** 1977. Turning, finally, to critics of perceptualism, **Aydede** 2009 is a comprehensive statement of key objections by perceptualism's most detailed and determined opponent. See also **Corns** 2014 and **Gray** 2014 for further objections, centring on the complaint that bodily damage is too loosely correlated with pain for pain to be construed as its perception.

- **Armstrong, D.** 1962. *Bodily Sensations*. London: Routledge and Kegan Paul.
 - ▶ This useful, clear, and lively little book kick-started contemporary interest in perceptualist accounts of pain. Argues that pains are or involve perceptions of "bodily disturbances". Helpfully considers numerous rival approaches to pain, and draws an influential distinction between transitive and intransitive sensations. See especially chapters 10 ff.
- **Armstrong, D.** 1968. *A Materialist Theory of the Mind*. London: Routledge and Kegan Paul.
 - ▶ Chapter 14 elaborates Armstrong 1962, claiming that having a pain is normally a matter of perceiving "pain receptor" stimulation (p. 315). See also chapter 10 for Armstrong's view of perceptual experiences as inclinations to believe.
- **Aydede, M.** 2009. "Is feeling pain the perception of something", *Journal of Philosophy* 106, 531-567.
 - ▶ Rejects perceptualism and representationalism on the basis of a detailed articulation of alleged asymmetries between pain experiences and visual experiences, focusing on their relations to judgement, introspection, and attention.
- **Cornman, J. W.** 1977. Might a tooth ache and there be no tooth ache? *Australasian Journal of Philosophy* 1: 27-40.
 - ▶ Lovely, clear, and economical defence of the view that aching, for instance, is a mental but objective property whose instantiations by body parts are perceived by subjects in pain. §4 addresses objections in Armstrong 1962. (See also Hyman 2003 and Noordhof 2001, cited in *The Location of Pain*.)

- **Corns, J.** 2014. The inadequacy of unitary characterizations of pain. *Philosophical Studies* 169: 355-378.
 - ▶ §3 contains a relatively detailed elaboration of the objection that perceptualists are committed to regarding as either illusory or hallucinatory implausibly many pains given the pervasiveness of dissociations between pain and bodily damage.
- **Gray, R.** 2014. Pain perception and the sensory modalities: Revisiting the intensive theory. *Review of Philosophy and Psychology* 5: 87-101.
 - ▶ A subtle, suggestive paper, which rejects Tye-style perceptualism on similar grounds to Corns (2014) while trying to salvage a sense in which pain is nonetheless perceptual. The upshot is a version of "the intensive theory of pain", on which pains represent excessive stimulation of sense organs.
- **Pitcher, G.** 1970. Pain perception. *Philosophical Review* 79: 368-93.
 - ▶ Clear, sophisticated, and influential defence of the view that, standardly, feeling pain involves perceiving "disordered" states of one's body. Seeks to reconcile this with intuitions about the privacy of pains via a comparison of the concepts *pain* and *glimpse*.
- **Tye, M.** 1995. A representational theory of pains and their phenomenal character. *Philosophical Perspectives* 9: 223-39.
 - ▶ The most influential perceptualist of recent years, Tye regards pains as perceptual representations of bodily damage, much like Pitcher, but he develops the view within the context of a representationalist theory of phenomenology and an account of perceptual content as non-conceptual. (Has since changed his mind; see *Evaluativism*.)

5. PAIN LOCATION AND SPATIAL PHENOMENOLOGY

The location of pains has long puzzled philosophers. On the one hand, we sometimes speak of pains as being in (for instance) our feet; on the other, theorists tend to think that experiences are where conscious subjects are, and that feet are not conscious subjects. One response is to deny that

pains are experiences. Hence **Jackson** famously argues that pains are not episodes of awareness, but awareness-dependent mental objects, which he thinks sometimes are literally and straightforwardly in our feet, or even—in phantom-limb cases—in thin air. (On mental objects, see *Mental Objects versus Modes of Sensing*; on phantom-limb cases, see *Pain Insensitivity and Chronic Pain*.) **Hyman** (2003) also denies that pains are experiences, taking them instead to be states of body parts. (For criticism, see **Bain** 2007.) **Noordhof** (2001) takes a similar line (as does Cornman 1997, cited under *Perceptualism and Representationalism*). Noordhof's contribution sparked a debate with **Tye**, whose view of pain dovetails with his perceptualism: having a pain in a foot, he thinks (1996), is really a matter of seeming to perceive that foot as damaged (*Perceptualism and Representationalism*). **Bain** (2007) agrees with Tye that pain location is a perceptual phenomenon, since our judgements of pain location—he argues—are driven by intuitions about perception's enabling conditions. For **Wittgenstein** (1953/1969), what determines pain location is pain behaviour (e.g. pointing), a view that arguably has more in common with perceptualism than it seems (see Hyman for discussion). Famously, Wittgenstein also touches on the wonderful case of having a pain in someone else's body. Such extraordinary thought experiments are central to **O'Shaughnessy's** influential, if gnomic, discussion of pains' "projective location", in which he also develops an account of the distinctive spatial phenomenology of bodily sensations in particular and bodily experience in general. On that topic, see also **Bermúdez** (1998), who is succinct, helpful, and clear.

- **Bain, D.** 2007. The location of pains. *Philosophical Papers* 36: 171-205.
 - ▶ Makes an original argument that pain location is a perceptual phenomenon, while also rejecting how fellow perceptualists have articulated and motivated similar claims. Useful discussion of Armstrong, Tye, Noordhof, and Hyman.
- **Bermúdez, J.** 1998. *The Paradox of Self-Consciousness*. Cambridge, Mass.: MIT Press.

- ▶ A clear discussion not of the location of pains, but of the distinctive spatial content of pain experience and bodily awareness more generally. See Chapter 6, §5.
- **Hyman, J.** 2003. Pains and places. *Philosophy* 75: 5-24.
 - ▶ Argues that pains are states of body parts and rejects competing accounts of pain location. Helpfully sketches the history of the location debate.
- **Jackson, F.** 1977. *Perception*. Cambridge: Cambridge University Press.
 - ▶ Contains (see especially pp. 54-6 and 77-8) a clear and careful statement and defence of a mental-object account of pain location.
- **Noordhof** 2001. In pain. *Analysis* 61: 95-97.
 - ▶ Argues that a "state-attributing" reading of such sentences as "The pain is in my fingertip" does the same work as Tye's perceptualist account without needing to posit a special, sensation-specific sense of "in". Tye responds in the same journal.
- **O'Shaughnessy, B.** 1980. *The Will: A Dual Aspect Theory*. Vol. 1. Cambridge: Cambridge University Press.
 - ▶ §II, especially chapter 6, contains a rich but extremely difficult discussion both of the determinants of the "projective location" of pains (see, e.g., pp. 175-9, 196-7) and of the spatial and bodily phenomenology of pain awareness (see, e.g., pp. 162, 167).
- **Tye, M.** 1996. *Ten Problems of Consciousness*. Cambridge, Mass.: MIT Press.
 - ▶ Chapter 4, §5 contains a brief defence of a perceptualist account of pain and pain location.
- **Wittgenstein, L.** 1969. *The Blue and Brown Books*. Oxford: Basil Blackwell.
 - ▶ First published in 1953, contains (at pp. 49-55) a seminal treatment of the location of sensations; see Hyman 2003 for a brief, critical discussion.

6. THE SENSORY-AFFECTIVE DISTINCTION

Ordinary pains, on the face of it, are unpleasant and motivational. But some weird and wonderful case studies, as well as research into the neural pathways underlying pain, have persuaded many—both scientists and philosophers—that there could be and in fact are pains that are neither. On this basis, it is often held that ordinary pains comprise at least two dissociable “components”: on the one hand, an “affectively neutral” sensory experience, and on the other an affective component, contributing the overall state’s unpleasantness and motivational force.

A. PAIN ASYMBOLIA

Pain asymbolia is perhaps the most striking, if ill-documented, case in which pains’ alleged sensory and affective components putatively dissociate. As understood here, asymbolia is an acquired condition whose subjects, given noxious stimuli, say they feel pain but appear not to mind it, while also being relatively unresponsive to other (e.g. visual) experiences of threatening stimuli. **Schilder and Stengel** 1928 is the first case study but lacks an English translation. For an early report in English, see **Hemphill and Stengel** 1940. The most recent—and arguably most useful and cited—case study is **Berthier** 1988. **Grahek** 2007 is the key philosophical discussion; empirically detailed and replete with references to the scientific literature, it has sparked a good deal of interest among philosophers. For a very recent debate about asymbolia’s philosophical significance, see **Klein** 2015 (which aims to reconcile asymbolia with a conception of pain as a unitary experience), **Bain** 2014 (which, adapting an idea of Klein’s, gives an evaluativist account of asymbolia; see *Evaluativism and Functionalism*), and **de Vignemont** 2015 (which presents an objection to both Klein and Bain).

- **Bain** 2014. Pains that don’t hurt. *Australasian Journal of Philosophy* 92: 305-320.
 - ▶ Agrees with Klein (2014) that asymbolia is explicable in terms of asymbolics’ inability to care for their bodies, but suggests this is

best made sense of not in terms of Klein’s unitary imperativism (*Imperativism*), but in terms of a view that distinguishes pain’s sensory and affective components and takes the latter to be evaluative (*Evaluativism and Functionalism*).

- **Berthier, M., S. Starkstein and R. Leiguarda.** Asymbolia for pain: A sensory-limbic disconnection syndrome. *Annals of Neurology* 24: 41-49.
 - ▶ A case study of eight putative cases of pain asymbolia, together with speculation about its neural causes.
- **Grahek** 2007. *Feeling Pain and Being in Pain*. Cambridge, Mass.: MIT Press.
 - ▶ Argues that pain asymbolia is the only clear case of “pain without painfulness”. A short book, it is worth reading in its entirety, but chapters 1, 3, and especially 4 are particularly useful. Chapter 8, on the wider philosophical ramifications of asymbolia, is less so. First published in 2001, the 2007 edition is more polished.
- **Hemphill, R. E. and E. Stengel** 1940. A Study of Pure Word Deafness. *Journal of Neurology and Psychiatry* 3: 251-62.
 - ▶ A detailed description of a case of “pure word deafness” with pain asymbolia; see pp. 255-262 for the description of pain asymbolia.
- **Klein, C.** 2015. What pain asymbolia really shows. Forthcoming in *Mind* 123: #-#.
 - ▶ Clear, thought-provoking, and original, rejects Grahek’s account (2007) of asymbolia as revealing pain to be composite in favour of an explanation adverting to asymbolics’ inability to care for their own bodies.
- **Schilder, P. and E. Stengel** 1928. Schmerzasympolie. *Zeitschrift für die Gesamte Neurologie und Psychiatrie* 113: 143-158.
 - ▶ The first published report of pain asymbolia. Published in German, this paper has no English translation. This is unfortunate since this paper is considerably more detailed than

Hemphill and Stengel 1940; happily, however, Klein 2015 and especially Grahek 2007 provide numerous translated quotations.

- **de Vignemont, F.** 2015? Pain and Bodily Care: Whose Body Matters? Under review.
 - ▶ Argues that lack of bodily care (invoked by Klein [2015] and Bain [2014]) cannot explain pain asymbolia since subjects with alien limb syndrome react normally to pains in limbs they seem not to care about.

B. OTHER CASES

The distinction between pain's "sensory-discriminative" and "motivational-affective" dimensions is often traced back to **Casey and Melzack's** 1968. While seminal, this paper may be too technical for those unversed in neuroscience, but there are many more accessible papers discussing both the distinction and the evidence typically taken to support it, usually cases in which subjects appear not to mind, or even to enjoy, their pains, for example cases involving pain asymbolia (*Pain Asymbolia*), hypnosis, lobotomy, morphine, and sexual masochism. See, for example, the philosophical discussions in **Trigg** 1970, especially on lobotomy, and also **Pitcher** 1970, which invokes the "Melzack-Wall Gate" to reconcile such cases with the idea that, necessarily, pains are unpleasant. Returning to scientists, **Barber**, a psychologist, provides a useful, albeit very dated (1959) overview of a number of the key cases. **Rainville** et al (1999) report more specifically on a seminal experiment purporting to show that hypnosis can affect pain's unpleasantness without affecting its sensory component. Notice that adherents of the sensory/affective distinction typically focus on pain without unpleasantness, but **Ploner** (1999) claims to have found a case of the reverse dissociation: pain's unpleasantness without pain. Finally, anomalous cases and empirical discoveries have prompted some to draw further distinctions among pain's dimensions. See, for example, **Price** (2000), a neuroscientist, who distinguishes between pain's unpleasantness and its "secondary affect", and **Corns**, a philosopher, who argues for the possible dissociation of pain's affect and its "motivational oomph".

- **Barber, T.** 1959. Toward a theory of pain: Relief of chronic pain by prefrontal leucotomy, opiates, placebos, and hypnosis. *Psychological Bulletin* 56: 430-460.
 - ▶ Technical and dated, but nonetheless a useful review of numerous interventions for chronic pain that have implications for the sensory/affective distinction, including lobotomy, morphine, and hypnosis.
- **Casey and Melzack** 1968. "Sensory, Motivational, and Central Control Determinants of Pain: A New Conceptual Model". In *The Skin Senses: Proceedings of the First International Symposium on the Skin Senses, Held at the Florida State University in Tallahassee, Florida*. Edited by Dan R. Kenshalo, pp. 423-443. Springfield Illinois: Charles C. Thomas Publisher.
 - ▶ Distinguishes three dimensions of pain: "sensory-discriminative", "affective-motivational", and "cognitive-evaluative". The latter two, they complain, tend to be mistakenly relegated to the status of mere "pain reactions". Out of print, but can be found online.
- **Corns, J.** 2014. Unpleasantness, motivational *Oomph*, and painfulness. *Mind and Language* 29: 238-254.
 - ▶ Argues that pain's unpleasantness and its motivational "oomph" can dissociate. Partly based partly on Kent Berridge's important work on positive affect.
- **Pitcher, G.** 1970. The awfulness of pain. *Journal of Philosophy* 68: 481-92.
 - ▶ Argues that apparent cases of non-unpleasant pains are in fact cases in which the "Melzack-Wall gate" prevents the subject from feeling pain (unpleasant or not) at all. An early and good example of a philosopher bringing empirical work to bear on philosophical concerns. (For more on the Melzack-Wall gate, see Melzack and Wall 1982/2008 cited in *Overviews, Textbooks, Collections*.)

- **Ploner, M., H. J. Freund and A. Schnitzler.** 1999. Pain affect without pain sensation in a patient with a postcentral lesion. *Pain* 81: 211-214.
 - ▶ A case study allegedly illustrating the sensory/affective dissociation going in the less-discussed direction: pain's unpleasantness without pain.
- **Price** 2000. Psychological and neural mechanisms of the affective dimension of pain. *Science* 288: 1769-1772.
 - ▶ A short review, aimed at scientists but fairly accessible, distinguishing "pain sensation" from its affect, and, within affect, between unpleasantness and "secondary affect", that is "the emotional feelings directed towards long-term implications of having pain". It is secondary affect, Price argues, that is absent in lobotomy cases. Also discusses the neural pathways underlying these different dimensions.
- **Rainville, P., B. Carrier, R. K. Hofbauer, M. C. Bushnell, and G.H. Duncan.** 1999. Dissociation of sensory and affective dimensions of pain using hypnotic modulation. *Pain* 82: 159-71.
 - ▶ A seminal study purportedly showing that hypnosis can affect pain's unpleasantness while leaving its sensory dimension unchanged.
- **Trigg, R.** 1970. *Pain and Emotion*. Oxford: Oxford University Press.
 - ▶ An interesting discussion of various anomalous cases, such as pains in the lobotomised (chapter 7) and asymbolia and masochism (chapter 8). Useful for its careful, nuanced description of the phenomena.

7. PHILOSOPHICAL ACCOUNTS OF PAIN'S AFFECTIVE-MOTIVATIONAL DIMENSION

Whatever one says about certain anomalous cases (see *The Sensory-Affective Distinction*), *typical* pains are on the face of it both affective and motivational. That is, they are unpleasant, and they apparently motivate us to, for instance, lift our hands from buckets of freezing water.

Historically, philosophers and scientists tended to neglect these aspects of pain, but they are now being addressed head-on. In philosophy, in particular, a lively debate has emerged among four key views of pain's affective, motivational character: desire/dislike accounts, evaluativism, imperativism, and functionalism.

A. DESIRE/DISLIKE VIEWS

Desire/dislike theorists claim, roughly, that a pain experience's unpleasantness consists in its subject's disliking it or wanting it to cease. See **Armstrong** (1962, 1968) for a classic statement of the view, articulated as part of his perceptualist approach (*Perceptualism and Representationalism*). **Bain** 2013 objects that the view cannot give the most obvious explanation of why we dislike pains, namely that they are unpleasant, and that it fails to accommodate the badness and reason-giving force of pain's unpleasantness. On the first point, see **Pitcher** 1970 and especially **Hall** 1989 for alternative explanations of our disliking pain. Concerning the second point, **Korsgaard** 1996 is a rich, suggestive, and challenging discussion of normative questions regarding pain and suffering more broadly. For further objections to desire/dislike views, see **Rachels** 2000, a lively paper full of arguments and replete with helpful references to the wider literature.

- **Armstrong, D.** 1968. *A Materialist Theory of the Mind*. London: Routledge and Kegan Paul.
 - ▶ Recapitulates (at pp. 310-319) Armstrong 1962. Also contains an interesting, brief discussion of the relationship of pain and pleasure (175-9).
- **Armstrong, D.** 1962. *Bodily Sensations*. London: Routledge and Kegan Paul.
 - ▶ A clear and arguably the most influential statement of the idea that a pain's painfulness consists in its subject wanting it to cease or, as Armstrong also puts it, disliking it. See chapters 13-14 (especially pp. 93-4, 107-9).

- **Bain, D.** 2013. What makes pains unpleasant? *Philosophical Studies* 166: 60-89.
 - ▶ Uses different conceptions of desire to generate two versions of the desire/dislike view, each of which is argued to fail. See especially §§3-4 and 6.
- **Hall, R.** Are pains necessarily unpleasant? 1989. *Philosophy and Phenomenological Research* 49: 643-659.
 - ▶ A desire/dislike theorist (at the time of writing; see *Imperativism* for his change of mind), Hall argues that dislike of pain is contingent and explicable in terms of natural selection and learnt association. Interesting discussion of Pavlov's dogs and Henry Beecher's study of the pain experienced by soldiers whose injuries saved them from the battlefield.
- **Korsgaard, C.** 1996. *Sources of Normativity*. Cambridge: Cambridge University Press.
 - ▶ Contains a difficult but rich discussion of pain and its relationship to emotional suffering, among much else. Coming at least close to a desire/dislike account, Korsgaard explains painfulness and its badness in terms of our *objecting to* or *revolting against* certain sensations (pp. 147-148, 154). At other points (pp. 148-151), her account seems also to have evaluativist strains (*Evaluativism and Functionalism*).
- **Pitcher, G.** 1970. Pain perception. *Philosophical Review* 79: 368-93.
 - ▶ Along with Armstrong 1962 and 1968, another seminal attempt to explain pain's unpleasantness in terms of our disliking pains or wanting them to stop, which is in turn explained in terms of conditioning and natural selection (pp. 380-81).
- **Rachels, S.** Is unpleasantness intrinsic to unpleasant experiences?. *Philosophical Studies* 99: 187-210.
 - ▶ Provides several arguments against desire/dislike views, which are rejected in favour of the idea that unpleasant experiences are intrinsically unpleasant. See §§3-4 especially. Myriad useful references to further literature; a good route into the issues.

B. EVALUATIVISM AND FUNCTIONALISM

Evaluativists claim that the unpleasantness and motivational force of typical pain experiences is a matter not of subjects' experience-directed attitudes (*Desire/Dislike Views*), but of the experiences' body-directed evaluative content. Having an unpleasant pain, the idea goes, involves a subject undergoing an experience that represents to her that a part of her own body is in a state that is bad for her. Evaluativism first appeared in **Helm** 2001 and 2002 (the latter is shorter, but the former's detail is helpful in getting to grips with a sophisticated and demanding version of the view). A second evaluativist, **Bain** (2013), argues that the view illuminates the rationalising role of pain's unpleasantness better than either desire/dislike or imperativist views (*Desire/Dislike Views* and *Imperativism*). Previously a desire/dislike theorist, **Tye** adopts evaluativism in his 2005, a piece that sparked an ongoing debate. Commentaries published alongside Tye's paper denied that his well-known naturalistic account of perceptual content could accommodate evaluative content (*Perceptualism and Representationalism*). **Cutter and Tye** (2011) aim to show that, on the contrary, it can. But **Aydede and Fulkerson** (2014) respond that their attempt threatens to collapse into—and is unmotivated vis-à-vis—a simpler and more attractive psychofunctionalist account. For an elaboration of the psychofunctionalist view Aydede and Fulkerson have in mind, see **Aydede** 2014.

- **Aydede, M.** and **M. Fulkerson.** 2014. Affect: Representationalism's headache. *Philosophical Studies* 170: 175-198.
 - ▶ Objects that Cutter and Tye's account of evaluative content depends on teleological facts that can explain pain's painfulness without adverting to content. Also objects that evaluativism is incompatible with the transparency of experience, to which representationalists are committed. A reasonably demanding paper.

- **Aydede, M.** 2014. How to unify theories of sensory pleasure: An adverbialist proposal. *Review of Philosophy and Psychology* 5: 119-133.
 - ▶ Although this short and readable paper is focused mainly on pleasure, Aydede intends his moral to carry over to the pain case. Pleasure and pains, the idea goes, have content, but their pleasantness consists in their psychofunctional role. Aydede ties this to adverbialism (*Mental-Object Views and Adverbialism*).
- **Bain, D.** 2013. What makes pains unpleasant? *Philosophical Studies* 166: 60-89.
 - ▶ Argues, on the basis of unpleasant pain's motivational and reason-giving force, for the superiority of evaluativism over both desire/dislike views and imperativism.
- **Cutter, B. and M. Tye.** 2011. Tracking representationalism and the painfulness of pain. *Philosophical Issues* 21: 90-109.
 - ▶ Elaborates Tye's evaluativism (2005) by providing a naturalistic account of evaluative content.
- **Helm, B.** 2002. Felt evaluations: A theory of pleasure and pain. *American Philosophical Quarterly* 39: 13-40.
 - ▶ A sophisticated, early defence of evaluativism, arguing that not only physical pains, but also desires and emotions are "felt evaluations". Demanding.
- **Helm, B.** 2001. *Emotional Reason: Deliberation, Motivation, and the Nature of Value*. Cambridge: Cambridge University Press.
 - ▶ A rich and demanding book, which usefully fills out the details sketched in Helm 2002. On pain as a "felt evaluation", see especially §3.6, but this section is best read in the context of Part I in its entirety.
- **Tye, M.** 2005. "Another Look at Pain", in *Pain: New Essays on Its Nature and the Methodology of Its Study*. Edited by M. Aydede, 99-120. Cambridge, Mass.: MIT Press.
 - ▶ Among much else, augments Tye's perceptualist view of pain (*Perceptualism and Representationalism*) with an evaluativist account of pain's unpleasantness, on which pains are unpleasant

by dint of representing bodily disturbances as apt to *harm* the subject (see especially §4). The paper is followed by four commentaries, to which Tye replies.

C. IMPERATIVISM

Like evaluativists (*Evaluativism and Functionalism*), imperativists take a pain's motivational character (and, for most imperativists, its unpleasantness) to be constituted by its possession of the right semantic content; but imperativists take the mood of the relevant contents to be, at least partly, imperative rather than indicative. Pains, for them, are experiential commands. **Klein** (2007) provides imperativism's first clear statement and best introduction. For him, pain content is entirely imperativist and tells the subject to stop doing what she is doing, e.g. putting weight on a sprained ankle. For other versions of imperativism, see **Hall** 2008, which motivates the view somewhat differently from Klein, and **Martínez** 2011, which takes up some unfinished business by, for example, sketching an account of imperative content. **Tumulty** 2009 is a short comment on Klein 2007, insisting that Klein needs to appeal to more than just imperative content, and presenting some problem cases such as headache. **Bain** 2011 makes further complaints about imperativism, and **Bain** 2013 argues that imperativism accommodates the badness and rational role of pain's unpleasantness less well than evaluativism (*Evaluativism and Functionalism*). **Cutter and Tye** 2011 further object that imperativism lacks accounts either of pain intensity or of pleasure.

- **Bain, D.** 2011. The imperative view of pain. *Journal of Consciousness Studies* 18: 164-185.
 - ▶ Argues that Klein's imperativism (2007) can accommodate neither sensory/affective dissociations (*The Sensory/Affective Distinction*) nor the distinction between pains and other urges, and that the notion of a command cannot explain what Klein takes it to.
- **Bain, D.** 2013. What makes pains unpleasant? *Philosophical Studies* 166: 60-89..

- ▶ Compares desire/dislike views, imperativism, and evaluativism, arguing that imperativism is not the improvement on desire/dislike views that it might seem to be.
- **Hall, R.** 2008. If it itches, scratch!. *Australasian Journal of Philosophy* 86: 525-535.
 - ▶ Advances an imperativist view of itch sensations partly to explain the “aura of conceptuality” of the connection between itching and scratching. Despite the focus on itch, this clear and very readable paper is useful even for those interested solely in pain, which is addressed on the final page (Hall takes pains to have *both* indicative and imperative content).
- **Klein, C.** 2007. An imperative theory of pain. *Journal of Philosophy* 104: 517-522.
 - ▶ Lively and clear, an excellent introduction to imperativism, which is advanced as a way of extending a version of representationalism to pain (*Perceptualism and Representationalism*).
- **Martínez, M.** 2011. Imperative content and the painfulness of pain. *Phenomenology and the Cognitive Sciences* 10: 67-90.
 - ▶ Best read after Klein 2007. Develops a rather different form of imperativism from Klein’s and unpacks the details, for example gesturing at an account of imperative content.
- **Tumulty, M.** 2009. Pains, imperatives, and intentionalism. *Journal of Philosophy* 106: 161-166.
 - ▶ A short, brief, and clear reply to Klein 2007.

8. PAIN INSENSITIVITY AND CHRONIC PAIN

Among pain pathologies, pain insensitivity and chronic pain are near-opposites: pain insensitives are altogether incapable of pain; those with chronic pain have persisting pain in the absence of actual or threatened tissue damage or pathology (except of the nervous system). These contrasting disorders, each with myriad forms, promise to help illuminate pain’s nature and role. On pain insensitivity, **Brand and Yancey** 1993 is a

- highly accessible, anecdotal book, co-authored by a surgeon and a Christian writer. **Melzack and Wall’s** briefer discussion of insensitivity (1982/2008) is more theoretically informed and replete with useful references. **Nagasako et al** 2003 is a relatively recent and more technical survey of the literature. Pain insensitivity, notice, is not the only case of bodily damage—even of *severe* bodily damage—without pain; for much more routine but still instructive cases, see **Wall** 1979. Turning to chronic pain, **Loesler and Melzack** (1999) helpfully distinguish it from both transient and acute pain. For discussion of chronic cases, **Melzack and Wall** (1982/2008) and **Hardcastle** (1999) are both useful. Among the different kinds of chronic pain, “phantom-limb” cases—in which subjects seem to feel pains in limbs they no longer have—are particularly fascinating. See **Ramachandran and Blakeslee** 1998 for a highly accessible introduction to the phenomenon, including a brief discussion of Ramachandran’s famous experiments using mirror boxes to reduce phantom-limb pain. **Ramachandran and Rogers-Ramachandran** 1996 is a more technical account of the mirror-box experiments.
- **Brand, P. and P. Yancey** 1993. *The Gift of Pain: Why We Hurt and What We Can Do About It*. Grand Rapids, Michigan: Zondervan Publishing House.
 - ▶ Focuses on Brand’s work as a surgeon treating lepers in India. See especially chapters 1 and 13 (the latter is particularly interesting for its account of the shortcomings of a prosthetic pain system Brand devised). Previously published under the title, *The Gift Nobody Wants*.
 - **Melzack and Wall** *Challenge of Pain*. London: Penguin Books.
 - ▶ See especially Chapter 1 for discussion of (i) pain insensitivity, in particular “congenital analgesia”, including the famous case of Miss C, (ii) routine cases of injury without pain, and (iii) chronic pain, on which chapter 14 elaborates. Originally published in 1982
 - **Nagasako E.M., A.L. Oaklander, and R.H. Dworkin.** 2003. Congenital insensitivity to pain: An update. *Pain* 101: 213-219.

- ▶ Draws useful distinctions between pain insensitivity and pain indifference, and between congenital and non-congenital cases. Heavy-going for non-specialists.
- **Wall, P. D.** 1979. On the relation of injury to pain. *Pain* 6: 253-264.
 - ▶ Argues that “pain has only a weak connection to injury” and draws a helpful distinction between three “phases of response” to injury. Wall is a famous neurologist, but this paper is anecdotal, engaging, and accessible to the non-specialist.
- **Loesler, J. D. and R. Melzack** 1999. Pain: An overview. *Lancet* 353: 1607-09.
 - ▶ Exceptionally short overview of concepts of pain from two scientists. While fairly technical, it contains a helpful distinction among transient, acute, and chronic pains.
- **Ramachandran, V. S. and S. Blakeslee** 1998. *Phantoms in the Brain: Human Nature and the Architecture of the Mind*. London: Fourth Estate.
 - ▶ Popular introduction to neuroscience by a famous neuroscientist. Chapter 3 addresses phantom-limb pains, include Ramachandran’s own attempts to alleviate them using mirror boxes.
- **Ramachandran, V. S. and Rogers-Ramachandran, D.** Synaesthesia in phantom limbs induced with mirrors. *Proceedings of the Royal Society B* 263: 377-386.
 - ▶ An account of Ramachandran’s use of mirror boxes to reduce phantom limb pain. More detailed and technical than Ramachandran 1998.
- **Hardcastle, V. G.** 1999. *Myth of Pain*. Cambridge, Mass.: MIT Press.
 - ▶ See especially Chapter 2 on chronic pain. Hardcastle denies the existence of “psychogenic” pains, although as an eliminativist she also thinks the folk term “pain” fails to refer quite generally (see *Pain and the Mind-Body Problem*).

9. EXTENT OF PAIN: ANIMALS, FETUSES, COMPUTERS

Most adult humans feel pain, but do non-human animals, or fetuses, or even computers? Some argue that non-human animals (hereafter “animals”) do not feel pain, or do not feel *conscious* pain, or at any rate do not *suffer*. For this view, **Harrison** 1991 and **Carruthers** 2000 are good places to start. Harrison focuses on animals’ inability to weigh their pain up alongside other reasons in their practical deliberations; Carruthers is instead impressed by their inability to think about their own experience, which he takes to be required for phenomenal consciousness. On the other side of the debate, **Singer’s** 1975/2005 is a seminal and very readable work of applied ethics, arguing that animals *obviously* suffer, hence have interests that must weighed equally alongside humans’. For empirically richer defences of animal suffering, see **Allen** and **Shriver**, which are worth reading together. The former contains a detailed and nuanced consideration of the neuroscientific and psychological data bearing on the question of animal pain, focusing particularly on suffering’s role in learning, while the latter—succinct and accessible—considers mammals and focuses on the distinction between pain’s sensory and affective dimensions (*The Sensory-Affective Distinction*). Both are useful also for their many references to the empirical literature. Finally, **Braithwaite** 2010 is an impressively accessible discussion by a biologist of whether fish feel pain. Turning from animals to fetuses and computers, **Derbyshire** 2006 succinctly argues that, while fetuses have an intact “pain system” from 26 weeks’ gestation, this is insufficient for undergoing “pain experience”, while **Dennett** 1978 beautifully motivates the question whether a computer might feel pain (he ultimately answers negatively, but only because of general defects he takes there to be in the very concept of pain; see *Pain and the Mind-Body Problem*).

- **Allen, C.** 2004. Animal pain. *Noûs* 38: 617-643.
 - ▶ While remaining neutral about theories of consciousness, uses empirical data to cast doubt on Carruthers’ (2000) claim that no animals (except perhaps the great apes) experience conscious

pain. Particularly interesting on the role of pain in learning. Rich in empirical detail and replete with references to the scientific literature.

- **Braithwaite, V.** 2010. *Do Fish Feel Pain?* Oxford: Oxford University Press.
 - ▶ Argues that fish feel pain, on the basis of functional analogies between fish and human brain structures. By a distinguished biologist, this is a very readable, accessible account.
- **Carruthers, P.** 2000. *Phenomenal Consciousness: A Naturalistic Theory.* Cambridge: Cambridge University Press.
 - ▶ An extended defence of a higher-order-thought account of phenomenal consciousness in general (not only of pains). Argues that this precludes phenomenal consciousness in animals except perhaps the great apes. See especially chapters 7-9.
- **Dennett, D.** 1978. Why you can't make a computer that feels pain. *Synthese* 38: 415-456.
 - ▶ §1 contains a lovely sketch of a debate between someone who accepts and someone who rejects the possibility of computer pain. Dennett sides with the sceptic but only on the grounds of his near-eliminativism about pain (see *Pain and the Mind-Body Problem*).
- **Derbyshire, S.** 2006. Can fetuses feel pain? *British Medical Journal* 332: 909-912.
 - ▶ A short paper, by a neuroscientist, responding to those who argue that, since the "pain system" in a fetus is intact by 26 weeks' gestation, the fetus can from that point experience pain.
- **Harrison, P.** 1991. Do animals feel pain?. *Philosophy* 66: 25-40.
 - ▶ Criticises arguments for the existence of animal pain that are based on behaviour, neurophysiology, or evolutionary continuity. Denies animal pain on the basis that animals have no need of a sensation that is "the body's representative in the mind's decision-making process" (38). A straightforward, if polemical, statement of neo-Cartesianism; covers a lot of ground at break-neck pace.
- **Shriver, A.** 2006. Minding mammals. *Philosophical Psychology* 19: 433-442.
 - ▶ Claims that sensory/affective dissociations can be brought about in non-human mammals (*The Sensory/Affective Distinction*). A philosopher, Shriver describes the science clearly and provides helpful references. (See Allen et al 2005 for more detail and proposed new directions of research.)
- **Singer, P.** 2005. *Animal Liberation.* London: Pimlico.
 - ▶ First published in 1975, a highly influential statement of the ethical argument for better treatment of animals. The key premise is that animals feel pain, a claim Singer defends (in Chapter 1) on the basis of evolutionary continuity and similarities of behaviour and neurobiology. (For criticism of these arguments, see Harrison 1991.)