Cowie, Fiona. *What's Within? Nativism Reconsidered*. Oxford: Oxford University Press, 1998.

Descartes, René. *Discourse on the Method of Rightly Conducting the Reason* (1637). Translated by E. S. Haldane and G. T. R. Ross. In *The Essential Descartes*, edited by Margaret Wilson. New York: New American Library, 1969.

Descartes, René. *Meditations on First Philosophy* (1641). In *The Essential Descartes*, edited by Margaret Wilson. New York: New American Library, 1969.

Descartes, René. *Notes Directed Against a Certain Programme* (1648). In *The Essential Descartes*, edited by Margaret Wilson. New York: New American Library, 1969.

Dennett, Daniel. "Brain Writing and Mind Reading." *Minnesota Studies in the Philosophy of Science* 7 (1975): 403–415.

Elman, J. L., E. A. Bates, M. H. Johnson, and A. Karmiloff-Smith et al. *Rethinking Innateness: A Connectionist Perspective on Development*. Cambridge, MA: Bradford Books/MIT Press, 1996.

Fodor, Jerry. *Concepts: Where Cognitive Science Went Wrong*. Oxford: Oxford University Press, 1997.

Fodor, Jerry. *The Language of Thought*. New York: Crowell, 1975.

Fodor, Jerry. *The Mind Doesn't Work That Way: The Scope and Limits of Computational Psychology*. Cambridge, MA: MIT Press, 2000.

Fodor, Jerry. *The Modularity of Mind*. Cambridge, MA: MIT Press, 1983.

Frith, Uta. *Autism: Explaining the Enigma*. Oxford: Blackwell, 1992.

Gallistel, C. R., A. L. Brown, S. Carey, R. Gelman, and F. C. Keil. "Lessons from Animal Learning for the Study of Cognitive Development." In *The Epigenesis of Mind: Essays on Biology and Cognition*, 3–36. Hillsdale, NJ: Lawrence Erlbaum Associates, 1991.

Gleitman, Lila R. "The Structural Sources of Verb Meanings." *Language Acquisition* 1 (1) (1990): 3–55.

Goldman, A. *Simulating Minds: The Philosophy, Psychology, and Neuroscience of Mindreading*. New York: Oxford University Press, 2006.

Gordon, Robert. "Folk Psychology as Simulation." *Mind and Language* 7 (1986): 11–34.

Harman, Gilbert. "Language, Thought, and Communication." *Minnesota Studies in the Philosophy of Science* 7 (1975): 270–298.

Harman, Gilbert. "Psychological Aspects of the Theory of Syntax." *Journal of Philosophy* LXIV (1967): 75–87. In *Innate Ideas*, edited by Stephen P. Stitch. Los Angeles: University of California Press, 1975.

Heal, Jane. "Simulation vs. Theory-theory: What Is at Issue?" In *Objectivity, Simulation, and the Unity of Consciousness*, edited by C. Peacocke. Oxford: Oxford University Press, 1994.

Hume, David. *An Enquiry concerning Human Understanding* (1748). Indianapolis, IN: Hacket Publishing Co., 1977.

Katz, Jerrold J. *The Philosophy of Language*. New York and London: Harper and Row, 1966. Excerpted in *Innate Ideas*, edited by Stephen P. Stitch. Los Angeles: University of California Press, 1975.

Kant, Immanuel. *The Critique of Pure Reason* (1781a/1787b). Translated by Norman Kemp Smith. New York: Macmillan, 1929.

Landau, Barbara, and Lila R. Gleitman. *Language and Experience: Evidence from the Blind Child*. Cambridge, MA: Harvard University Press, 1985.

Leibniz, G. W. F. *New Essays on Human Understanding* (1704). Excerpted in *Innate Ideas*, edited by Stephen P. Stitch. Los Angeles: University of California Press, 1975.

Locke, John. *An Essay concerning Human Understanding* (1689). New York: Oxford University Press, 1979.

Margolis, Eric. "How to Acquire a Concept." *Mind and Language* 13 (1998): 347–369.

Pinker, Steven. *The Blank Slate*. New York: Viking/The Penguin Group, 2002.

Pinker, Steven. *How the Mind Works*. New York: Norton, 1997.

Pinker, Steven. *The Language Instinct*. New York: Harper Collins, 1994.

Plato. *Meno*. Translated by G. M. A. Grube. Indianapolis: Hackett Publishing Co., 1981.

Putnam, Hilary. "The 'Innateness Hypothesis' and Explanatory Models in Linguistics." *Synthese* 17 (1967): 12–22. In *Innate Ideas*, edited by Stephen P. Stitch. Los Angeles: University of California Press, 1975.

Quine, W. v. O. *The Roots of Reference*. La Salle, IL: Open Court, 1973.

Skinner, B. F. *Science and Human Behavior*. New York: The Free Press, 1953.

Skinner, B. F. *Verbal Behavior*. Acton, MA: Copley, 1957.

Snow, C. E. "Mothers' Speech to Children Learning Language." *Child Development* 43 (1972): 459–465.

Spelke, Elizabeth. "Initial Knowledge: Six Suggestions." *Cognition* 50 (1995): 433–447.

Stich, Stephen P., ed. *Innate Ideas*. Los Angeles: University of California Press, 1975.

Wilson, Margaret, ed. *The Essential Descartes*. New York: New American Library, 1969.

Louise M. Antony (2005)

INNER SENSES

The scholastic theory of the inner senses can be viewed as an attempt to explain and classify cognitive abilities shared by human beings and nonrational animals, abilities that go beyond pure sensation and require a certain level of abstraction. Given that capacities such as reason or belief were generally denied to animals beginning in the classical period of Greek philosophy, these powers or faculties of the sensible soul were thought to account for goal-directed or intentional animal behavior as well as memory and dreaming in humans and animals.

Historically, the concept of the inner senses is rooted in Aristotle's (384–322 BCE) remarks on postsensory faculties of the soul in the second and third books of *De Anima* and in *De memoria et reminiscentia*. A model list-

ing three "inner" psychic faculties, assigned to three cerebral ventricles (imagination/front ventricle, intellective faculty/middle ventricle, memory/rear ventricle), stems from the writings of Galen (129–c. 199) and was handed down to medieval thinkers via Nemesius's (fourth century AD) *De natura hominis* (chapter 5) and John Damascene's (c. 675–749) *De fide orthodoxa* (chapters 32–34). St. Augustine (354–430) was the first to use the Latin term *sensus interior*, meaning Aristotle's common sense (*Confessions*, book 1, chapter 17; *vis interior* in book 7, chapter 27).

However, the notion of the inner sense only appears there in its singular form. The tendency to posit a plurality of inner senses was probably most influenced by Avicenna's (980–1037) *Liber de anima sextus de naturalibus* (part 1, chapter 5). The Islamic philosopher lists five inner senses as powers of the apprehensive part of the sensible soul: (1) the common sense (*sensus communis*) combines the forms it receives from the five external senses; (2) the imagination (*imaginatio*) keeps these forms stored; (3) the imaginative power (*vis imaginativa*) combines and separates forms kept in the imagination; (4) the estimative power (*vis aestimativa*) judges perceived salient or of interest (e.g., the sheep that apprehends the perceived wolf as something it should flee from); and (5) the memory (*vis memorialis et reminiscibilis*) keeps these prerational estimations. Although Avicenna gives three- and fourfold classifications as well, this fivefold classification came to be frequently cited in medieval texts.

Albert the Great (Albertus Magnus, c. 1200–1280) uses Avicenna's classification and combines it with a description of the brain and the functions of animal spirits taken from Costa ben Luca's (c. 864–923) *De differentia animae et spiritus* to localize the inner senses. According to Albert the classification reflects different levels of abstraction and corresponds to the grades of subtlety of the animal spirits (*Summa de homine*). The common sense belongs to the same level of abstraction as the five external senses because its function depends on the immediate presence of a perceived object. Nonetheless, it is not counted as an external sense because it does not receive its forms directly from the external object, but from the external senses.

St. Thomas Aquinas (1225–1274) calls the common sense the "root and principle" of the external senses because it joins the different impressions of the external senses and thus combines the raw sense-data to form a unified episode of perceiving an object. Besides the common sense Aquinas's fourfold list of inner senses (*Summa Theologiae*, pars Ia, quaestio 78, articulus 4) includes the imagination (*imaginatio sive phantasia*), the functioning as storage for sensible forms, the estimative power (*vis aestimativa*), and the memory (*vis memorativa*, *memoria sive reminiscentia*). In contrast to Albert and Avicenna, Aquinas—following Averroes (1126–1198)—stresses that in human beings the animal estimative power is replaced by the cogitative power (*vis cogitativa sive ratio particularis*) that accounts for quasi-propositional perception. In modern philosophy the term *inner sense* is used to signify the mind's ability to reflect on its own operations (Locke 1975, Kant 1998).

See also Aristotle; Augustine, St.; Avicenna; Thomas Aquinas, St.

Bibliography

Kant, Immanuel. *Critique of Pure Reason*. Translated and edited by P. Guyer and A. W. Wood. Cambridge, U.K.: Cambridge University Press, 1998.

Kemp, Simon. *Medieval Psychology*. New York: Greenwood, 1990.

Locke, John. *An Essay concerning Human Understanding*, edited by P. H. Nidditch. Oxford: Clarendon, 1975.

Steneck, Nicholas H. "Albert the Great on the Classification and Localization of the Internal Senses." *Isis* 65 (227) (1974): 193–211.

Tellkamp, Jörg Alejandro. *Sinne, Gegenstände und Sensibilia: Zur Wahrnehmungslehre des Thomas von Aquin*. Boston: Brill, 1999.

Wolfson, Harry Austryn. "The Internal Senses in Latin, Arabic, and Hebrew Philosophic Texts." *Harvard Theological Review* 28 (2) (April 1935): 69–133.

Alexander Brungs (2005)

INSTRUMENTALISM

See *Dewey, John; Pragmatism*

INTENSIONAL TRANSITIVE VERBS

A verb is transitive if it takes a direct object and intensional if it exhibits one or more intensionality effects in its direct object. The three main such effects are (i) resistance to interchange of coextensive expressions, such as coreferential names or common nouns that happen to apply to exactly the same objects; (ii) lack of existence entailments even when the direct object is existentially