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Knowledge-How (*forthcoming*). In Duncan Pritchard (ed.) *Oxford Bibliographies in Philosophy* (Oxford Bibliographies Online). New York: Oxford University Press

## **KNOWLEDGE-HOW**

### **INTRODUCTION**

People often assess their actions against standards of success and quality. Appreciating non-accidental more than lucky success, they attach greater value still to ways or methods that preserve it: they care more to know *how to* do things than just to get things right. A notable expansion of the literature on the topic of knowledge-how in 21st-century philosophy, owes much to a disagreement—inspired by Gilbert Ryle—concerning the matter of how knowledge-how should be situated among other types of knowledge. References in this entry begin with a list of overviews, monographs, and collections, followed by selected 20th-century discussions. The last two sections contain sources pertaining to Ryle’s own work on the topic as well as work by other influential thinkers (see [\\*Gilbert Ryle\\*](#)) and themes that are sometimes associated with knowledge-how (see [\\*Related Themes\\*](#)). Importantly, on the approach adopted across the remaining seven sections, contemporary literature on knowledge-how can be usefully reviewed from three perspectives. Firstly, there are generic desiderata for accounts of knowledge-how that comprise interpretation of ascription(s), theoretical characterization(s), and explanatory link(s) between knowledge-how and action (see [\\*Discussions by Generic Desiderata\\*](#)). Asking where particular accounts stand with respect to each of these three desiderata allows one to assess the depth of disagreement on situating knowledge-how among other types of knowledge. This non-normative perspective may be further contrasted with or enriched by normative arguments. Secondly, the literature can be approached from the perspective of specific topics that are already well entrenched in the tradition of particular subdisciplines: for instance, testimony within epistemology (see [\\*Topics in Epistemology\\*](#) and others). This perspective may prove fruitful when assessing the performance of available knowledge-how accounts against the most representative challenges; or, conversely, the challenges may help draft initial characterizations of knowledge-how. It should be noted that problems listed there do not fit exclusively within their subdisciplinary compartments. Indeed, they have occasionally received interdisciplinary treatment (see [\\*\(Theoretical\) Cognitive Science\\*](#)). Finally, on several occasions the disagreement about situating knowledge-how among other types of knowledge has also incited a second-order controversy regarding distinct assumptions and tools employed in the service of its resolution, as well as the commensurability of those assumptions and tools. This metaphilosophical perspective pertains to questions such as which methodologies are most suited to capture salient features of knowledge-how, or to what extent debaters should even hope to find common ground in addressing issues that arise given methodologies they adopt (see [\\*Second-Order Controversy\\*](#)).

### **OVERVIEWS**

In philosophical literature two general positions have been distinguished in the debate over how to situate knowledge-how among other types of knowledge. These are intellectualism and anti-intellectualism. Distinct aspects of the debate as well as subtleties of specific proposals make it difficult to provide definitions of these. In one attempt, an encyclopedic overview, [Fantl 2012](#) characterizes either position as a reaction to a pair of interwoven problems: (1) to what extent

knowledge-how is independent from knowledge-that and (2) what knowledge-how consists in. Most broadly, intellectualists hold that knowledge-how, perhaps non-trivially yet strongly, (1) depends on knowledge-that and that it (2) consists in knowing some relevant fact or proposition pertaining to action. By contrast, viewing knowledge-how as a type of (2) ability to perform action, anti-intellectualists stipulate (1) a high degree of independence of knowledge-how from knowledge-that. In another characterization of intellectualism and anti-intellectualism, [Bengson and Moffett 2012](#) offers a slightly more complex framework, according to which these positions emerge from two distinct conceptions of what is a mental state, its exercise in action, and the ways in which the mental state and its exercise are entangled. In short, intellectualists hold that knowledge-how must at least involve some sort of propositional or conceptual engagement in the way it bears on action, whereas for anti-intellectualists knowledge-how must minimally involve some disposition to be actualized in action. Note that in line with either characterization both intellectualists and anti-intellectualists, even if they are minimalists, must hold on to these respective claims strongly enough to avoid the charge of collapsing into the opposite view. To capture this varying strength of the two claims, a glance at [Bengson 2013](#) will also be helpful; see also Bengson's other less detailed overview under "knowledge-how" subcategory in [\\*\\*PhilPapers\\*\\*](#).

Bengson, John. "Knowledge How vs. Knowledge That [<http://sk.sagepub.com/reference/encyclopedia-of-philosophy-and-the-social-sciences/n193.xml>]" In *Encyclopedia for Philosophy and the Social Sciences*. Edited by B. Kaldis. California: SAGE Publications Inc., 2013. [class:dataSetItem-database]

[Sets the debate between intellectualists and anti-intellectualists against the background of four Rylean theses, urging that intellectualists may want to reject the thesis that knowledge-how is strongly contrastable with knowledge-that, while accepting that the former is not equivalent to the latter.](#)

Bengson, John, and Marc A. Moffett. "Two Conceptions of Mind and Action." In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Mark A. Moffett, 3–56. New York: Oxford University Press, 2012.[class:bookChapter]

[An essay on the debate\(s\) between intellectualists and anti-intellectualists, rich in technical detail. Contains a wealth of remarks and references that will be particularly useful in pursuit of new research directions.](#)

Fantl, Jeremy. "Knowledge How[<http://plato.stanford.edu/archives/fall2014/entries/knowledge-how/>]" In *The Stanford Encyclopedia of Philosophy*. Edited by Edward N. Zalta. 2012.[class:dataSetItem-database]

[A major introductory entry to the topic. Sets the debate against the background of ancient and more recent distinctions. Divides debaters into three types: intellectualists, moderate anti-intellectualists, and radical anti-intellectualists. Draws a distinction between dispositionalist and ability anti-intellectualism.](#)

PhilPapers. \*Knowledge how[<http://philpapers.org/browse/knowledge-how>]\*.[class:dataSetItem-database]

[Contains a short introduction by John Bengson and provides systematically updated online repository of philosophical articles on the topic.](#)

## COLLECTIONS

[Bengson and Moffett 2012](#) provides a collection of fifteen original works on the topic of knowledge-how, which to date is the only exclusive collection of this kind. While not devoted to the topic per se, [Lihoreau 2008](#) and [Tolksdorf 2012](#) contain a few notable knowledge-how articles. Special issue on Jason Stanley's book symposium features a set of important polemical papers on his influential intellectualist proposal (see [Sosa 2012](#)).

Bengson, John, and Marc A. Moffett, eds. *Knowing How: Essays on Knowledge, Mind, and Action*. New York: Oxford University Press, 2012.[class:book]

Organizes discussion into four categories: (1) exegeses of Ryle's works, (2) philosophical and (3) linguistic accounts of knowledge-how, as well as (4) knowledge-how against the background of various research enterprises of different type and scope (e.g., epistemic injustice).

Lihoreau, Franck, ed. *Knowledge and Questions*. Grazer Philosophische Studien. Amsterdam: Brill Academic, 2008. [ISBN: 9789042024755][class:book]

With several important contributions on knowledge-how, this collection helps one understand how the topic intersects with epistemological and linguistic issues concerning inquiry.

Sosa, Ernest, ed. "Book Symposium on Jason Stanley's 'Know How.'" *Philosophy and Phenomenological Research* 85.3 (2012): 733-781.[class:journalArticle]

Contains insightful comments on Stanley's recent work on the topic, including a challenge to the book's account of the relation between knowledge-how and skill.

Tolksdorf, Stefan, ed. *Conceptions of Knowledge*. Berlin Studies in Knowledge Research. Berlin: De Gruyter, 2012. [ISBN: 9783110253580][class:book]

Apart from two important knowledge-how articles, chapter 1 of this collection assembles new and classical pieces (including German translations) linking knowledge to ability. In particular, the chapter juxtaposes ability accounts with related virtue-theoretic accounts of knowledge.

## MONOGRAPHS

Two monographs have been published so far on the topic of knowledge-how: [Hetherington 2011](#) and [Stanley 2011](#). Hetherington draws a broader picture for his radically anti-intellectualist view, whereby not only knowledge-how but also knowledge-that are both treated as an ability. Drawing on ideas from his previous work with Williamson (see [Stanley and Williamson 2001, cited under \\*Intellectualism vs, Anti-Intellectualism](#)), Stanley introduces new themes and arguments to defend the view that knowledge-how is propositional.

Hetherington, Stephen. *How to Know: A Practicalist Conception of Knowledge*. Hoboken, NJ: John Wiley, 2011. [ISBN: 9780470658123][class:book]

A neo-Rylean account aiming not only to provide a radically anti-intellectualist perspective on knowledge altogether but also to undermine several key assumptions of traditional epistemology and provide an alternative to it.

Stanley, Jason. *Know How*. Oxford: Oxford University Press, 2011. [ISBN: 9780199695362][class:book]

Argues for intellectualism and embraces and combines linguistic frameworks that range from Karttunen to Kräzer. This highly technical approach serves to build a complex picture of the metaphysics of knowledge-how.

## 20TH-CENTURY PREDECESSORS

While it is natural to refer directly to [Ryle 1946](#) and [Ryle 1949](#) (see [\\*Gilbert Ryle: Ryle's Works\\*](#)) as the main source of inspiration, antecedents of contemporary intellectualism and anti-intellectualism can also be seen in several polemics that took place after the publication of his works and well before [Stanley and Williamson's 2001](#) article that has revived interest in the topic of knowledge-how. The section provides a selective survey of references to these polemics accompanied by related sources.

### Radical Anti-Intellectualism

One clear-cut antecedent of radical anti-intellectualism (i.e., the view whereby knowledge-that is knowledge-how of a kind) is the exchange between [Hartland-Swann 1956](#), [Hartland-Swann 1957](#) and [Ammerman and MacIver 1956](#) (see also [Adams 1958](#)). For radical anti-intellectualism see [Hetherington 2011](#) (cited under [\\*Monographs\\*](#)), which also points to [White 1982](#). Interestingly, [Hyman 1999](#) inspires an option potentially worth exploring by those who might look after dispositionalist variants of intellectualism of both radical and moderate strands (for a contemporary variant of intellectualism invoking abilities see [Brogaard 2012](#) under [\\*Discussions by Generic Desiderata\\*](#)).

Adams, E. M. "On Knowing That." *Philosophical Quarterly* 8.33 (1958): 300–306.[class:journalArticle]

Discusses two interpretations of "knows that": capacity-dispositional achievement and episodic achievement.

Ammerman, Robert, and A. M. MacIver. "Report on Analysis 'Problem' No. 8." *Analysis* 17.2 (1956): 25–32.[class:journalArticle]

Disputes Hartland-Swann's take on knowing-that, discussing three interpretative variants of the analysis "S has the capacity to state correctly what is the case."

Hartland-Swann, John. "The Logical Status of 'Knowing That.'" *Analysis* 16.5 (1956): 111–115.[class:journalArticle]

Argues that if "to know" is a capacity verb then knowledge-that ascriptions attribute capacities to state correctly that such-and-such is the case. Concludes that knowledge-that is a type of knowledge-how.

Hartland-Swann, John. "'Knowing That': A Reply to Mr. Ammerman." *Analysis* 17.3 (1957): 69–71. [class:journalArticle]

Replies to Ammerman, restricting, in conclusion, his claim that "knowing" is a capacity concept.

Hyman, John. "How Knowledge Works." *Philosophical Quarterly* 49.197 (1999): 433–451.[class:journalArticle]

Puts forward a proposal whereby knowledge is an ability to act, according to which S knows propositionally if S is able to act for reasons-as-facts.

White, Alan R. *The Nature of Knowledge*. Lanham, MD: Rowman and Littlefield, 1982. [ISBN: 9780847670734][class:book]

Distinguishes between two epistemological projects: investigation of claims to knowledge and nature of knowledge. Pursues the latter. Knowledge-how features in chapter 2.

### Linguistically Informed Intellectualism

An important precedent to the disagreement between intellectualists and anti-intellectualists came with the exchange between [Brown 1970](#), [Brown 1974](#) and [Brett 1974](#). Brown made the first

linguistically informed attempt to vindicate the view that knowledge-how just is knowledge-that pertaining to proposition(s) answering the embedded question “how-to” (for contemporary variants of linguistically informed intellectualism inspired by Brown; see listed under various sections [Stanley and Williamson 2001](#) (cited under [\\*Intellectualism vs. Anti-intellectualism\\*](#)), [Stanley 2011](#) (cited under [\\*Links to Action\\*](#)), [Bengson and Moffett 2012](#) (cited under [\\*Intellectualism vs. Anti-Intellectualism\\*](#)) and [Brogaard 2012](#) (cited under [\\*Intellectualism vs. Anti-Intellectualism\\*](#)).

Brett, Nathan. “Knowing How, What and That.” *Canadian Journal of Philosophy* 4.2 (1974): 293–300.[class:journalArticle]

Raises concerns about [Brown 1970](#) to the conclusion that knowledge-how is knowledge-that. questions the presupposition that the agent needs to have a correct answer to an embedded how-question.

Brown, D. G. “Knowing How and Knowing That, What.” In *Ryle, A Collection of Critical Essays*. Edited by Oscar P. Wood and George Pitcher, 213–248. London: Macmillan, 1970. [class:bookChapter]

A polemic with [Ryle 1949](#) (cited under [\\*Gilbert Ryle: Ryle’s Works\\*](#)). Maintains that turning to syntax may bring threefold philosophical pay-offs and help (1) to effectively express semantic issues of relevance, (2) to define criteria for their solution, and (3) to point to philosophical theories that offer both. Concludes that knowledge-how is knowledge-that.

Brown, D. G. “Reply to Brett.” *Canadian Journal of Philosophy* 4.2 (1974): 301–303.[class:journalArticle]

Responds to several objections from [Brett 1974](#).

### **Intellectualism and Anti-Intellectualism**

While not engaged in an exchange, [Carr 1979](#), [Carr 1981](#), [Katzoff 1984](#), and [Steel 1974](#) introduced important issues such as ambiguity and opacity in attributions. Carr’s papers have been particularly influential in the contemporary literature (see [Hawley 2003](#) [cited under [\\*Interpretation of Ascriptions\\*](#)], [Williams 2007](#) [cited under [\\*What Type of Analysis?\\*](#)], or [Bengson and Moffett 2007](#) [cited under [\\*Interpretation of Ascriptions\\*](#)]). Another important although less discussed source is [Parry 1980](#).

Carr, David. “The Logic of Knowing How and Ability.” *Mind* 88.351 (1979): 394–409.[class:journalArticle]

Juxtaposes relational expressions “knows how to” with “is able to.” Favors bring-about analysis of action-descriptions over event analysis. Examines issues concerning substitution *salva veritate*.

Carr, David. “Knowledge in Practice.” *American Philosophical Quarterly* 18.1 (1981): 53–61.[class:journalArticle]

Introduces what may be the first tripartite analysis of knowledge-how in the strong sense (i.e., as calling for some variant of success-condition).

Katzoff, Charlotte. “Knowing How.” *Southern Journal of Philosophy* 22.1 (1984): 61–69.[class:journalArticle]

Disagrees with Carr, holding, inter alia, that knowing how to do something consists in having a kind of theoretical-knowledge of facts.



Parry, Richard D. “Ryle’s Theory of Action in The Concept of Mind.” *Philosophy and Phenomenological Research* 40.3 (1980): 379–392.[class:journalArticle]

Examining different variants of Ryle’s reconstruction of the intellectualist legend, this article argues that Ryle fails to appreciate a deeper “logical problem,” which—to an equal extent—may affect his own positive view.

Steel, Thomas J. “A Puzzle About Knowing How.” *Philosophical Studies* 25.1 (1974): 43–50.[class:journalArticle]

Related to the 1970 paper by Kripke concerning belief attributions, the author discusses opacity for knowledge-how attributions. Holds that the puzzle dissolves if we appreciate a distinction between *de re* and *de dicto* interpretations to knowledge-how attributions.

## DISCUSSIONS BY GENERIC DESIDERATA

The disagreement concerning situating knowledge-how among other types of knowledge may itself be seen as rooted in the quest for one type of knowledge (e.g., *that*, *wh-*, *of*, *how*) that would play the role of the common denominator for all. While radical intellectualists and anti-intellectualists normally share these unificationist ambitions, moderate intellectualists remain agnostic about the possibility of unification across the board, and moderate anti-intellectualists confine themselves to anti-unificationism. However, sole distribution of different positions on the map of the present debate(s) does little to establish the depth of disagreement between them. Three questions can help here: How to interpret knowledge-how ascriptions? How are these interpretations to be elaborated? How do these elaborations connect knowledge-how to action (and what sort of action)? These questions set up three corresponding desiderata for unificationist and anti-unificationist accounts of knowledge-how—*ascriptions*, *theoretical characterization*, and *links to action*.

### Intellectualism vs. Anti-Intellectualism

Stanley and Williamson 2001, Snowdon 2004, and Brogaard 2012 advance variants of the intellectualist unificationist agenda. Hetherington 2011 promotes unification in the anti-intellectualist direction. Focusing primarily on knowledge-how, the non-propositional intellectualists behind Bengson and Moffett 2012 are open to unification but do not take a definite stance. Most moderate anti-intellectualists endorse anti-unificationism (Fridland 2015, Glick 2012). Cath 2015 draws an interesting potentially anti-unificationist picture of intellectualism, whereby features of knowledge-how may be distinct from those of knowledge-that.

Bengson, John, and Marc A. Moffett. “Nonpropositional Intellectualism.” In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 161–195. New York: Oxford University Press, 2012.[class:bookChapter]

Complements of knowledge-how ascriptions capture objects rather than propositions. In principle the proposal is open both to unificationism and the view that objects may be proposition-grounded.

Brogaard, Berit. “Knowledge-How: A Unified Account.” In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 136–160. Oxford: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]

Aims at propositional *wh*-unification in a way that would vindicate intellectualism while preserving the anti-intellectualist ability intuition.

Cath, Yuri. “Revisionary Intellectualism and Gettier.” *Philosophical Studies* 172.1 (2015): 7–27.[class:journalArticle]

Produces arguments to the effect that the intellectualist needs to distinguish between practical knowledge-that and theoretical knowledge-that, the former of two being knowledge-how.

Fridland, Ellen. “Knowing-How: Problems and Considerations.” *European Journal of Philosophy* 23.3 (2015): 703-727 [doi:10.1111/ejop.12000][class:journalArticle]

Arguing that any intellectualist account fails to provide an adequate account of knowledge-how in part because the sort of knowledge is neither conceptual nor propositional, Fridland dismisses the intellectualist unificationist project.

Glick, Ephraim. “Abilities and Know-How Attributions.” In *Knowledge Ascriptions*. Edited by Jessica Brown and Mikkel Gerken, 120-139. Oxford: Oxford University Press, 2012.[class:bookChapter]

Sets out to deny an existential thesis that some intellectualist unificationists endorse, namely, that there is no knowledge-how to  $\phi$  such that it is an ability to  $\phi$ . Contrasts it with the universal thesis (i.e., each kind of knowledge-how to  $\phi$  is a kind of knowledge-that).

Hetherington, Stephen. *How to Know: A Practicalist Conception of Knowledge*. Hoboken, NJ: John Wiley, 2011. [ISBN: 9780470658123][class:book]

Draws contours of a conception whereby any propositional-cum-factual kind of knowledge is knowledge-how, which leads the author to the claim that the nature of all knowledge is practical.

Snowdon, Paul. “The Presidential Address: Knowing How and Knowing That: A Distinction Reconsidered.” *Proceedings of the Aristotelian Society* 104 (2004): 1–29.[class:journalArticle]

Formulates what Snowdon calls the “disjointness” and “capacity” theses of anti-intellectualism. Maintains that neither gains sufficient support to question theoretical uniformity of all “know. . .to. . .” ascriptions.

Stanley, Jason, and Timothy Williamson. “Knowing How.” *Journal of Philosophy* 98.8 (2001): 411–444.[class:journalArticle]

Promotes propositional *wh*-unification. Denies that disposition provides a salient component of an adequate treatment of knowledge-how while admitting knowledge-how is indeed tied to dispositional states.

## Interpretation of Ascriptions

How to interpret ascriptions of the form “S knows how to  $\phi$ ”? This question not only has received different responses from those engaged in the debate but often has been altogether differently approached. [Stanley and Williamson 2001](#) (see also [Stanley 2011](#), [Ginzburg 2012](#), and [Michaelis 2012](#) cited under [\\*Topics in Philosophy of Language: What Type of Framework?\\*](#)) suggests the reading whereby there is a/the way  $w$  such that S knows that  $w$  is the way to  $\phi$ . Thus, they begin with a variant of semantic reduction (see [Brogaard 2012](#) and [Santorio 2016](#)). By contrast, [Hawley 2003](#) recommends a direct move from ascriptions to the more traditional analysis of knowledge-how—one structurally analogous to tripartite (or other n-partite) analyses of knowledge-that in terms of warranted true belief. Starting with the puzzle about knowledge-how attributions, [Bengson and Moffett 2007](#) argues that all types of “knows how to” ascriptions entail attributions of “understands.” Their view contests ambiguity or bifurcation approaches that treat “knows how to” as systematically ambiguous. The latter start by distilling domains of discourse about knowledge-how ascriptions, typically in order to vindicate anti-intellectualism. [Wiggins 2009](#) is the main proponent (see listed under [\\*Gilbert Ryle: Broader Assessments Post-2001\\*](#); see also [Douksos 2013](#) and [Rumfitt 2003](#) listed under [\\*Topics in Philosophy of Language: Cross-Linguistic](#)

Evidence\*). Similarly, granting ambiguities in interpretation [Lihoreau 2008](#) and [Glick 2012](#) attempt to reach the practically relevant scope of “knows how to” attributions by linking them to “learns to.” [Hetherington 2011](#) reverses the order and unpacks “knows that p” in terms of “knows how it is that p.” Thus, generally differences in approaches to the interpretation of ascriptions are a function of two factors (1) the view as to the most natural, *pre-theoretical* interpretation(s) of ascriptions, (2) and the view about the best *toolkit* for handling the interpretation(s). Approaches also vary on the question of priority in both of these approaches.

Bengson, John, and Marc A. Moffett. “Know-How and Concept Possession.” *Philosophical Studies* 136.1 (2007): 31–57.[class:journalArticle]

[Outlines a non-standard route. All knowledge-how ascriptions entail ascriptions of “S understands w.” Argues that entailments to “S is able to  \$\phi\$ ” only hold for select/intellectual activities.](#)

Brogaard, Berit. “Knowledge-How: A Unified Account.” In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 136–160. Oxford: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]

[At the level of ascriptions, this defends a predicative view, whereby there is something such that S knows that it is how to  \$\phi\$ .](#)

Glick, Ephraim. “Abilities and Know-How Attributions.” In *Knowledge Ascriptions*. Edited by Jessica Brown and Mikkel Gerken, 120–139. Oxford: Oxford University Press, 2012. [ISBN: 9780199693702][class:bookChapter]

[On the interpretation suggested by the author, the target construction for knowledge-how attributions is “S knows to”\(i.e., subject-verb-infinitive\).](#)

Hawley, Katherine. “Success and Knowledge-How.” *American Philosophical Quarterly* 40.1 (2003): 19–31.[class:journalArticle]

[Whatever the most relevant analysis of knowledge-how ascriptions might be, the pursuit of structural analogy between the analysis of knowledge-how and knowledge-that naturally highlights conditions of action, success, and warrant.](#)

Hetherington, Stephen. *How to Know: A Practicalist Conception of Knowledge*. Hoboken, NJ: John Wiley, 2011. [ISBN: 9780470658123][class:book]

[Although the subject of the book is the nature of knowledge, the author’s view implies that all knowledge attributions entail complex abilities to produce relevant epistemic outcomes \(see chapter 5 for a radically anti-intellectualist \[practicalist\] analysis of knowledge-that\).](#)

Lihoreau, Franck. “Knowledge-How and Ability.” *Grazer Philosophische Studien* 77.1 (2008): 263–305.[class:journalArticle]

[Considers two available interpretations of ability attributions: ability-entailing and ability-neutral.](#)

Santorio, Paolo. “Nonfactual Know-How and the Boundaries of Semantics.” *Philosophical Review* 125.1 (2016): 35-82.[class:journalArticle]

[Offers a non-factualist semantics of mental content for knowledge-how states, one that emerges from expressivism.](#)

Stanley, Jason, and Timothy Williamson. “Knowing How.” *Journal of Philosophy* 98.8 (2001): 411–444.[class:journalArticle]

[Provides a seminal defense of \*wh\*-ascriptions in terms of embedded questions.](#)



## Theoretical Characterizations

Theoretical characterization, construed broadly here, embraces further commitments concerning knowledge-how that underlie some stipulated interpretation(s) of “S knows how to  $\phi$ ” ascriptions. These may be captured by a particular type of analysis, functional or structural account, and so on. Depending on the agreed toolkit for handling the interpretation(s), a characterization may take the form of traditional tripartite epistemological analysis, analysis in terms of cognitive relation between the agent of a cognitive attitude and some object of that attitude (e.g. action, proposition), straightforward dispositional analysis, and others. Different responses to the question about what is the appropriate theoretical characterization have been largely determined by reactions to the previous question about the interpretation(s) of ascriptions. [Stanley and Williamson 2001](#) permits that their interpretation be fleshed out in a neo-Fregean or neo-Russellian style. According to the former a proposition featuring  $w$  is entertained under a practical mode of presentation (see also [Stanley 2011](#), cited under [\\*Topics in Philosophy of Mind and Philosophical Psychology\\*](#)). [Hawley 2003](#), in a somewhat more generic tone, argues that knowledge-how is a warranted *counterfactually* successful action. [Bengson and Moffett 2012](#) suggests that two issues should be distinguished—the nature of, and the grounds for, knowledge-how. Leaving out the question of grounds for knowledge-how, Bengson and Moffett hold that the answer to what is the nature of knowledge-how is the agent’s standing in the *objectual understanding* relation to the way of  $\phi$ -ing. [Lihoreau 2008](#) attempts to distill the notion of ability that would fit ability-entailing readings of “knows how to,” whereas Hetherington construes “knows how it is that  $p$ ” dispositionally. Interestingly, [Brogaard 2012](#) tries to reconcile her unificationist approach with some variant of bifurcation with respect to theoretical characterization.

Bengson, John, and Marc A. Moffett. “Nonpropositional Intellectualism.” In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 161–195. New York: Oxford University Press, 2012.[class:bookChapter]

“S understands  $w$ ” is construed as an objectual understanding relation between agents and objects, the latter of which are ways of performing actions.

Brogaard, Berit. “Knowledge-How: A Unified Account.” In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 136–160. Oxford: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]

Argues from the disjunctivist account of abilities as either entailing mental states or not. Proposes a view of knowledge-how that is intellectualist in that only mental state-entailing practical abilities count as genuine knowledge-how states.

Hawley, Katherine. “Success and Knowledge-How.” *American Philosophical Quarterly* 40.1 (2003): 19–31.[class:journalArticle]

Hawley argues that her counterfactual success-approach has significant advantages over the dispositionalist-approach.

Hetherington, Stephen. *How to Know: A Practicalist Conception of Knowledge*. Hoboken, NJ: John Wiley, 2011. [ISBN: 9780470658123][class:book]

Maintains that  $p$ -relevant epistemic outcomes such as representing or reasoning accurately are manifestations of a complex ability (see particularly chapter 6).

Lihoreau, Franck. “Knowledge-How and Ability.” *Grazer Philosophische Studien* 77.1 (2008): 263–305.[class:journalArticle]

Distinguishes between theoretical and practical knowledge-how, the former associated with acquired intrinsic ability, the latter—with procedures by which to perform a task.

Stanley, Jason, and Timothy Williamson. “Knowing How.” *Journal of Philosophy* 98.8 (2001): 411–444.[class:journalArticle]

Focusing primarily on the semantics of embedded questions as key to capturing the metaphysics of knowledge-how, authors allow for the choice between Fregean and Russellian frameworks. In the latter, ways provide properties of token events.

### Links to Action

The key aspect of theoretical characterization(s) is how knowledge-how is explanatorily connected with action; more specifically, does a given characterization account for a link between knowledge-how to non-accidentally successful action—and if it does, how and how well does it do that? For instance, [Stanley 2011](#) maintains that knowledge-how is connected to action inasmuch as it guides action when a proposition is entertained under practical mode and additional non-intelligent mechanisms are at play (see [Cath 2015](#) for an extensive discussion). [Setiya 2012](#) objects and recommends that knowledge-how guides action in virtue of ability (see also \*Topics in Theory of Action\*). [Hetherington 2011](#) holds that knowledge-how gets expressed in action more or less strongly ([Lihoreau 2008](#)). On the intellectualist proposal of [Bengson and Moffett 2012](#), knowledge-how *qua* objectual understanding is such that it *can* guide action. [Brogaard 2012](#) stipulates that key to acting on knowledge-how is the correspondence of ability states with relevant internalized procedures (see also [Carr 1981](#), cited under \*[20th-Century Predecessors: Intellectualism and Anti-Intellectualism](#)\*), for a set of useful comments that may be further explored in pursuit of different variants of the connection).

Bengson, John, and Marc A. Moffett. “Nonpropositional Intellectualism.” In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 161–195. New York: Oxford University Press, 2012.[class:bookChapter]

Posits a weak link between knowledge-how and action by overriding ability or success with conceptual grasp of and acquaintance with ways.

Brogaard, Berit. “Knowledge-How: A Unified Account.” In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 136–160. Oxford: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]

Holds that only those abilities that involve mental states are fit to play the role of knowledge-how in action. Leaves open the question of how knowledge-how states must rehearse to fill that role.

Cath, Yuri. “Revisionary Intellectualism and Gettier.” *Philosophical Studies* 172.1 (2015): 7–27.[class:journalArticle]

Discusses variants of connection between knowledge-how and intentional action and offers an elaboration of the notion of action guidance. Gestures at dispositional intellectualism.

Hetherington, Stephen. *How to Know: A Practicalist Conception of Knowledge*. Hoboken, NJ: John Wiley, 2011. [ISBN: 9780470658123][class:book]

Given what the author calls an “epistemic diaspora” for a proposition *p*, knowledge that *p* is an ability that gets expressed by any one or more members of its diaspora; knowing that *p* thus amounts to knowing how to perform certain actions (chapter 2).

Lihoreau, Franck. “Knowledge-How and Ability.” *Grazer Philosophische Studien* 77.1 (2008): 263–305.[class:journalArticle]

Practical knowledge of how to  $\phi$  (in action) is construed as manifestation of an acquired intrinsic ability to  $\phi$ .

Setiya, Kieran. “Knowing How.” *Proceedings of the Aristotelian Society* 112.3 (2012): 285–307.[class:conference proceeding]

Argues that we can vindicate anti-intellectualism for basic intentional actions by combining it with the view that having a disposition to act on one’s intention is what makes knowledge-how robustly epistemic.

Stanley, Jason. *Know How*. Oxford: Oxford University Press, 2011. [ISBN: 9780199695362][class:book]

Holds the view that propositional knowledge guides action given that non-propositional automatic mechanisms enable it (see chapters 1 and 7).

### **Normative Arguments and Arguments from the Normative Character**

The first four sections starting with \*Intellectualism vs. Anti-Intellectualism\* survey references pertaining to non-normative arguments in the debate over knowledge-how as opposed to normative ones. Normative arguments should be distinguished from arguments invoking the normative character of knowledge-how. The former concern of how one ought to construe knowledge-how—for example, if some two competing accounts both offer plausible notions of knowledge-how—then normative arguments involve recommendations as to which of the two notions better meets a stipulated value requirement. The latter exploits the fact that knowledge-how is an appraisal notion. Inspired by [Sosa 2007](#), [Fantl 2008](#) and [Tsai 2011](#) recommend normative rather than non-normative arguments in attempting to settle the debate between intellectualism and anti-intellectualism. Furthermore, both contend that such arguments ultimately favor a sort of Sosa-style intellectualism. By contrast, [Carter and Pritchard 2015c](#) argues that intellectualists (e.g., [Stanley and Williamson 2001](#), cited under \*What Type of Analysis?\*) fail to appreciate that although positive and negative epistemic dependence both threaten the status of knowledge-that as distinctively valuable, neither challenges the status of knowledge-how in this regard. Arguments drawing on the normative character of knowledge-how are often produced by anti-intellectualists such as the authors of [Fridland 2015](#) and [Löwenstein 2012](#) (see also [Ryle 1946](#) and [Ryle 1949](#) under \*Gilbert Ryle\*).

Carter, J. Adam, and Duncan Pritchard. “Knowledge-How and Epistemic Value.” *Australasian Journal of Philosophy* 93.4 (2015c): 440–453. [doi:10.1080/00048402.2014.997767][class:journalArticle]

Argues from twin earth and testimonial cases and concludes that knowledge-how, unlike knowledge-that, accords with cognitive achievement.

Fantl, Jeremy. “Knowing-How and Knowing-That.” *Philosophy Compass* 3.3 (2008): 451–470.[class:journalArticle]

Gestures at a positive account of knowledge-how as (qualitatively) gradable notion with optional necessary conditions ranging from the possibility that S does something to S and knows why w is a way to do something.

Fridland, Ellen. “Knowing-How: Problems and Considerations.” *European Journal of Philosophy* 23.3 (2015): 703–727 [doi:10.1111/ejop.12000] [class:journalArticle]

Defends Ryle’s regress strategy. Begins by asking whether the intellectualists, in their account of knowledge-how, adhere to the ways intelligence predicates are employed.

Löwenstein, David. “Knowledge-How, Linguistic Intellectualism, and Ryle’s Return.” In *Conceptions of Knowledge*. Edited by Stefan Tolksdorf, 269–304. Berlin: De Gruyter, 2012. [ISBN: 9783110253580][class:bookChapter]

Discussing regress arguments in [Ryle 1946](#) and [Ryle 1949](#) (and why some of these threaten [Stanley and Williamson's](#) intellectualism) emphasizes the aspect of evaluation of action according to certain standards.

Sosa, Ernest. *A Virtue Epistemology: Apt Belief and Reflective Knowledge*. Vol. 1. Oxford: Oxford University Press, 2007. [ISBN: 9780199297023][class:book]

While not engaging with issues pertaining to knowledge-how, this offers an interesting option to explore in the debate(s) over knowledge-how.

Tsai, Cheng-Hung. "The Metaepistemology of Knowing-How." *Phenomenology and the Cognitive Sciences* 10.4 (2011): 541–556.[class:journalArticle]

Recommends that the subject of inquiry of epistemology of knowledge-how be the nature and value of practical intelligence.

## TOPICS IN EPISTEMOLOGY

Is knowledge-how sui generis or not? One familiar way to argue for positive and negative answers is by building on generic intuitions about knowledge-how in pursuit of a robust theoretical framework. Another, often complementary, approach consists in connecting these epistemological intuitions with the mainstream epistemology through showcasing knowledge-how's idiosyncratic (or standard) features against the background of familiar epistemological problems for propositional knowledge or other target-type knowledge. The section begins with the generic issues of analysis and reduction, subsequently highlighting problems of epistemic luck, epistemification, knowledge acquisition, and testimony, as well as the problem of criterion. For brief discussions of other problems, one should consult sources referenced under \*Overviews\* (in particular see [Bengson and Moffett 2012](#) for references pertaining to a priori and inferential warrant).

### What Type of Analysis?

Even though the topic has generated interest across virtually all branches of philosophy, it is natural to seek inspiration for theoretical characterizations of knowledge-how by drawing on existing epistemological frameworks. One variant of traditional-style analysis has been offered by [Williams 2007](#) (also see [Carr 1979](#), under \*[20th-Century Predecessors](#)\*; and [Hawley 2003](#), cited under \*[Epistemification](#)\*). This can be compared with an outline of virtue-theoretic approach provided by [Carter and Pritchard 2015a](#). [Stanley and Williamson 2001](#) (see also [Stanley 2011](#), cited under \*[Epistemic Luck](#)\*) depart from analyses of that kind, though the extent to which they do remains an open question. If they view knowledge-that as unanalyzable (in line with [Williamson 2000](#) and its more generic knowledge-first approach), then it seems that knowledge-how—due to its being reducible to knowledge-that—becomes secondarily unanalyzable. Crucially, some debaters have concentrated their efforts on reduction and anti-reduction rather than comprehensive analyses (e.g. [Fridland 2012](#), [Glick 2012](#), [Snowdon 2004](#), [Sgaravatti and Zardini 2008](#)).

Carter, J. Adam, and Duncan Pritchard. "Knowledge-How and Cognitive Achievement." *Philosophy and Phenomenological Research* 91.1 (2015a): 181–199.[class:journalArticle]

Offers an anti-intellectualist analysis of knowledge-how in terms of achievement rather than ability.

Fridland, Ellen. "Problems with Intellectualism." *Philosophical Studies* 165.3 (2012): 879–891.[class:journalArticle]

Challenges the intellectualist analysis of knowledge-how on the grounds that there are mechanisms that cannot be explained away by propositional states.

Glick, Ephraim. "Abilities and Know-How Attributions." In *Knowledge Ascriptions*. Edited by Jessica Brown and Mikkel Gerken, 120–139. Oxford: Oxford University Press, 2012. [ISBN: 9780199693702][class:bookChapter]

Proposes an anti-reductionist approach to knowledge-how as ability-entailing practical knowledge.

Sgaravatti, Daniele, and Elia Zardini. "Knowing How to Establish Intellectualism." *Grazer Philosophische Studien* 77.1 (2008): 217–261.[class:journalArticle]

Provides several detailed arguments against the intellectualists' reduction, focusing on the proposal of Stanley and Williamson 2001; arguments include closure of knowledge-how and its insulation from knowledge-that.

Snowdon, Paul. "The Presidential Address: Knowing How and Knowing That: A Distinction Reconsidered." *Proceedings of the Aristotelian Society* 104 (2004): 1–29.[class:conference proceeding]

Advocates a simple variant of reductive intellectualism according to which all knowledge-how is knowledge-that.

Stanley, Jason, and Timothy Williamson. "Knowing How." *Journal of Philosophy* 98.8 (2001): 411–444.[class:journalArticle]

Offering a broadly syntactico-semantic account of knowledge-how qua propositional knowledge, this article inspires important questions concerning the reductive/non-reductive status of the account.

Williams, John N. "Propositional Knowledge and Know-How." *Synthese* 165.1 (2007): 107–125.[class:journalArticle]

Provides a tripartite analysis of knowledge-how with the following conditions: counterfactual success in virtue of a reliable method that the agent is warranted in believing will usually work under relevant circumstances.

## Epistemic Luck

One familiar way of tracking idiosyncratic (or standard) features of knowledge-how against the background of established epistemological problems for knowledge-that (or other target-type of knowledge) leads through examining (post-Gettier) cases of epistemic luck. Lihoreau 2008 and Poston 2009 argue that—unlike knowledge-that—knowledge-how across a range of cases is immune to epistemic luck. They thereby challenge the opposite claim made by Stanley and Williamson 2001 (see also Stanley 2011 and Brogaard 2012). Cath 2012, Cath 2015, and Carter and Pritchard 2015b insist that the standard intellectualist response to this immunity challenge indeed fails. However, while the former calls for revision of intellectualism, the latter take the supposed failure to speak in favor of anti-intellectualism. (For analogous objections against anti-intellectualism see \*Topics in Theory of Action: Ability and Deviant Causal Chains\* here.)

Brogaard, Berit. "Knowledge-How: A Unified Account." In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 136–160. New York: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]



With reference to scenarios presented by [Cath 2012](#), Brogaard argues that some knowledge states are such that they do not entail belief. These are primitive knowledge-states that carry information pertaining to action-procedures.

Carter, J. Adam, and Duncan Pritchard. "Knowledge-How and Epistemic Luck." *Noûs* 49.3 (2015b): 440–453 [doi:10.1111/nous.12054][class:journalArticle]

Argues that knowledge-how is compatible with environmental as opposed to intervening luck.

Cath, Yuri. "Knowing How Without Knowing That." In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Mark Moffett, 113–135. Oxford: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]

Proposes and discusses three scenarios to the effect that standard propositional intellectualism is false. Sketches "seemings" analysis as a variant of luck-immune intellectualism.

Cath, Yuri. "Revisionary Intellectualism and Gettier." *Philosophical Studies* 172.1 (2015): 7–27.

Extends discussion of luck arguments from previous work (e.g., [Cath 2012](#)). Brings a distinction between upstream and downstream luck into the debate.

Lihoreau, Franck. "Knowledge-How and Ability." *Grazer Philosophische Studien* 77.1 (2008b): 263–305.

Provides an account according to which theoretical knowledge of how to do something is Gettierizable, although practical knowledge is not.

Poston, Ted. "Know How to Be Gettiered?" *Philosophy and Phenomenological Research* 79.3 (2009): 743–747.[class:journalArticle]

A five-page long discussion of epistemic luck in [Stanley and Williamson's 2001](#) proposal, aiming to indicate a general pattern for thinking that knowledge-how is not Gettierizable.

Stanley, Jason, and Timothy Williamson. "Knowing How." *Journal of Philosophy* 98.8 (2001): 411–444.[class:journalArticle]

With some qualifications, this article defends the position that knowledge-how is not immune to epistemic luck.

Stanley, Jason. *Know How*. Oxford: Oxford University Press, 2011. [ISBN: 9780199695362][class:book]

Chapter 8 contains responses to objections raised by [Poston 2009](#) and [Cath 2012](#) to the thesis formulated in the [2001](#) paper.

## Epistemification

Epistemification as construed here covers a range of internalist and externalist variants of condition on knowledge typically labeled "justification" or "reliability," such that, for instance, it accounts for appropriate connection between belief and truth. [Hetherington 2011](#) argues for abandoning epistemological accounts that treat justification as an intrinsic condition on knowledge. However, akin to other debaters he seems to agree that knowledge-how calls for some kind of epistemification, roughly, a stability-feature for knowledge-how. [Hawley 2003](#), which endorses traditional analysis, insists that one condition for knowledge-how be warrant for counterfactually successful action; [Brogaard 2012](#) holds that it requires justificatory ground. But what would epistemification be more specifically? While most anti-intellectualist associate epistemification with abilities (see [Setiya 2012](#) for one option), [Williams 2007](#) favors the notion of Nozickian reliable method. Arguably, [Bengson and Moffet 2012](#) maintains that understanding fills the role of epistemification.

- Bengson, John, and Marc A. Moffett. "Nonpropositional Intellectualism." In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 161–195. New York: Oxford University Press, 2012.[class:bookChapter]  
Proposes a conception of understanding revolving around compositional structure of conceptions mastered by the agent.
- Brogaard, Berit. "Knowledge-How: A Unified Account." In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 136–160. New York: Oxford University Press, 2012. [ISBN: 9780195389364]  
Introduces two kinds of ability as justificatory ground: epistemic and practical. The latter kind provides justificatory ground for knowledge-how.
- Hawley, Katherine. "Success and Knowledge-How." *American Philosophical Quarterly* 40.1 (2003): 19–31.[class:journalArticle]  
Although epistemification is not the primary objective of the paper, the author suggests that a notion of warrant is indispensable in the analysis of knowledge-how.
- Hetherington, Stephen. *How to Know: A Practicalist Conception of Knowledge*. Hoboken, NJ: John Wiley, 2011. [ISBN: 9780470658123][class:book]  
Endorses ability as epistemificator. Discusses knowledge-how as foundational notion and juxtaposes it with certainty (see chapters 2, 4, and 6).
- Setiya, Kieran. "Knowing How." *Proceedings of the Aristotelian Society* 112.3 (2012): 285–307.[class:journalArticle]  
Maintains that knowing-how to do something amounts to one's being disposed to do the something on an intention and when one has that intention.
- Williams, John N. "Propositional Knowledge and Know-How." *Synthese* 165.1 (2007): 107–125.[class:journalArticle]  
Views reliable method as necessary for knowledge-how; the former being that because of which S would succeed, if S tried to  $\phi$ .

### Knowledge Acquisition

One of the most pressing problems in the epistemology of knowledge-how is the problem of knowledge acquisition. Plausibly, if knowledge-how is reducible to knowledge-that or other target-type of knowledge, knowledge-how must be acquired in the same ways as the target-type of knowledge. This has been contested by many studies, among them [Fridland 2015](#), [Glick 2012](#), [Lihoreau 2008](#), and [Noe 2005](#). [Hawley 2010](#) resists this tendency. Engaging with the issue of testimony for knowledge-how, Hawley implies that the intellectualist account of Stanley and Williamson can easily handle the problem of acquisition for knowledge-how.

- Fridland, Ellen. "Knowing-How: Problems and Considerations." *European Journal of Philosophy* 23.3 (2015): 703-727 [doi:10.1111/ejop.12000][class:journalArticle]  
Maintains that [Stanley and Williamson 2001](#) (cited under \*Epistemic Luck\*) fails to provide an adequate view of knowledge acquisition because it remains mysterious how practical modes of presentation relate to learning.
- Glick, Ephraim. "Abilities and Know-How Attributions." In *Knowledge Ascriptions*. Edited by Jessica Brown and Mikkel Gerken, 120–139. Oxford: Oxford University Press, 2012. [ISBN: 9780199693702][class:bookChapter]  
Develops an argument to the effect that if abilities rather than propositions are products of learning, then intellectualism is false.

Hawley, Katherine. "Testimony and Knowing How." *Studies in History and Philosophy of Science* 41.4 (2010): 397–404.[class:journalArticle]

Considers different variants of knowledge-how acquisition, contesting the benefits of speaking about testimonial type of knowledge-how.

Lihoreau, Franck. "Knowledge-How and Ability." *Grazer Philosophische Studien* 77.1 (2008): 263–305.[class:journalArticle]

Develops an account where only possession of an acquired intrinsic ability makes it count as practical knowledge-how; although the way in which ability has been acquired is irrelevant.

Noë, Alva. "Against Intellectualism." *Analysis* 65.4 (2005): 278–291.[class:journalArticle]

Views graduality as a vital feature distinguishing the acquisition of skill from the acquisition of propositional knowledge.

### **The Problem of the Criterion and the Skeptical Challenge**

If [Hetherington 2008](#) and [Hetherington 2012](#) are correct, then his radical neo-Rylean anti-intellectualism leads to the dissolution of two interwoven problems—the problem of the criterion and the Humean skeptical challenge, the latter being the offshoot of a particular instance of the former (i.e., causation and induction). While seldom mentioned in the literature, the problem of the criterion—along with the skeptical challenge inspired by Hume—lies at the heart of the epistemological disagreement between intellectualists and anti-intellectualists about knowledge-how. For a discussion of the problem of the criterion see [McCain 2015](#).

Hetherington, Stephen. "Not Actually Hume's Problem: On Induction and Knowing-How." *Philosophy* 83.04 (2008): 459–481.[class:journalArticle]

Proposes a reading of Hume's response to the challenge of inductive skepticism through the lens of Ryle.

Hetherington, Stephen. "Knowledge and Knowing: Ability and Manifestation." In *Conceptions of Knowledge*. Edited by Tolksdorf Stephan, 73-99. Berlin: De Gruyter, 2012. [ISBN: 9783110253580][class:bookChapter]

While distinguishing the problem of the criterion from those yielding skeptical challenges, this chapter proposes the same neo-Rylean way of dissolving it.

McCain, Kevin. "\*Problem of the Criterion[http://www.iep.utm.edu/criterio/]\*." In *The Internet Encyclopedia of Philosophy*. Edited by Bradley Dowden and James Fieser. 2015. [class:dataSetItem-database]

An extensive discussion of the problem of the criterion that links it to other epistemic problems such as Cartesian circle or easy knowledge.

### **TOPICS IN PHILOSOPHY OF MIND AND PHILOSOPHICAL PSYCHOLOGY**

Contemporary philosophers of mind typically associate knowledge-how with ability hypothesis. However, as a subject of study in its own right, knowledge-how raises a multitude of issues falling under the broad category of philosophical psychology. This reference section revolves around several of those issues (i.e., states, skills, and practical modes).

#### **Mental State or Not?**

Most general questions concerning knowledge-how are whether it is a kind of mental state (or to what extent it might be) and—providing an affirmative answer—what kind of state it is. [Bengson and Moffett 2012](#) envisages both intellectualists and anti-intellectualists as agreeing with the thesis

that knowledge-how at least involves mental states, something that [Snowdon 2004](#) stipulates ([Carter and Czarnecki 2015](#)). It is worth noting here, following [Nagel 2013](#) and its generic discussion of knowledge as mental state, that approaches will vary depending on how knowledge-how and mental states are individuated. For instance, propositional states may pertain to ways that practically relate to actions ([Stanley 2011](#)). This raises further questions concerning direction of fit (e.g., [Kumar 2011](#)), granularity (e.g., [Fridland 2012](#)) as well as modals (e.g., [Hawley 2003](#)). Whether knowledge-how—and whether it should count as a mental state or not—is dispositional or occurrent provides another factor to be taken into account.

Bengson, John, and Marc A. Moffett. “Two Conceptions of Mind and Action.” In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Mark A. Moffett, 3–56. New York: Oxford University Press, 2012.[class:bookChapter]

Granting that knowledge-how is a mental state, the authors provide a general framework for understanding how intellectualist and anti-intellectualists may conceive of the state in question.

Carter, J. Adam, and Bolesław Czarnecki. “Extended Knowledge-How.” *Erkenntnis* (1–15 June 2015). [doi:10.1007/s10670-015-9738-x][class:journalArticle]

Indicates a way to make intelligible the view that abilities are mental states.

Fridland, Ellen. “Problems with Intellectualism.” *Philosophical Studies* 165.3 (2012): 879–891.[class:journalArticle]

Examining the issue of individuation of ways, this study considers the problem of granularity and, particularly, how fineness or coarseness affects the role of non-intelligent mechanisms posited by [Stanley 2011](#).

Hawley, Katherine. “Success and Knowledge-How.” *American Philosophical Quarterly* 40.1 (2003): 19–31.[class:journalArticle]

Author’s notion of counterfactual success provides one of the key inspirations to an extensive discussion of modal force in [Stanley 2011](#).

Kumar, Victor. “In Support of Anti-Intellectualism.” *Philosophical Studies* 152.1 (2011): 135–154.[class:journalArticle]

Views knowledge-how as non-motivational mental state with world-to-mind direction of fit.

Nagel, Jennifer. “Knowledge as a Mental State.” In *Oxford Studies in Epistemology*. Edited by Tamar Szabó Gendler and John Hawthorne, 272–308. Vol. 4. Oxford: Oxford University Press, 2013. [ISBN: 9780199672707][class:bookChapter]

Provides an extensive discussion of literature on the notion of knowledge in psychology and philosophy as well as reasons why some proponents construe knowledge as a mental state.

Snowdon, Paul. “The Presidential Address: Knowing How and Knowing That: A Distinction Reconsidered.” *Proceedings of the Aristotelian Society* 104 (2004): 1–29.[class:conference proceeding]

Holds that knowledge-how is a mental state—and particularly a propositional mental state.

Stanley, Jason. *Know How*. Oxford: Oxford University Press, 2011. [ISBN: 9780199695362][class:book]

Advocates what may be the most complex view of mental states in the debate on knowledge-how (chapters 3–5); the view meshes with the account of syntax and semantics of ascriptions endorsed by the author.

## Knowledge Argument and Ability Hypothesis

[Jackson 1986](#) and its famous knowledge argument against physicalism has seen numerous defenses and objections, notably an objection dubbed “the ability hypothesis” (see also \*Cognitive Ability: Philosophy of Mind\*). [Nida-Rümelin 2009](#) offers an extensive overview of those physicalist and antiphysicalist objections. One vital contribution to this particular angle of the debate between intellectualism and anti-intellectualism comes from [Cath 2009](#), which argues for an interpretation of Stanley and Williamson’s intellectualist proposal that renders the view compatible with the ability hypothesis. Another is due to [Brogaard 2012](#) (see also [Tye 2012](#)).

Brogaard, Berit. “Knowledge-How: A Unified Account.” In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 136–160. New York: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]

Argues that by incorporating ability predication the intellectualist can effectively maintain that the protagonist of the knowledge-argument scenario, Mary, acquires propositional knowledge.

Cath, Yuri. “The Ability Hypothesis and the New Knowledge-How.” *Noûs* 43.1 (2009): 137–156.[class:journalArticle]

An article linking the contemporary debates, where knowledge-how provides the central topic, with the knowledge argument—and broader debates concerning physicalism and qualia—where the topic is merely peripheral.

Jackson, Frank. “What Mary Didn’t Know.” *Journal of Philosophy* 83.5 (1986): 291–295.[class:journalArticle]

Contains a classical articulation of knowledge argument.

Nida-Rümelin, Martine. “\*Qualia: The Knowledge Argument[<http://plato.stanford.edu/archives/sum2015/entries/qualia-knowledge>]\*.” In *The Stanford Encyclopedia of Philosophy*. Edited by Edward N. Zalta. 2009.[class:dataSetItem-database]

A major entry that compiles and discusses mainstream literature on the knowledge-argument.

Tye, Michael. “Knowing What It Is Like.” In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 300–313. New York: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]

With reference to recent literature on knowledge-how, the author draws a distinction between object-knowledge being knowledge of phenomenal character of experience and fact-knowledge—knowledge of what experience is like.

## Knowledge-How, Skill, and Expertise

Knowledge-how has long been connected to notions of skill and expertise. [Dreyfus 2002](#) provides the most vivid anti-intellectualist (i.e., non-representational) characterizations of the latter two. [Stanley 2011](#) objects, relating skill to propositional knowledge. [Dickie 2012](#) scrutinizes Stanley’s account, and both his and Dreyfus’s are criticized by [Fridland 2014](#), which further insists on the indispensability of the notion of control in analyses of skill and knowledge-how. [Buskell 2015](#) offers a critical assessment of Fridland’s position on skill and then draws a complementary proposal. [Annas 2012](#) juxtaposes the notion of practical expertise with the phenomenon of “knack” to provide further insights—largely inspired by the ancient philosophers—concerning ability and knowledge-how. (See also [Toribio 2008](#) and [Stanley and Krakauer 2013](#) cited under \*([Theoretical Cognitive Science](#))\*).



- Annas, Julia. "Practical Expertise." In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 101–112. New York: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]  
 Outlines a dynamic-developmental approach to practical expertise comprising two conditions: learning and striving to improve.
- Buskell, Andrew. "How to Be Skilful: Opportunistic Robustness and Normative Sensitivity." *Synthese* 192.5 (2015): 1445–1466.[class:journalArticle]  
 Argues that despite its advantages Fridland's proposal only covers the class of motor skills, and it precludes the application of certain kind of propositional cues in exercises of skill.
- Dickie, Imogen. "Skill Before Knowledge." *Philosophy and Phenomenological Research* 85.3 (2012): 737–745.[class:journalArticle]  
 Reconstructs the [Stanley 2011](#) argument for intellectualism and presents two objections, one being that some propositional knowledge might be manifested in action yet without guiding it.
- Dreyfus, Hubert L. "Intelligence without Representation – Merleau-Ponty's Critique of Mental Representation: The Relevance of Phenomenology to Scientific Explanation." *Phenomenology and the Cognitive Sciences* 1.4 (2002): 367–383.[class:journalArticle]  
 Takes a radically anti-representationalist approach to learning and skillful action, exploring Merleau-Ponty's notions of intentional arc and maximal grip.
- Fridland, Ellen. "They've Lost Control: Reflections on Skill." *Synthese* 191.12 (2014): 2729–2750.[class:journalArticle]  
 Levels objections against Dreyfus's and Stanley's respective accounts of skill as ignoring the problem of control. Distinguishes strategic control, top-down attention, and motor control.
- Stanley, Jason. *Know How*. Oxford: Oxford University Press, 2011. [ISBN: 9780199695362][class:book]  
 Chapter 8 discusses the ramifications of the author's propositional account of knowledge-how for the notions of expertise and skillful action.

### Practical Mode of Presentation

One of the key and notoriously controversial contributions of [Stanley and Williamson 2001](#) (see also [Stanley 2011](#)) to the debate on knowledge-how is the tentative intellectualist claim that for a given proposition to pertain to knowledge-how it may well need to be entertained under the practical mode of presentation (PMP). Following critical comments by [Schiffer 2002](#) and [Koethe 2002](#), this claim has been challenged by many: for instance, [Noë 2005](#), [Rosefeldt 2004](#), and [Zardini 2013](#). [Glick 2015](#) provides a dedicated elaboration and assessment of PMP.

- Glick, Ephraim. "Practical Modes of Presentation." *Noûs* 49.3 (2015): 538–559.[class:journalArticle]  
 Examines distinct conceptual markers of PMP; reviews potential lines of defense to conclude that for any proposition p pertaining to an activity, one can know p only if one knows how to do the activity to which p pertains.
- Koethe, John. "Stanley and Williamson on Knowing How." *The Journal of Philosophy* 99.6 (2002): 325–328.[class:journalArticle]  
 Argues that explanation of PMP is circular.
- Noë, Alva. "Against Intellectualism." *Analysis* 65.4 (2005): 278–291.[class:journalArticle]  
 Provides a brief argument against the analogy between practical and first-personal modes of presentation.

Rosefeldt, Tobias. “Is Knowing-how Simply a Case of Knowing-that?” *Philosophical Investigations* 27.4 (2004): 370–379.[class:journalArticle]

[Argues that practical mode discourse amounts to ability discourse in disguise.](#)

Schiffer, Stephen. “Amazing Knowledge.” *The Journal of Philosophy* 99.4 (2002): 200–202.[class:journalArticle]

[Protests that PMPs are not intelligible.](#)

Stanley, Jason, and Timothy Williamson. “Knowing How.” *Journal of Philosophy* 98.8 (2001): 411–444.[class:journalArticle]

[Introduces PMPs by drawing an analogy with first-person modes. Juxtaposes this neo-Fregean component with a distinct neo-Russellian alternative.](#)

Stanley, Jason. *Know How*. Oxford: Oxford University Press, 2011. [ISBN: 9780199695362][class:book]

[Attempts a clarification and defense of PMP in chapter 5.](#)

Zardini, Elia. “Knowledge-How, True Indexical Belief, and Action.” *Philosophical Studies* 164.2 (2013): 341–355.[class:journalArticle]

[Formulates and discusses over- and undergeneration problems for Stanley and Williamson’s intellectualism. Holds that taken together these problems reveal general instability of intellectualist proposals.](#)

## TOPICS IN THEORY OF ACTION

While the main concern for the philosophy of mind is how to characterize knowledge-how as mental state—should it qualify as such—philosophy of action begins by asking: what kind of action is the target? Among numerous issues that arise in relation to this question, debaters have typically focused on opacity, deviant causal chains, and basic actions. Closely connected themes may also be found in another entry (see: \*Practical Reason: Motivation and Action\*)

### What Type of Action?

In one way or another knowledge-how is explanatorily tied to action. Inspired by G. E. M. Anscombe and Donald Davidson, philosophers of action highlight actions with intentional qualification, frequently theorizing about the “distance” between actions and that which various intentional qualifications carry—one’s *intentional* action, *intention* in one’s action, and *intention for* one’s future action. These issues bear on the debate between intellectualists and anti-intellectualists about knowledge-how, and they have already attracted some attention. For instance, with respect to intentional action, [Stanley 2011](#) (see also [Stanley and Williamson 2001](#), cited under \*Epistemic Luck\*) holds that it involves knowing-how and hence propositional knowledge, the view contested by [Setiya 2012](#). The latter teases out non-propositional character of basic knowledge-how. Both Setiya’s and Stanley’s proposals are discussed by [Cath 2015](#). Importantly, actions allow a variety of qualifications other than intentional. This is reflected in some post-Rylean discussions concerning knowledge-how and action, where qualifications such as skillful or—in a restricted sense—intelligent have been embraced; see [Fridland 2015](#) and [Sax 2010](#).

Cath, Yuri. “Revisionary Intellectualism and Gettier.” *Philosophical Studies* 172.1 (2015): 7–27.[class:journalArticle]

[With particular focus on the contrast between orthodox and revisionary intellectualism, the author discusses the thesis that knowledge-how is a precondition of intentional action.](#)

Fridland, Ellen. “Knowing-How: Problems and Considerations.” *European Journal of Philosophy* 23.3 (2015): 703-727 [doi:10.1111/ejop.12000][class:journalArticle]

Maintains that intellectualist anti-regress strategies must handle actions qualified as intelligent as well as intentional.

Sax, Greg. “Having Know-How: Intellect, Action, and Recent Work on Ryle’s Distinction between Knowledge-How and Knowledge-That.” *Pacific Philosophical Quarterly* 91.4 (2010): 507–530.[class:journalArticle]

Interprets Ryle’s use of “knowledge-how” as “philosophically idiomatic” (e.g., expertise that yields intelligent performance).

Setiya, Kieran. “Knowing How.” *Proceedings of the Aristotelian Society* 112.3 (2012): 285–307.[class:journalArticle]

Agrees with [Stanley 2011](#) that intentional action is tied to knowledge-how; however, Setiya denies that basic knowledge-how is propositional.

Stanley, Jason. *Know How*. Oxford: Oxford University Press, 2011. [ISBN: 9780199695362][class:book]

Discusses knowledge of action and intending to do something without believing that one will. Defends the principle that if S is doing something intentionally, S either knows how to do it or is doing it by doing other things that s/he knows how to do (see chapter 8).

## Descriptions and Opacity

A problem inherited from [Carr 1981](#) and [Steel 1974](#) (cited under *\*Intellectualism and Anti-Intellectualism\**) is whether or not knowledge-how descriptions are opaque and if they are, how to account for that (see *\*20th-Century Predecessors\** for these and other references). Most roughly, in knowledge-how discussions, two descriptions are opaque if sentences with “knowledge-how” cannot be substituted with other purportedly equivalent sentences in a way that preserves the truth of the former. [Hawley 2003](#), [Lihoreau 2008](#), and [Williams 2007](#) feature more recent remarks on this score, with particular focus on substitutions of “is able to” for “know-how.”

Hawley, Katherine. “Success and Knowledge-How.” *American Philosophical Quarterly* 40.1 (2003): 19–31.[class:journalArticle]

Holds that the counterfactual success condition for knowledge-how presupposes trying. Since the latter entails intentional action knowledge-how descriptions are opaque.

Lihoreau, Franck. “Knowledge-How and Ability.” *Grazer Philosophische Studien* 77.1 (2008): 263–305.[class:journalArticle]

On the author’s conception of knowledge-how, practical knowledge contexts are transparent whereas theoretical knowledge contexts are opaque.

Williams, John N. “Propositional Knowledge and Know-How.” *Synthese* 165.1 (2007): 107–125.[class:journalArticle]

Criticizes Hawley’s case for opacity. Argues that, unlike ability contexts, knowledge-how contexts are opaque.

## Ability and Deviant Causal Chains

Gettier-inspired epistemic luck scenarios for knowledge-how purport to show that propositional knowledge does not suffice for knowledge-how, and so the latter is irreducible to the former. Somewhat analogously, some cases of deviant causal-chain scenarios purport to show insufficiency of ability for knowledge how, one difference being that luck scenarios trade on

*accidentality* whereas deviant causal chains exploit *reliability*. Bengson and Moffett 2012 delivers an experiment to the effect that ability may be causally connected to performance in a way that falls short of knowledge-how manifested in action. At the same time their example purports to show that the right connection must be established between performance and an appropriate intellectual conception thereof. For a related discussion see Setiya 2012, which attempts to provide an account that—with respect to a certain class of actions called “basic”—may be seen as attempting to establish anti-intellectualism for intentional actions (see also Setiya 2008 and Paul 2009).

Bengson, John, and Marc A. Moffett. “Nonpropositional Intellectualism.” In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 161–195. New York: Oxford University Press, 2012.[class:bookChapter]

Contains an example of Irina (an ice-skater with neurological abnormalities) along with other different examples against the sufficiency of ability for knowledge-how.

Paul, Sarah K. “Intention, Belief, and Wishful Thinking: Setiya on ‘Practical Knowledge.’” *Ethics* 119.3 (2009): 546–557.[class:journalArticle]

Critically comments on Setiya 2008.

Setiya, Kieran. “Practical Knowledge.” *Ethics* 118.3 (2008): 388–409.[class:journalArticle]

Provides an example aiming to undermine an unqualified principle endorsed by Stanley and Williamson 2001 (cited under \*Epistemic Luck\*), namely, that if S is doing something intentionally, then S knows how to do it.

Setiya, Kieran. “Knowing How.” *Proceedings of the Aristotelian Society (Hardback)* 112.3 (2012): 285–307.[class:journalArticle]

A subtle account of knowledge-how flavored with Ascombian conception of will. Initially draws on the case explored in Setiya 2008.

## Basic Actions

Following the early work of Danto, several philosophers have occasionally attempted to demonstrate that the notion of knowledge-how and that of basic action are importantly related. Opinions diverge significantly. Setiya 2012 holds that most interesting cases of knowledge-how in action are those where one knows how to do something such that it cannot be done by doing something else. Snowdon 2004 disagrees, maintaining that one cannot intelligibly ascribe knowledge-how whose object would be a basic action. For controversies around the notion of basic action see Sneddon 2001.

Setiya, Kieran. “Knowing How.” *Proceedings of the Aristotelian Society (Hardback)* 112.3 (2012): 285–307.[class:journalArticle]

Grants the possibility of basic intentional actions and argues for the following thesis: if S is intentionally doing something that is a basic action, then S knows-how to do it, where S’s knowledge-how is non-propositional.

Sneddon, Andrew. “Does Philosophy of Action Rest on a Mistake?” *Metaphilosophy* 32.5 (2001): 502–522.[class:journalArticle]

Surveys and challenges several major accounts of basic actions from Danto onward: particularly, Davidson and Hornsby. Gestures at a non-foundationalist account.

Snowdon, Paul. "The Presidential Address: Knowing How and Knowing That: A Distinction Reconsidered." *Proceedings of the Aristotelian Society* 104 (2004): 1–29.[class:conference proceeding]

Maintains that it is inappropriate to attribute knowledge-how to do something where the something counts as basic action; because basic actions not describable as performed in a certain way.

## TOPICS IN PHILOSOPHY OF LANGUAGE

The philosophy of language front of the debate over knowledge-how has either explicitly attracted (or has been enclosed within) numerous more specific disagreements. Two dominant problems among philosophers of language concerned with knowledge-how ascriptions comprise: (1) the best formal approach to those ascriptions; and (2) whether such an approach supports unificationism or anti-unificationism.

### What Type of Framework?

Radically anti-intellectualist strand of unificationism aside, unificationists about knowledge-how have attempted to vindicate the thesis that knowledge-how depends on knowledge-that by offering holistic formal treatments of all knowledge ascriptions. This trend came with Brown's first linguistically informed attempt to unpack knowledge-how ascriptions as embedded *wh*-questions (listed under \*20th-Century Predecessors: Linguistically Informed Intellectualism\*). His followers include Stanley 2011, endorsing so-called standard view and Brogaard 2012 advocating a "predicate" view. Ginzburg 2012 and Michaelis 2012 offer what might be called non-standard approaches, the former explicitly objecting to unification.

Brogaard, Berit. "Knowledge-How: A Unified Account." In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 136–160. New York: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]

On this alternative to the standard approach *wh*-complements are construed as predicate nominals denoting relevant properties as opposed to true answers to an embedded question.

Ginzburg, Jonathan. "How to Resolve 'How To.'" In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 215–243. New York: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]

A highly technical piece that introduces distinct challenges both to intellectualism and anti-intellectualism.

Michaelis, Laura A. "Knowledge Ascription by Grammatical Construction." In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 261–279. Oxford: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]

Challenges both intellectualism and Rylean anti-intellectualism, arguing, inter alia, that infinitive-complement constructions expresses a person-procedure relation.

Stanley, Jason. *Know How*. Oxford: Oxford University Press, 2011. [ISBN: 9780199695362][class:book]

Provides an extremely nuanced account of knowledge-how that initially draws on now-classical work in linguistics by Karttunen as well as Groenendijk and Stokhof.



## Knowledge-*wh* and Knowledge-*that*

Setting aside the predicate view, even if knowledge-how ascriptions may be *propositionalised*, the issue remains whether knowledge-*wh* ascriptions are subject to a reductive treatment in terms of knowledge-*that* ascriptions. This is but one of the issues pertaining the question what type of relation is the *wh*-relation (e.g., two place knowledge-relation as suggested by [Kallestrup 2009](#), or three place knowledge-relation as in [Schaffer 2007](#)) and what is the object of that relation (e.g., propositions or sets thereof; see [Schroeder 2012](#) for the latter option). For a symposium on knowledge-*wh* see [Sosa 2009](#).

Kallestrup, Jesper. “Knowledge-Wh and the Problem of Convergent Knowledge.” *Philosophy and Phenomenological Research* 78.2 (2009): 468–476.[class:journalArticle]

Argues that the contrastivist argument from convergent knowledge not only fails to refute reductionism about knowledge-*wh* ascriptions, but provides a two-edged sword.

Schaffer, Jonathan. “Knowing the Answer.” *Philosophy and Phenomenological Research* 75.2 (2007): 383–403.[class:journalArticle]

Endorses a moderate non-reductivist view, whereby the problem of convergent knowledge undermines reductionism.

Schroeder, Mark. “Showing How to Derive Knowing How.” *Philosophy and Phenomenological Research* 85.3 (2012): 746–753.[class:journalArticle]

Argues that although Groenendijk and Stokhof’s account of answers to embedded questions works fine for mention-all readings, [Stanley 2011](#) (cited under \*Monographs\*) errs in supposing that it will similarly apply to mention-some readings.

Sosa, Ernest, ed. “Symposium on Knowledge Wh-.” *Philosophy and Phenomenological Research* 78.2 (2009). Hoboken, NJ: Wiley.[class:journalArticle]

A discussion with Brogaard’s and Kallestrup’s comments and Schaffer’s replies.

## Cross-Linguistic Evidence

An interesting angle to the philosophy of language dimension of the debate concerns cross-linguistic variations in constructions that pertain to knowledge-how ascriptions. Although the issue touches on the extent to which natural language should bind metaphysics, cross-linguistic data has been thought to pose a threat to the view of [Stanley and Williamson 2001](#) (cited under \*Epistemic Luck\*). Particularly, philosophers such as [Douskos 2013](#), [Ginzburg 2012](#), and [Rumfitt 2003](#) raise doubts as to treating *wh*- constructions as paradigm for further analysis of knowledge-how. Attempts to respond to some objections may be found in the later work of [Stanley 2011](#).

Douskos, Christos. “The Linguistic Argument for Intellectualism.” *Synthese* 190.12 (2013): 2325–2340.[class:journalArticle]

The author questions the plausibility of intellectualism primarily by focusing on relevant ascriptions in modern Greek; presents methodological concerns as well.

Ginzburg, Jonathan. “How to Resolve ‘How To.’” In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 215–243. New York: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]

Provides a rich sample of cross-linguistic evidence to the effect that “knows” may be complemented by several distinct types of abstract entity, ability being among them.

Rumfitt, Ian. “Savior Faire.” *Journal of Philosophy* 100.3 (2003): 158–166.[class:journalArticle]

In the contemporary debates, the first explicit statement of the desideratum that if one engages in the inquiry about the nature of knowledge, rather than mere semantics of “knows how to,” then one must look at analogous constructions in other languages.

Stanley, Jason. *Know How*. Oxford: Oxford University Press, 2011. [ISBN: 9780199695362][class:book]

Chapter 6 includes Stanley’s response to certain challenges from Rumfitt (and Wiggins 2009). Considers another methodological challenge whereby an analysis of ascriptions does not reveal the nature of knowledge-how states.

## (THEORETICAL) COGNITIVE SCIENCE

Whether taken as a central or only complementary notion, knowledge-how has been employed in various enterprises—within and without philosophy—with cognition-action agendas. For instance, Bzdak 2008, Toribio 2008, and Young 2008 have demonstrated interest in what might be called minimal knowledge-how, drawing on case studies from neuroscience. Others (Adams 2008 and Wallis 2008) have taken a broader interdisciplinary outlook, synthesizing theoretical insights from cognitive psychology and artificial intelligence. A useful overview of these and other references may be found in Bengson and Moffett 2012 (listed under \*Overviews\*). Importantly, although most of philosophers adducing empirical data and/or adopting frameworks from cognitive sciences have sought to undermine (linguistic) intellectualism, the view has been recently defended by Stanley and Krakauer 2013.

Adams, Marcus P. “Empirical Evidence and the Knowledge-That/knowledge-How Distinction.” *Synthese* 170.1 (2008): 97–114.[class:journalArticle]

Critical of both intellectualism and radical anti-intellectualism, adopts a double-dissociation view. Adduces the case of patient H. M. (who was subject to bilateral resection of medial temporal lobes resulting in damage to hippocampus) among others.

Bzdak, David. “On Amnesia and Knowing-How.” *Techné: Research in Philosophy and Technology* 12.1 (2008): 36–47.[class:journalArticle]

Focusing on the patient H. M. case, this article argues that the case provides strong evidence against Stanley and Williamson’s intellectualism.

Stanley, Jason, and John W. Krakauer. “Motor Skill Depends on Knowledge of Facts.” *Frontiers in Human Neuroscience* 7 (January 2013): 503. [doi:10.3389/fnhum.2013.00503][class:journalArticle]

Attempts to rehabilitate intellectualism in the cognitive-science literature. Argues that motor-skill does depend on factual-knowledge, after all. Discussion revolves around the patient H. M. case.

Toribio, Josefa. “How Do We Know How?” *Philosophical Explorations* 11.1 (2008): 39–52.[class:journalArticle]

Criticizes Stanley and Williamson 2001 (cited under \*Epistemic Luck\*). Holds that neither personal nor sub-personal level line of defense of their account of entertaining a proposition would work. Appeals to the patient D. F.—suffering from visual-form agnosia—and other cases.

Wallis, Charles. “Consciousness, Context, and Know-How.” *Synthese* 160.1 (2008): 123–153.[class:journalArticle]

A robustly interdisciplinary piece challenging the views of Carr 1979, Carr 1981 (both cited under \*Intellectualism and Anti-Intellectualism\*), and Stanley and Williamson 2001 (cited under \*Epistemic Luck\*) that also offers a four-condition model of knowledge-how.

Young, Garry. “Case Study Evidence for an Irreducible Form of Knowing How to: An Argument Against a Reductive Epistemology.” *Philosophia* 37.2 (2008): 341–360.[class:journalArticle]  
Discussing the case of patient D. F. argues that the subject’s actions are knowledge based and intentional yet propositionally unaffected; this vindicates postulating a minimal type of non-intellectualist knowledge-how.

## SECOND-ORDER CONTROVERSY

Intellectualists and ant-intellectualists dispute the place of knowledge-how among other types of knowledge. But do they know how to run this dispute? At this point a metaphilosophical debate begins. The debate has two interwoven aspects—(1) the appropriateness of underlying philosophical assumptions and (2) the relevance of tools employed to settle the first-order debate. For instance, with respect to philosophical assumptions one may adopt propositional realism and in the case of (2) employ semantics of questions treated as an extension of truth-conditional semantics (e.g., [Stanley and Williamson 2001](#), cited under \*Epistemic Luck\*). However, an available alternative is to adopt propositional pragmatism and inferentialist semantics *à la* [Brandom 1998](#) or—following [Santorio 2016](#)—adopt a broadly expressivist approach. Given these distinct approaches, the question arises which of them offers more appropriate assumptions and more relevant tools to decide for or against intellectualism. Similar questions may be asked as one approaches knowledge-how from other angles. For instance, epistemologically interesting questions include: Is knowledge-how analyzable? And if so, which type of framework is best fit here—internalist or externalist?). Key questions from within philosophy of mind are: Is knowledge-how a mental state? If it is, are representationalist or enactive approaches to be preferred? (see especially [Wilson and Foglia 2011](#) for a discussion pertaining to the representationalist vs. anti-representationalist debate). In the current literature meta-philosophical concerns center on representationalist approaches. Notable contributions on this score include [Brown 2013](#) and [Glick 2011](#). These pertain to problems such as appeal to linguistic vs. cognitive science frameworks and data (see [Dreyfus 1999](#), for another example). Particularly, [Abbott 2013](#) raises doubts as to the fitness of standard linguistic intellectualism to establish whether knowledge-how is a subspecies of knowledge-that. Discussions concerning appropriateness of philosophical assumptions are also present. For instance, [Noë 2012](#) voices general concerns about Fregean assumptions.

Abbott, Barbara. “Linguistic Solutions to Philosophical Problems: The Case of Knowing How.” *Philosophical Perspectives* 27.1 (2013): 1–21.[class:journalArticle]

Brings together a set of challenges against [Stanley 2011](#) (cited under \*Cross-linguistic Evidence\*) with the view to demonstrating that linguistic data may lead philosophers astray. Suggests that cognitive-scientific findings may transform the knowledge-how/knowledge-that distinction.

Brandom, Robert. “Action, Norms, and Practical Reasoning.” *Noûs* 32 (1998): 127–139.[class:journalArticle]

A compact discussion of inferential semantics in the context of three problems mentioned in the title.

Brown, Jessica. “Knowing-How: Linguistics and Cognitive Science.” *Analysis* 73.2 (2013): 220–227.[class:journalArticle]

Argues that Stanley fails to respond to issues raised against his account by the cognitive science literature to the effect that an emphasis on linguistic considerations cannot help settle knowledge-how disputes.

Dreyfus, Hubert L. “The Primacy of Phenomenology over Logical Analysis.” *Philosophical Topics* 27.2 (1999): 3–24.[class:journalArticle]

A continuation of the long-lasting polemic with Searle. While not directly applied to the topic of knowledge-how, discussion in the paper concerns yet another key aspect of the second-order controversy—phenomenology versus logical analysis.

Glick, Ephraim. “Two Methodologies for Evaluating Intellectualism.” *Philosophy and Phenomenological Research* 83.2 (2011): 398–434.[class:journalArticle]

Examining arguments from linguistics and cognitive science in the debate over knowledge-how, Glick teases apart weak and strong intellectualist theses about propositionality and argues that linguistic considerations only support the weak thesis.

Noë, Alva. “Ideology and the Third Realm (Or, a Short Essay on Knowing How to Philosophize).” In *Knowing How: Essays on Knowledge, Mind, and Action*. By Alva Noë, 197–212. Oxford: Oxford University Press, 2012.[class:bookChapter]

A piece on philosophical analysis, arguing that philosophical claims are akin to robust aesthetic judgments: asserts that arguments for and against them may be intelligible, even though the broad practice within which they function excludes proving or disproving anything.

Santorio, Paolo. “Nonfactual Know-How and the Boundaries of Semantics.” *Philosophical Review* 125.1 (2016): 35–82. [class:journalArticle]

Holds that we should resist the move from the uniformity of semantic values in knowledge-how ascriptions to uniformity of content; semantic theories of ascriptions do not automatically justify the move.

Wilson, Robert A., and Lucia Foglia. “\*Embodied Cognition[<http://plato.stanford.edu/archives/spr2016/entries/embodied-cognition/>]\*.” In *The Stanford Encyclopedia of Philosophy*. Edited by Edward N. Zalta. 2011.[class:dataSetItem-database]

Section 4.2 of this entry provides an introduction to the key features of classical representationalist and more recent anti-representationalist approaches to cognition.

## GILBERT RYLE

It is difficult to imagine a discussion of knowledge-how without at least mentioning the name of Gilbert Ryle. That some kind of distinction between knowledge-how and knowledge-that (or *knowing how* and *knowing that*) must be preserved, has become a mantra among philosophers of anti-intellectualist orientation. Nevertheless, Ryle’s own detailed recommendations on that score cause major interpretative difficulties. *How threatening is the intellectualist legend? How radical is Ryle’s remedy? How relevant is it to discussions of knowledge-how?* These are only a few questions that make it all the more important to revisit his views. This section brings together a selection of references to the primary and secondary sources that may not only help to connect Ryle’s considerations with more recent discussions of knowledge-how but also to further explore them. The first subsection contains core texts by Ryle. The next two compile references to works whose specific aim consists in assessing the import of Ryle’s views for the most recent disagreement over knowledge-how and the import of his regress arguments in particular. The final subsection sets Ryle’s writings among works that likewise focus on normative themes such as responsibility or rule following.

## Ryle's Works

Ryle 1946 and chapter 2 of Ryle 1949 provide two key readings; however, additional study of chapters 3, 5, and 10 of the latter will bring further critical insights into the debate between contemporary intellectualists and anti-intellectualists. The 2009 edition of Ryle 1949 includes an instructive preface by Julia Tanney.

Ryle, Gilbert. "Knowing How and Knowing That." In *Collected Essays 1929–1968: Collected Papers*. Vol. 2, 222–235. Taylor & Francis, 1946/2009.[class:bookChapter]

Ryle's first work on knowing-how, where normative considerations play the most important role in combating the "prevailing doctrine."

Ryle, Gilbert. *The Concept of Mind*. Abington, UK: Taylor & Francis, 1949/2009.[class:book]

Introduces new themes such as understanding; devotes much more attention to explaining how it is possible that some agent's actions enter the relevant normative domain.

## Broader Assessments Post-2001

Both Stanley 2011 and Hetherington 2011 include extensive interpretations of Ryle's works. Snowdon 2004 and Snowdon 2012; (see also Wiggins 2009) issues two sets of highly critical remarks, whereas Hornsby 2012 develops a favorable interpretation with an angle on "putting propositional knowledge into practice." For selected early reactions to Ryle's pieces pertaining to knowledge-how see the sources listed under \*20th-Century Predecessors\*.

Hetherington, Stephen. *How to Know: A Practicalist Conception of Knowledge*. Hoboken, NJ: John Wiley, 2011. [ISBN: 9780470658123][class:book]

With several qualifications that lead the author to the development of a radically intellectualist position, this offers a largely sympathetic interpretation of Ryle's work (e.g., chapter 2).

Hornsby, Jennifer. "Ryle's Knowing-How, and Knowing How to Act." In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Mark A. Moffet, 80–100. New York: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]

Argues that the primary objective in Ryle 1946 and 1949 was to show that non-propositional knowledge is required to account for the possibility of employing propositional knowledge.

Snowdon, Paul. "The Presidential Address: Knowing How and Knowing That: A Distinction Reconsidered." *Proceedings of the Aristotelian Society* 104 (2004): 1–29.[class:journalArticle]

The first of two sets of criticisms aimed to undermine the adequacy and force of Ryle's arguments against intellectualisms. The article's emphasis is Ryle 1949 (cited under \*Ryle's Works\*).

Snowdon, Paul. "Rylean Arguments: Ancient and Modern." In *Knowing How: Essays on Knowledge, Mind, and Action*. Edited by John Bengson and Marc A. Moffett, 59–79. New York: Oxford University Press, 2012. [ISBN: 9780195389364][class:bookChapter]

A sequel to the 2004 presidential address that aims to offer a reassessment of Ryle 1946 (cited under \*Ryle's Works\*).

Stanley, Jason. *Know How*. Oxford: Oxford University Press, 2011. [ISBN: 9780199695362][class:book]

Argues throughout chapter 1 that Ryle 1949 (cited under \*Ryle's Works\*) and its broad metaphysics of mind is invalid and his overall account of knowledge-how—both in its positive and negative aspects—ultimately fails as well.



Wiggins, David. "Knowing How to and Knowing That." In *Wittgenstein and Analytic Philosophy: Essays for P. M. S. Hacker*. Edited by Hans-Johann Glock and John Hyman, 263–277. Oxford: Oxford University Press, 2009. [class:bookChapter]

Defends Ryle's distinction. Exploring the ways in which knowledge-how and propositional knowledge are entangled in various ordinary contexts, posits bifurcation of "knows how" constructions.

### **Regress(es) and Other Problems**

Ryle's works are famed for the regress arguments. Similarly, nearly every piece contemporary of literature on knowledge-how includes at least some mention of them. Despite that, their force and status remains controversial. Various attempts at explicating regresses may be found in Löwenstein 2012, Fridland 2012, Cath 2013, and Fantl 2011 (the latter two are devoted exclusively to this topic). Interestingly, Ryle sometimes speaks about regress and circularity in one breath. This suggests a connection to a set of classical issues known as "the problem of the criterion" (see also \*Topics in Epistemology: The Problem of the Criterion and the Skeptical Challenge\*).

Cath, Yuri. "Regarding a Regress." *Pacific Philosophical Quarterly* 94.3 (2013): 358–388.[class:journalArticle]

Discusses two types of regress—contemplation and employment—arguing that neither is damaging to intellectualism.

Fantl, Jeremy. "Ryle's Regress Defended." *Philosophical Studies* 156.1 (2011): 121–130.[class:journalArticle]

Discusses two interpretations of the contemplation regress—temporal and metaphysical. Maintains that the latter poses a much bigger threat to intellectualism than to anti-intellectualism.

Fridland, Ellen. "Problems with Intellectualism." *Philosophical Studies* 165.3 (2012): 879–891.[class:journalArticle]

Argues that Stanley's 2011 response to the regress fails even though his proposal allows that intelligence is not to be explained entirely propositionally.

Löwenstein, David. "Knowledge-How, Linguistic Intellectualism, and Ryle's Return." In *Conceptions of Knowledge*. Edited by Stefan Tolkdorf, 269–304. Berlin: De Gruyter, 2012. [ISBN: 9783110253580][class:bookChapter]

Identifies three varieties of the regress in Ryle: contemplation, application, and correctness. Holds that although the application regress poses a threat, correctness regress is the most challenging to intellectualism.

### **Responsibility, Norms, Rule-Following**

Most arguments Ryle offers against intellectualism are devised to challenge the position on normative grounds. Taking practical responsibility as central to understanding intelligent action, Ryle sets of to discuss the problem of boundedness by norms and rule following. These problems, crucial to the understanding of knowledge-how, are present in the now-classical works of Wittgenstein 1968 and Kripke 1982 and have been extensively discussed by a number of influential thinkers including Boghossian 1989, Brandom 1994, Searle 1992, and Wright 1989.

Boghossian, Paul. "The Rule-following Considerations." *Mind* 98 (1989): 507–549.[class:journalArticle]

Surveys and discusses various post-Kripkean responses to meaning skepticism. Focusing on Kripke's rejection of dispositional accounts of meaning, with reference to [Wright 1989](#), Boghossian maintains that the concept of rule following does not explain correctness of application because it presupposes correctness.

Brandom, Robert. *Making it Explicit*. Cambridge, MA: Harvard University Press, 1994. [ISBN: 9780674543300][class:book]

Occasionally cited among early anti-intellectualist pieces. The work makes references to Ryle's distinction and originally explores insights from Sellars and Wittgenstein on the normativity of meaning.

Kripke, Saul. *Wittgenstein on Rules and Private Language: An Elementary Exposition*. Cambridge, MA: Harvard University Press, 1982. [ISBN: 9780674954007][class:book]

The work that generated an enormous wave of interest in meaning skepticism and so-called skeptical solutions as opposed to straight solutions to the rule-following paradox.

Searle, John R. *The Rediscovery of the Mind*. Cambridge, MA: MIT Press, 1992. [ISBN: 9780262193214][class:book]

Beyond remarks on rule following (chapter 10), discusses the hypothesis of the background where non-propositional know-how features as an enabler of appropriate functioning of mental states (see chapter 8).

Wittgenstein, Ludwig. *Philosophical investigations*. Translated by G. E. M. Anscombe. Oxford: Basil Blackwell, 1968.

A classical piece that discusses practical normativity in ways that importantly resemble those of [Ryle 1946](#) and [Ryle 1949](#) (cited under *\*Ryle's Works\**).

Wright, Crispin. "Wittgenstein's Rule-following Considerations and the Central Project of Theoretical Linguistics." In *Reflections on Chomsky*. Edited by A. George. Oxford: Basil Blackwell, 1989. [ISBN: 9780631159766][class:bookChapter]

Considers what it takes to apply rules in new cases. Suggests a dual-success story: apprehending relevant features of context and knowing what is permitted in the context.

## RELATED THEMES

A closer look at distinct aspects of the debate along with details of specific approaches indicates that knowledge-how provides an elusive target. For better or worse, historical and systematic studies provide other distinctions and themes of significance to the topic of this entry. One of the most frequently mentioned ancient distinctions is that between the *episteme* and *techne*. However, it does not easily map onto distinctions between knowledge-how and other types of knowledge. A discussion by [Parry 2014](#) provides helpful guidance. Similarly, the distinction between practical and theoretical knowledge, which has long been present in Western philosophy (including its occurrences in the present debate), has been construed in a number of different ways. There is a stark contrast, for instance, between Kant's strongly normativist and Anscombe's non-normativist characterization of practical knowledge (see [Engstrom 2002](#)). Thus, the distinction between practical and theoretical knowledge also should not be automatically assumed to map onto the one between knowledge-how and knowledge-that (or knowledge-*wh* more broadly). Beyond the two distinctions there are less discussed themes relevant to the topic of knowledge-how that originate from the works of Polanyi and philosophers of the (broadly) continental tradition. These include (though are not restricted to) tacit versus explicit knowledge ([Polanyi 1958](#)), readiness-to-hand versus presence-at-hand ([Heidegger 1962](#)) or intentional arc and associated maximal grip ([Merleau-Ponty 1962](#)).

- Engstrom, Stephen. “Kant’s Distinction Between Theoretical and Practical Knowledge.” *Harvard Review of Philosophy* 10.1 (2002): 49–63.[class:journalArticle]  
In discussing the title theme, juxtaposes Hume’s, Kant’s, and Anscombe’s perspectives on practical knowledge.
- Heidegger, Martin. *Being and Time*. Translated by John Macquarrie and Edward Robinson. Oxford: Blackwell, 1962.[class:book]  
Full of idiosyncratic language, this difficult work provides—among other topics—a vital discussion of practical agency.
- Merleau-Ponty, Maurice. *Phenomenology of Perception*. Translated by Colin Smith. London and New York: Routledge and Kegan Paul, 1962.[class:book]  
Along with Heidegger’s *Being and Time*, this is the most influential work by a Continental philosopher discussed in the contemporary cognitive science.
- Parry, Richard D. “\*Episteme and Techne[<http://plato.stanford.edu/archives/fall2014/entries/episteme-techne/>]\*.” In *Stanford Encyclopedia of Philosophy*. Edited by Edward N. Zalta. 2014.[class:dataSetItem-database]  
An extensive survey of perspectives on the ancient distinction, ranging from Xenophon to Plotinus.
- Polanyi, Michael. *Personal Knowledge: Towards a Post-Critical Philosophy*. Chicago: University of Chicago Press, 1958.[class:book]  
One of canonical works in the sociology and philosophy of science and still largely underrepresented in the mainstream debate over knowledge-how.

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