Book review
How to Take Smart Notes?

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If you start writing with a blank page, you are already in trouble – and giving advice on how to write a thesis is like giving a 65-year-old advice on how to save for retirement. In his book *How to Take Smart Notes*, Sönke Ahrens is not stingy with strong statements and his criticism towards guidebooks on how to write academic texts is outspoken. Instead of offering advice on how to formulate a good research question, how to structure a larger paper or how to cite correctly, the author highlights the importance of note-taking prior to starting with writing an academic piece in the first place. That way, Ahrens' book falls into neither of the two main categories of advice books on academic writing: It is not a step-by-step guidebook offering "practical" advise on how to write a text as if it were a linear process, nor is it a psychological self-help book providing tips on how to manage the mental challenges of finishing a piece of writing without emotional breakdowns. Instead, Ahrens offers a very convincing meta-reflection on writing as not what follows research, learning or studying, but as the very medium of all this work (p. 2): For him, writing is synonymous with thinking and knowledge generation. Hence, the quality of academic writing, Ahrens argues, depends more than anything on the work that is done in writing (in the form of note-taking) before even the decision of a paper topic is made (p. 3). In reference to the German sociologist Niklas Luhmann and the American theoretical physicist Richard Feynman, Ahrens insists that "it is not possible to think systematically without writing" (p. 32). This emphasis on writing as a method of learning and research offers a valuable interdisciplinary contribution to – and practical application of – existing scholarship on the topic, which has for instance confirmed the benefits of using writing-to-learn strategies within science classrooms (Gunel et al, 2007).

The book is divided in three sections, whereof the first one explains the formal tools of "smart note-taking". Taking his cue from the notoriously prolific Niklas Luhmann (1992, 2000), who managed to publish roughly 60 highly influential books and countless articles within his 30-year career, Ahrens begins his reflections on note-taking as prerequisite for successful writing by explaining Luhmann's famous system of the slip box. After having read a book or text, Luhmann would take a note on a piece of paper, including the bibliographic information on one side and a brief note about the content on the other. These notes end up in the bibliographic slip box. In a second step, Luhmann took a look at these notes and considered their relevance for his own thinking and writing. Only in this second step, Luhmann turned to his main slip box, and wrote his ideas, comments and thoughts on another piece of paper to enter them into the slip box by connecting his new notes with already existing ones. This way Luhmann created a system of growing interconnections of *thoughts* and ideas, and simultaneously collected small pieces of writings that would eventually turn into more developed arguments and fully formulated texts later. Finally, an index would function as an entry point into a noted line of thought or topic. While Luhmann worked with physical pieces of paper, Ahrens highlights that today's technology offers more efficient ways to manage a slip box with free programs that are available online for the bibliographic notes and even the slip box system itself. While Ahrens mentions research suggesting that handwritten notes might benefit long-term understanding (Mueller & Oppenheimer, 2014), he also discusses the advantages of making use of digital referencing systems like Zetero and an online slip box. For simplicity's sake and for making sure that an idea is fully understood, Ahrens suggests initially writing by hand for Luhmann's first category of notes (the bibliographic). Then, for mobility and cross referencing, Ahrens recommends using digital tools like Daniel Lüdecke's Zettelkasten (p. 31).

The second section of *How to take Smart Notes* offers very well researched and accessibly formulated underlying principles of why the slip box works, drawing on research ranging from science of education, philosophy and psychology, to social sciences, neuroscience, and technology studies. As Ahrens points out, Luhmann's slip box does not simply function as an archival system, a database or a personal version of Wikipedia (p. 20). Instead, it is an externalized system of *thought*. By focusing on what is interesting to the individual researcher and keeping *written* track of our own intellectual development, Ahrens states, topics, questions and arguments will emerge from the material without force. Importantly, Luhmann's system is built bottom-up, without a preconceived order of topics. As such, it works effectively as an external structure to think in, a scaffold. Drawing on neuroscience, Ahrens highlights how the slip box compensates for the limitations of the human brain, such as forgetfulness, subjectivity and selective perception (Levy, 2011, p. 270). Furthermore, its dependence on written notes functions as a physical metaphor of and practical tool for learning, writing and research. Ahrens points out that the slip box's internal connections of thoughts work like Gadamer's hermeneutic circle (2004): Every

intellectual endeavor starts from an already existing preconception, which can then be transformed during further inquiries and serve as a starting point for further endeavors. Keeping in mind that nobody ever starts without any previous conceptions, Ahrens highlights the absurdity of teaching the hermeneutic circle in universities, while treating writing an academic paper as if it were to start from scratch – the blank page – and as if it were to move forward in a preconceived straight line.

Finally, the last section of the book promises to offer "six steps to successful writing". However, following Ahrens' initial criticism of a supposed linear writing process, the suggested steps read more like a disquisition on human cognition and the psychological undercurrents of (academic) learning and writing, rather than offering a set of "how-to" rules. Referring to the workings of the slip box as the main tool for note-taking and thinking, also in this final section, Ahrens promotes a non-linear writing process that generates insight instead of formulating preconceived hypotheses. Ahrens accounts for the unpredictability of learning and the writing process as something that should not be overcome or controlled by following certain standardized steps. Instead, he highlights that the open-endedness of writing (for him a synonym for thinking) is expedient, if not a basic necessity for generating genuinely new insights. Keeping this in mind, Ahrens also reflects critically on the role that writing plays in university education. Reiterating his main argument of writing being the primary medium of thinking, Ahrens points out that studying does not prepare students for independent research – like writing a final thesis – but instead, if done properly, it is independent research (p. 35).

The idea of the slip box is simple. Nevertheless, making an optimal use of its potential does require a radical change in everyday habits for many writers, Ahrens acknowledges. Taking notes when reading a text may be common for most, but formulating these notes in a way that makes it possible to add them up to a fully developed paper with original ideas, and entering such notes systematically into the externalized system of the slip box may seem unnatural at first. Ahrens however accounts for a number of objections and argues very convincingly why it may be worth reconsidering old habits and use systematic note-taking as a means of thinking and writing itself. The book offers very concrete advice on how to take smart notes, how to build a Luhmann-style slip box, and how to implement it effectively into everyday routines of writers. Ahrens also, and even more so, offers very well researched and formulated insights into human processes of meaning making, learning, and developing truly original knowledge. The slip box is then presented as a tool to write (more) efficiently, and, even more importantly, as a training tool for serious long-term learning. Since Luhmann's system of the slip box is well-known, Ahrens' valuable contribution lies less in providing an innovative technique of note-taking and the organization of academic writing, but more in reflecting critically on the very nature of writing as a medium of knowledge generation.

Ahrens himself is a researcher in the field of educational philosophy and social science and has done extensive research and writing on questions of world-disclosure and knowledge production (2014). *How to Take Smart Notes* then may present itself as a manual for "boosting writing", but seems more of a hybrid between a self-reflexive guideline and an academic treatise. The book is written in an essayistic and very readable style, humorous and anecdotal, which makes both the practical advice as well as the underlying philosophy very accessible and convincing. Ahrens offers a compelling meta-reflection on the pivotal role of writing in – and as – thinking, and as such, he also formulates a timely and important advocacy of the humanities. It is therefore regrettable that in his emphasis on proliferating personal productivity and 'boosting' written output with Luhmann's slip box system, Ahrens neglects to critically reflect upon the luring dangers of academic careerism for truly original scholarship. The ever-increasing demands of high productivity in compressed time frames is imposed by the neoliberal university (Mountz et al., 2015) result in a toxic culture of science dominated by a 'publish or perish' ideology (Colquhoun, 2011). The distorted publishing incentives in academia (Open Science Initiative Working Group 2015) already lead to a doubling of scientific output every five years (Miller, 2012); The exaggerated expectations of academic prolificness obviously run the risk of reducing the quality of science and of demoralizing the victims of this sort of mismanagement (Colquhoun, 2011). The explosion of publishing outlets is in turn tightly connected with the increasing governmentalization and commodification of academic life (Miller 2015), and while Ahrens continually emphasizes the potential of increasing written output with Luhmann's method, he unfortunately misses the opportunity to reflect on the very conditions of academic life that create a demand for a book like his own in the first place.

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