

Chapter 6

The Disappearing Trace and the Abstraction of Inscription in Digital Writing

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ABSTRACT

Due to increasing digitization, more and more of our writing is done by tapping on keyboards rather than by putting pen to paper. As handwriting is increasingly marginalized both inside and outside of schools, and children learn to write by typing “ready-mades” on different kinds of keyboards rather than by shaping each letter from scratch, we ought to acknowledge the physical and sensorimotor aspect of writing, in addition to the more typically studied cognitive and linguistic aspects. The shaping of letters and words in handwriting involve distinct kinesthetic processes that differ markedly from the kinesthesia involved in tapping keys on a keyboard. The ways in which we use our fingers and hands play an important role in perceptual and cognitive processing; hence, the shift from handwriting to typewriting might entail far-reaching cognitive as well as educational implications. This chapter reflects on some largely neglected aspects of the ongoing shift from handwriting to typewriting, focusing in particular on potential cognitive and phenomenological implications of the increasing abstraction of inscription entailed in typing on a keyboard, and the intangibility of the resulting text on screen compared to that produced by handwriting with pen on a material substrate such as paper.

INTRODUCTION: TOOLS AND TECHNOLOGIES – BODIES AND BRAINS

What is writing? It may seem uninformative, or perhaps redundant, to begin an article on the impact of digitization on writing with a question of such general nature. After all, we intuitively know what writing is; and if we do not, the steadily growing

research literature on writing can inform us that it is a complex process involving the coordination of a number of cognitive or mental tasks (see, e.g., Alamargot & Chanquoy, 2001). However, as I will attempt to show in the following, the current digitization should make us pause to reflect on some fundamental and yet largely ignored dimensions of the physical nature of the writing process itself. More precisely, we might want to reconsider common notions of writing as primarily if not exclusively a cognitive process involving,

DOI: 10.4018/978-1-4666-4341-3.ch006

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according to the most commonly referred model in cognitively oriented writing research (Flower & Hayes, 1981), planning (i.e., developing the writing plan and setting goals), translating (i.e., converting the plan into text), and reviewing (i.e., text reading and editing). The digitization of writing entails radical transformations of the very act of writing at a sensorimotor, physical level, and the (potentially far-reaching) implications of such transformations are far from properly understood. Hence, narrowing in on the physical, sensorimotor dimensions of the act of writing by hand and by different kinds of keyboards, combined with an awareness of the mediating role of the tools and technologies employed during the different writing processes, might uncover aspects in need of greater theoretical, empirical, and pedagogical consideration in a time when writing by hand is increasingly marginalized by a host of digital technologies.

Writing has always relied on the use of technologies and media that provide means of materializing mental content into visible symbols and representations. From the use of clay tablets and animal skins via the medieval manuscript and the ancient papyrus roll, to the printing press and the current digitization, writers have always had to handle some writing implements and use these in dexterous ways to generate inscriptions, traces or representations on some medium, substrate or display. Crucial to the present context is that both implements and substrates have certain affordances² which will impact the writing process, in subtle and more obvious ways. Whether considered a challenging intellectual skill, a deeply satisfying creative process, or a means of communication, writing therefore by definition involves and depends on the human body, the human mind/brain, and some tool by means of which we write, and a substrate or display (medium) on which the writing appears.

Today, thanks to the ubiquity of digital technologies, we arguably write more than ever. However, the ways in which we write are notice-

ably different from earlier times. In particular, the physical aspect of the writing process is different: the ways in which we use our fingers and hands differ profoundly when tapping keys on a keyboard compared with writing and shaping each letter by hand. As our writing tools and technologies change, the particular affordances of the tools make themselves more readily apparent, and we may begin to glimpse the more profound implications of such a shift:

Changing the technologies of writing has profound implications, at least in part, because different technologies are *materially configured in profoundly different ways*. That is, different writing technologies set up radically different spatial, tactile, visual, and even temporal relations between the writer's material body and his or her material text. [...] Hence, the body [...] is the mechanism by which the mediation of the mental and the material occurs. (Haas, 1996, p. 5; italics mine)

When writing with digital technologies, for instance, less precise and less discriminating manual movements are required than when handwriting with pen on paper (Mangen & Velay, in press). In many respects, digitization contributes to making the relationship between the embodied, sensorimotor input (i.e., the physical process of writing) and the perceptible output (i.e., the visible "trace" of the writing process; the product) generated by the technology, more abstract and detached. Needless to say, such increasing abstraction might have far-reaching implications, educationally and practically as well as phenomenologically and biophysiologicaly.

Nevertheless, it is not easy to find empirical studies actually comparing handwriting and typewriting with respect to different aspects or outcomes. The scarcity of studies stands in stark contrast to countless prophesies and questions about the increasing marginalization of handwriting in schools: will we need to know how to write by hand in a future which is increasingly digital? Is anything important being lost if we lose the

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