On the relations between writing and thinking

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This article discusses aspects of the relation between writing and thinking within the framework of cultural-historical psycholinguistics. Based on a psycholinguistic conception of writing and reflections on a cultural-historical concept of thinking, the article first summarizes hypotheses about the relations between writing and thinking and then explores the possibility of empirical access to these processes, where the concept of 'trace' plays an important role. This is followed by a presentation of writing-thinking-types and a model of writing-thinking-relations, which are based on an empirical study on diary writing. The article concludes with a synopsis of further research topics and possible connections to language acquisition and language teaching contexts.

1. Introduction

"Writing restructures consciousness" (Ong 1982, p. 78) – the famous thesis by Walter Ong ascribes vast influence on thinking processes to writing. However, as especially empirical research on so-called functional illiteracy (e.g. Romberg 1993; Börner 1995; Löffler 2000; Bertau 2001; Linde 2008) has shown, to know the technique of writing does not necessarily mean that people know how to write. From this standpoint, the article attempts to answer the question of what is how possible for thinking processes through writing.

While the reflections on scripture and writing are old topics in European philosophy (for an overview cf. Schlieben-Lange 1994), psychological and psycholinguistic research about writing and especially the relation of writing and thinking is relatively new (cf. Knobloch 1996 who gives an overview about psychological writing research since the 19th century). In the late 19th and beginning 20th century graphology was the leading form of psychological writing research. Handwriting was considered as a plausible instrument to garner information about a writer's personality. This approach is now strongly criticized and not considered scientific any longer (cf. Kanning 2009). Since the beginning of the 20th century there was quite a

lot of experimental research on topics which was often aimed at improving the teaching of writing at schools. Several models concerning writing process were developed (e.g. Flower & Hayes, 1980a/ 1980b) which conceptualize the writing process in a modular way from a purely cognitivist perspective. Yet this type of psychological writing research does not adequately deal with the question how writing and thinking are related in a recursive process. In fact, many psychological articles often deal with quantitative or qualitative methods related to inquiries or interviews to inquire about the relations between reading and writing, but they largely ignore the writing products. In similar fashion, linguistic articles often examine writing products without considering basic psychological processes.

This article is an attempt to develop a model of the relations between writing and thinking which is based on an empirical study of writing products. The leading theoretical perspective is the cultural-historical approach, which was mainly developed by Vygotsky in Russia and the Soviet Union within the 1920s and 1930s. During the last two decades this approach was discovered as a fertile theoretical reference point for psycholinguistic research and enhanced in its theoretical as well as its empirical dimension (e.g. Messing 1981; Knobloch 2003; O'Connell & Kowal 2003; Karsten 2009; Surd-Büchele 2009; Bertau 2011; Werani 2011). The present article is situated within this research context.

2. Vygotsky's Notion of Writing – A Point of Entry

According to Vygotsky (1934/ 1987) writing is conceptualized as written speech. This makes relations between inner and outer speech possible. Vygotsky (1934/ 1987, p. 250f.) argues that the different forms of speech merge again and again. It is assumed that during these processes the forms of speech partly change their functions, but at the same time they remain speech and retain speech character and attributes. Evidence for this is given in the work of Werani (2011), who argues in her analysis of inner speech that inner speech is like outer and written speech a form of appearance of speech. These three appearances of speech often look similar and may be used for similar purposes. As a consequence, the potential of written speech can just be understood if the potential of language and speech are discussed first. The next question then has to be how the specific appearance of speech in writing can be described.

It is quite salient that Vygotsky differentiates between language (*jazyk*) and speech (*reč*). This dichotomy results on one hand in a static, systemic perspective and a dynamic, process-oriented and interactive one on the other. Vygotsky focuses on the second one and does not start his reflections with the forms of speech, but on its functions. He emphasizes that communication is the first function of speech: "Specifically, the initial and the primary function of speech is communicative. Speech is a means of social interaction, a means of expression and understanding." (Vygotsky 1934/ 1987, p. 48). Hence, the social nature of speech is the starting point to understand speech, all forms of speech always have communicative contingents – not only formally, but also within their functions. This means they are always addressed to someone else, thus making understanding possible. More specifically, the work of Bertau (2011) develops from Humboldt's ideas and from the Russian psychologists and linguists the concept of alterity, arguing that speech always has an addressee, which is the reason for its cognitive potential. This addressivity has to be differentiated into 'for me' and 'for others' categories, which may both appear simultaneously (Surd-Büchele 2011).

At the same time "[s]ocial interaction presupposes generalization and the development of verbal meaning;" (Vygotsky 1934/1987, p. 48). Therefore speech is not only communicative, but it is also always inseparably pensive. Speaking and thinking react to and enable each other. "It has always been understood that both functions are somehow combined in speech" (Vygotsky 1934/ 1987, p. 48).

Writing conceptualized as 'written speech' therefore has a communicative and a cognitive dimension simultaneously. This conception of writing, which considers both central dimensions without allocating them to concrete forms, avoids the classification problems of writing functions other authors are faced with (e.g. Ludwig 1980).

Vygotsky also shows that it is not useful to analyze these two dimensions separately, as it is often done in psychology and linguistics: "The mode of analysis that decomposes the whole into its elements divorces the communicative function of speech from its intellectual function" (Vygotsky 1934/1987, p. 48).

For Vygotsky the specificity of writing consists first in the specific communicative situation as the dialogue partner normally is absent: "It is speech without an interlocutor. […] In written speech, those to whom the speech is directed are either

absent or out of contact with the writer. […] It is a conversation with a white sheet of paper, with an imaginary or conceptualized interlocutor. Still, like oral speech, it is a conversational situation" (Vygotsky 1934/ 1987, p. 202f.). This specific communication situation causes "[t]o a much greater extent than in oral speech, [that] thought is expressed in formal word meanings" (Vygotsky 1934/ 1987, p. 270). Additionally, "[i]n written speech, we must use words to transmit what is transmitted in oral speech through intonation and the immediate perception of the situation" (Vygotsky 1934/ 1987, p. 272).

Vygotsky also emphasizes that writing is maximally expanded and syntactically differentiated. These observations on the characteristics on writing are surely true, but they describe mainly prototypic western forms of literacy such as letter or novel writing. That is why we have to ask critically which genres Vygotsky had in mind while developing his reflections on writing (Surd-Büchele/ Karsten 2010). Moreover, the role of genre shows that it is hardly possible to make a definite statement about writing itself, because writing appears always in concrete genres which are used by people in concrete situations. From this point of view only research that considers formally- and situationally bounded writing allows a progress in theory.

Another characteristic of writing lies in its specific material nature, which also may offer communicative possibilities. Written speech needs a durable material base. Through the arbitrary physical properties of the material, changes can originate in the characters that can be visually or tactilely recognized. It also has to be differentiated between non-integrated (simply technical) an integral (conceptual) writing (cf. Ludwig 1995).

A final consideration regarding written speech is that while the material nature of writing visualizes and conserves some of the writing process other parts of the writing process are invisible to the reader. At the same time there are strict conventions or at least implicit expectations of how writing is supposed to appear, namely 'like printed'.

The consistency of the medium makes it much easier to communicate through time and space as opposed to oral speech or a messenger. Ehlich's (1979; 1983/ 2005) reflections on text demonstrate that the possibility of a detachment from the actual speech situation (Ablösung aus der Sprechsituation) and the quality of

tradition (Überlieferungsqualität) are characteristic for texts. As writing makes speech permanent and is detached from a concrete speaker, it becomes more adequate for the production and especially for the conservation and transmission of texts.

Yet the detachment from the actual speech situation requires that the written text may be extracted from one situation and transferred to another, a situation only made possible when speech production is no longer connected with a single individual. Instead it is separated from the human medium and converted to a mobile and transportable object. Non-face-to-face communication, which may be between people not familiar or locally connected with one another, implies certain difficulties, e.g. the lack of common knowledge between writer and reader. Vygotsky (1934/ 1987) also compares the various motivating factors of written speech to oral speech. While speech automatically arises through the real presence of a dialogue partner in oral communication situations, writing contexts have to refer to the fictive presence of a "reader". Consequently, Vygotsky sees the motives to use written speech as "more abstract, intellectualistic, and separated from need" (Vygotsky 1934/ 1987, p. 204).

3. Thinking as higher psychological function

According to Vygotsky (1931/ 1997) human thinking consists of several higher psychological functions. The adjective 'higher' is in contrast to 'lower psychological functions', which are qualitatively different from the specifically human higher psychological functions. Vygotsky (1930/ 2003) chooses the term "function" as opposed to "system". The psychological system is built by the flexible relations between several separate higher psychological functions. With this distinction he clearly differentiates between separate parts (functions) of thinking, which can be analyzed separately and fulfill a specific function within thinking (as system) and thinking as whole (system), which can be analyzed and understood only through an analysis of its parts and their relations (Vygotsky 1930/ 2003, p. 320f.).

Vygotsky does not offer a complete list of higher psychological functions. Sometimes he names some of them, but always remarking that this is only a selection: "[…] higher functions (verbal thinking, logical memory, formation of concepts, voluntary attention, will, etc.) […]" (Vygotsky 1931/ 1997, p. 17).

Vygotsky focuses on the development of higher psychological functions and on the relationship between lower and higher psychological functions. He understands higher and lower psychological functions as "two basic branches, two streams of the development of higher forms of behavior inseparably connected, but never merging into one. These are, first, the processes of mastering external materials of cultural development of thinking: language, writing, arithmetic, drawing; second the processes of development of special higher mental functions not delimited and not determined with any degree of precision and in traditional psychology termed voluntary attention, logical memory, formation of concepts, etc." (Vygotsky 1931/ 1997, p. 14).

Through the use of signs, especially linguistic instruments, which offer a particular manifold sign system, in Vygotsky's conception, humans develop their characteristic higher psychological functions. The specific use of signs consists for Vygotsky with the fact that "that man himself creates stimuli that determine his response and uses these stimuli as devices for mastering processes of his own behavior. Man himself determines his behavior with the help of artificially created stimuli-devices" (Vygotsky 1931/ 1997, p. 47f.). This use of signs is a mediated activity. The sign becomes "a means of psychological action on behavior, one's own or another's, a means of internal activity directed toward mastering man himself; the sign is directed inward" (Vygotsky 1931/ 1997, p. 62).

As a consequence of these views, every higher psychological function and thus the psychological system have linguistic dimensions. At the same time the possibilities of thinking fundamentally depend on the quality of the available linguistic instruments, as Werani (2011) shows in her study about inner speech. Thus the assumption is that with a change of linguistic instruments a modification of thinking will also take place.

As the linguistic instruments and the relations between signs and meanings change permanently, a constant formula describing the relation between speaking and thinking is assumed not to exist (Vygotsky 1930/ 2003, p. 321). The consequence of this line of thought is a highly flexible system which is constantly undergoing change and development.

The central role that language plays as an instrument of thinking in Vygotsky's theory also explains the social nature of all higher psychological functions: "Man as an individual maintains the functions of socializing" (Vygotsky 1931/ 1997, p. 106).

Valsiner and van der Veer (2000) explicate four attributes of higher psychological functions: (1) Higher psychological processes are culturally mediated. (2) They have a kind a social structure, as they have social origins. (3) Higher psychological processes are mediated because they use signs. (4) Higher psychological processes are interiorized. Werani (2011) emphasizes that interiorization does not mean (passive) transport from outside to inside, but interiorization means interdependency between intra- and interpsychological processes. Vygotsky (1931/ 1997) also develops assumptions about the empirical research on higher psychological func-tions. First, he argues for a holistic analysis and not only a concentration on un-hinged single elements. Secondly, the research should occur within a process ana-lysis which involves historical and developmental dimensions. Finally, Vy-gotsky emphasizes that not only a description but also an explanation (particularly of causalities) is salient to research on higher psychological functions.

4. Assumptions about the relation between writing and thinking

Based on the aforementioned reflections on writing and thinking, four main as-sumptions can be deduced about the relations between writing and thinking. As written speech is considered a form of appearance of speech, reflections on the relation between speaking and thinking must be clarified first before adapting to the particularities of written speech.

1. It can be expected that the use of written speech has influence on all higher psychological functions it is connected with. To understand how this works we have to specifically consider the material nature of written speech and the social practice which is connected with writing.

As thinking is considered speech-based within the cultural-historical paradigm, the use of a different form of speech, here it is written speech, is expected to have an impact on thinking processes.

2. Changes in higher psychological functions are not caused by writing per se, but by the specific use of writing as written speech.

As a consequence, one may assume that writing is used for specific higher psychological functions which are usually related to specific genres. Empirical analysis then must necessarily include the genre and the higher psychological functions related to that genre.

3. The relations between speaking and thinking are complex processes which are not directly observable. According to Vygotsky, "The relationship of thought to word is not a thing, but a process, a movement from thought to word and from word to thought" (Vygotsky 1934/ 1987, p. 250). This passage indicates that he understands the relationship between words and thought is not linear, but recursive or maybe even like a hermeneutic spiral. That means thoughts are developed further while they are re-thought several times. And because thoughts can be re-thought, we do not speak or write completed thoughts, but preliminary results. This process character indicates that speaking and thinking do not coincide and that thinking does not proceed speaking and just needs to be verbalized (Vygotsky 1934/ 1987, p. 250f). Another aspect of such externalized language lies in its materialized form. With the exception of copying mistakes, a written text does not change, which means that the material basis always remains the same. In other words something written may be reread verbatim and reflected upon, while the actual physical words always remain the same. Because of its material form, it is assumed that writing can be used very well for stabilizing processes.

Written speech is expected to be both a completed thought, stabilized and conserved in a specific form and a flexible medium in that it is a possible starting point for new thoughts.

4. Whereas written text as an object does not change, the reader and its environment do. As a result, a new understanding of the apparently same circumstances is always possible. What is more, the amount of written speech is not affected by the limits of short or long time memory. Consequently the question of selection of writing contents is different.

Moreover written speech as oral speech means an externalization of thinking. Meanwhile through writing down it gets representational in its form and obtains

object character. Thus it gets possible for the writing person to contemplate the own written speech, which is no longer connected to the person from an outer perspective and with distance. This analysis, which at the same time means always a new thinking of the written, may also make possible a form of reflection, which is because of its evaporation not possible at oral speech.

Thus it is assumed that the form can get the object of analysis and is expected that the use of written speech may facilitate certain forms of reflection processes on form.

5. Empirical approaches

5.1 The difficulty of investigating thoughts

Empirical research about thinking is made difficult by the fact that it is not directly accessible. Various research methods have been developed to resolve this issue – e.g. the method of thinking aloud (cf. Lüer 1973; Ericsson &Simon 1993; Huber & Mandl 1994; Weidle & Wagner 1994; Ericsson 2003; 2006; Funke & Spering 2006; Werani 2011) or neuroimaging – but these all contain specific difficulties.

Measuring thinking via the thinking aloud method, Werani (2011) calls attention to the capacity problem (not everything that is in the mind can be simultaneously expressed) and to the expression problem (dependency of the selection of expressions by different extern factors like the research question or the instructions of the investigator) which lead to an incompleteness of think-aloud-protocols. A further problem with the thinking aloud method is considering which thinking pro cesses reach consciousness and thus be verbalized. Finally the think aloud method is part of an experimental design where collected data are influenced by the experimental situation (e.g. investigator effects, stress effects through the experimental situation).

As for the problematic aspects of neuroimaging, Nitsch (2009) remarks that the main focus of previous analyses concentrated on word level that the task influences the result and that the in the experiments created activation images do not answer the question of speech processing but just the question of the experiment. Without negating the possible positive results of this method, she states that images suggest a direct access to reality, but this is an illusion (cf. Nitsch 2009, p. 94).

5.2 The concept of 'trace' as a possible methodological solution

Our contribution proposes as possible solution, similar to the thinking aloud method, that traces of thinking can be found in expressed linguistic materializations. According to Vygotsky (1934/ 1987), the word is an adequate tool to analyze the relation of word and thought. The analysis of different forms of speech e.g. in think-aloud-protocols or written texts thus allow to infer specific indexical conclusions on thinking and on the relations between the respective form of speech and thinking as discussed for example Brown (1984), Bertau (1999) and Werani (2011). In our study (Surd-Büchele 2011), we take the concept of trace as such an index of the relation between written speech and thinking.

The understanding and implications of the concept of 'trace' are based on Bedorf (2007), addressing 'trace' as philosophical concept.

The starting point for all further reflections about the concept of trace is the assumption that traces have to be read as references to absent things (Bedorf 2007, p. 401) that are interpreted at a later time. Based on this meaning of trace, Bedorf identifies several areas which mark the semantic field of the metaphor. A first understanding comes from criminalistics, where traces are understood as evidence for reality, which generate specific facts about an event. To differentiate between useful and just contingent traces, further validations and correlations have to confirm the suspicion. Salient is the principle of significance, which differentiates between important and what have been determined to be irrelevant traces. For the success of an investigation, it is important to follow different traces for different interpretations. Traces are not just read, they are also constructed (Bedorf 2007, p. 402). For philosophers the search for evidence is also an important field where the metaphor of trace is used. Scholars in this field discuss the appointment of the content of reality and the measurement of the trace-constituting contexts (Bedorf 2007, p. 402).

Thus the metaphor of trace is ascribed a meaning similar to 'path', thus implying a metaphor of space. It is also helpful to understand traces as indices of a suppressed past on the one hand and individualized, exclusive access on the other (Bedorf 2007, p. 408). If the trace-metaphor is separated from collective or individual memories, it retains the name of a relation between something present and something absent (Bedorf 2007, p. 408). A trace can also lead its perception. In

that sense, it is used as bare scaffold for insights which cannot be realized directly (Bedorf 2007, p. 410). At the same time the metaphor of trace can be separated from distinct imaginations (Bedorf 2007, p. 412f.), because it is more than a bare mark, which unambiguously points. The attractiveness of traces consists in their perceptibility as signs, which are not unambiguously interpretable. They give evidence which still has to be connected with a context within a certain area of interpretation (Bedorf 2007, p. 414).

These meanings of 'trace' lead to two assumptions concerning the analysis of the relations between thinking and writing with the help of written texts. It is assumed that traces of the underlying thinking processes can be found in these texts because higher psychological functions may take place in writing. At the same time, the written text may show traces of the recursive processes of the emergence of thoughts.

For the current analysis, the investigated linguistic forms adopt the criminalist understanding of the term defined as indices which have to be interpreted within a superordinate theoretical approach –the cultural historical approach. Results gained in this way have to be interpreted as possible – in the sense of preferably traceable – but not as an exclusive interpretation.

With the help of the concept of trace the concentration on linguistic forms as bases of the analysis also becomes justifiable. Thus traces are visible forms which have to be interpreted. The starting point for all interpretation is the visible form as it is given in the trace.

The form as concrete appearance is considered as the adequate category, as neither speech nor linguistic elements exists 'as such' but only in a historically and situationally bound form.

5.3 Traces of thoughts in diary writing – an empirical study

The concept of 'trace' is useful when analyzing relations between thinking and writing. However, the selection of specific linguistic forms to be treated as traces must be made.

The following reflections were taken into account about the relations between thinking and diary-writing in an empirical study that analyzed the diaries of 14 con-

temporary writers of paper and online diaries. The aim was to investigate the rela-tions between writing and the selected higher psychological functions remember-ing, self-construction, self-monitoring and reflection (cf. Surd-Büchele 2011).

The analysis was divided into three categories. The first one, 'Communicative Structure', is based on the idea that every form of speech in any genre has a com-municative dimension, which has to be examined to understand the relationship between thinking and speaking. The second category, "Writing and Genre", con-sid-ers the specificities of writing within the analyzed genre. The third category, "Higher psychological Functions", accounts that for different mental processes different linguistic forms may be in particular relevant.

The following table gives an overview of the study's concrete structure:

Catego-ries	Communicative Struc-ture		Writing and Genre		Higher psychological Functions	
Areas of Analysis	Addressi-vity	Deixis	Fashioners	Ritual	Questions	Ratio-nales
Linguistic forms	Explicit addres-sings Com-ments Abbrevi-ation and Expan-sion	Temporal struc-tures Position-ing of the writer (I, We, One)	Multiplication of letters/ punctation marks Capitaliza-tion Emoticons/ Inflectives Inverted commas Carets Slashes Brackets Dashes	Fixed forms (poems, lists etc.) Saluta-tions/ compli-mentary closes Headlines First/Last sentences Phrasing level	Questions with explicit addressing Questions without explicit addressing Questions in indirect speech	Causal Con-junctions Com-posed causal reference construc-tions

Table 1: Analysis structure for thinking in diary writing (overview).

The first level of categories is divided into three parts. First, communicative struc-ture of written speech as specific genre has to be taken into account. This may occur with the concrete analysis of addressivity markers and deictic structures. The second abstract area concentrates on the specificities of writing and the char-acteristics of the genre. For diary writing non-phonemic uses of signs and the regu-larity, and reproducibility of this specific kind of writing were analyzed. The third category asks about the relevance of certain forms of speech for the analyzed higher psychological functions. For the analyzed higher psychological functions

remembering, self-construction, self-monitoring and reflection the analysis of questions and rationales were of certain interest.

The analysis of the concrete linguistic forms combined a quantitative (frequencies) and qualitative approach to gain information about the relevance and the qualities of the analyzed forms.

5.4 Writing-thinking-types

A further research inquiry was how these analyzed linguistic forms could be related to each other from a qualitative point of view. Based on the results of the single investigations a grid was developed (see fig. 1).
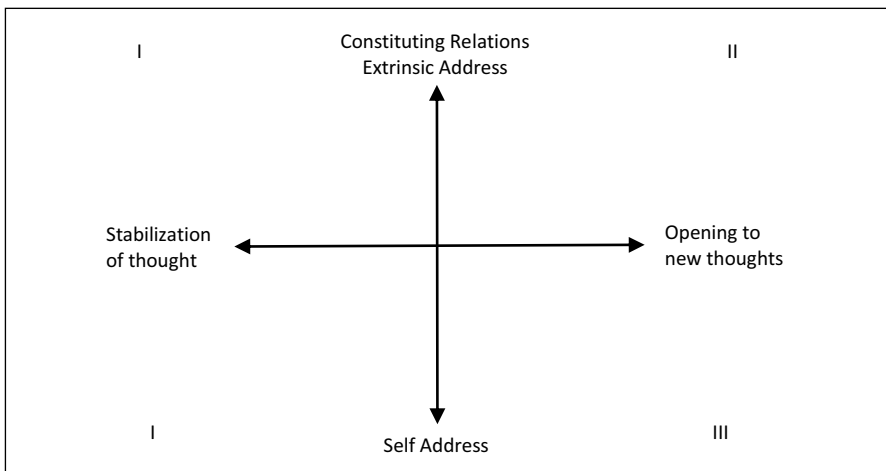

Figure 1: Systematization grid for the quality of the analyzed forms.

All linguistic forms could be allocated to the grid consisting of four quadrants. The vertical axis represents the amount the respective form addresses the writer or another (real or imagined) person. The horizontal axis shows the amount the linguistic form is used to stabilize and fix a thought or to open and develop new thoughts.

Profiles of all analyzed writers were created by filling the grid with the linguistic forms found in their texts. As most forms were used by several writers, the frequencies calculated in the quantitative analysis revealed information about the relevance of the single forms for every person. Through a combination of quantita-

tive and qualitative results individual profiles of every single writer could be identified. By looking at all profiles it could be determined that all writers quite often used stabilizing self-addressing forms. Hence, the difference was mainly if and how much they also used opening and extrinsic addressing forms.

Based on the above observation, the 14 single profiles were selected for possible clustering to different writing-thinking-types. Four characteristic writing-thinking-types could be identified for the analyzed diary-writers (Surd-Büchele 2011). The so-called 'holders' used mainly self-addressing and stabilizing linguistic forms (fig. 1, quadrant IV). The 'daily routine managers' had a focus on extrinsic addressing opening forms (fig. 1, quadrant II). 'self-ascertainers' used relatively much stabilizing extrinsic addressing forms (fig. 1, quadrant I). Finally, a large amount of self-addressing opening forms is found in the texts of the so-called 'individualists' (fig. 1, quadrant III).

On that basis, we could differentiate specific functional forms of written speech: self-addressing and stabilizing speech, self-addressing and opening speech, extrinsic addressing and stabilizing speech, and finally extrinsic and opening speech.

These four forms of speech, which may appear in oral, written and inner speech, may be closely related to the higher psychological functions connected to the individual writer. This leads to assumptions on writing-thinking relations in regard of different higher psychological functions.

5.5 Relations of writing and thinking: proposing a model

Based on the writing-thinking-types and the observation that all writers use stabilizing forms but not all do use opening forms, the following model (see fig. 2) schematically shows relations between writing and thinking.
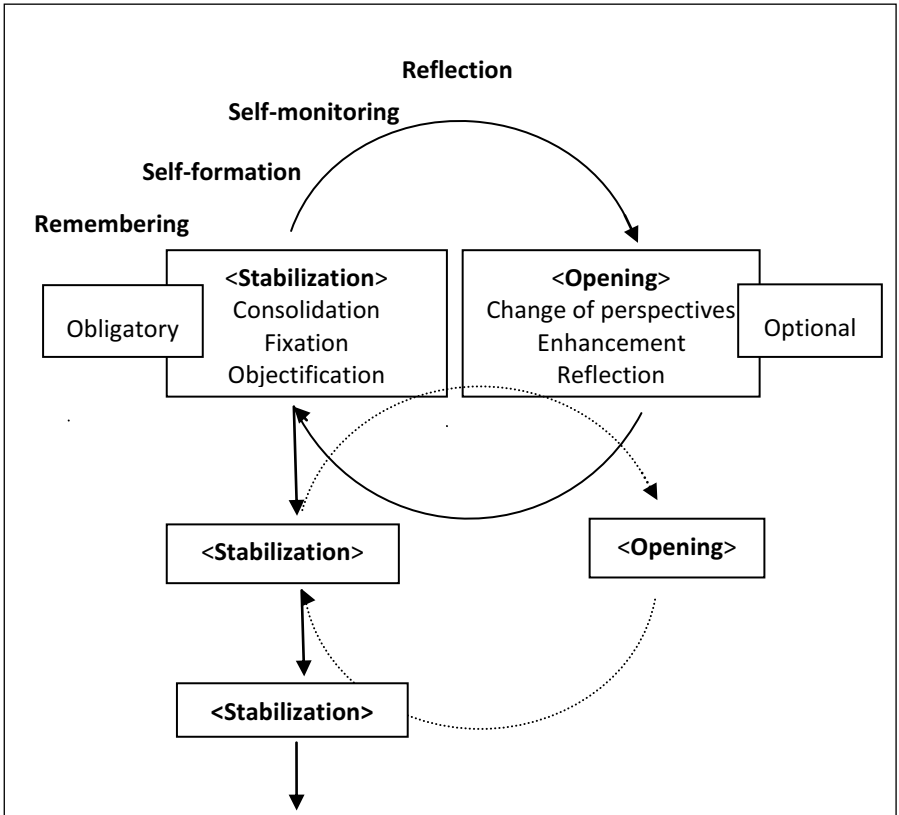
Figure 2: A model of the relations between writing and thinking.

The starting point for all writing-thinking-cycles is the stabilizing dimension of speech, here with its particular forming in written speech. It is assumed that every word amounts to a stabilization of thought. That is why this process is conceived as obligatory. This stabilization may be the final point of a thinking process, but it may optionally also be the starting point for the opening to new thoughts and en-hancement of thoughts – processes which are closely connected with reflection.

It is further assumed that different higher psychological functions require the sta-bilizing and opening dimension in different degrees. The current study on diary writing discussed this issue for remembering (the degree to which writing can be used for reminding), self-formation, self-monitoring and (self-)reflection. For these

higher psychological functions in this specific genre it could be demonstrated that writing to remember primarily uses the stabilizing dimension of written speech. Self-formation processes in diary writing also are quite stabilizing as the writer uses the texts to stabilize his or her position. Self-monitoring processes are a bit more opening as it has to be found out how should be (re-)acted. And traditional reflecting processes need the stabilizing dimension of speech as much as the opening dimension.

Based on the above analysis, all writers were shown to use the stabilizing dimension of writing. The differences amongst participants lie in the use of the opening potential of speech. Only some writers were seen to use forms that can be seen as traces for self-monitoring and reflecting thinking processes. In this context additional research is necessary to understand if they are generally less able to use these opening forms or if they just do not need them for their diary writing as they e.g. just concentrate on writing to remember events of their life.

In closing, it is important to emphasize that writing is not only an attachment or product of thinking, but a dynamic tool, enabling several forms of thinking. Through its specific potential it offers possibilities for stabilization processes, which can be the starting point for opening processes. The concrete relations between stabilization and opening can only be analyzed within concrete genres.

6. Concluding: Points of Entry for further research and writing acquisition

The developed model of relations between writing and thinking leads to further research questions concerning theoretical as well as developmental or pedagogical issues.

One open question concerns the relations between the two complementary dimensions of stabilization and opening. We may find that both dimensions in all forms and genres of speech. Yet little is known about the relations between these two dimensions within concrete genres. One avenue of research would be to investigate these relations within different genres in written and oral speech. Methodological approaches could be a corpus analyses as well as the collection of new data through experiments.

A further research question concerns the acquisition of opening elements in writing and how this is institutionally arranged and supported. More research is required about the relations between speaking-, writing and thinking abilities, where the close connection between oral, inner and written speech must be emphasized. That means that a promotion of oral speech and with that a promotion of inner speech should be a central strategy to research written speech. It is not enough to focus on vocabulary acquisition; the quality of speech must play a salient role in any research project.

During writing acquisition it also has to be learnt to use written speech for oneself and to address it to oneself. The handling of self-addressed forms of speech in general and written speech in particular is an important and difficult task for young writers. Teaching this kind of writing is also a challenge for teachers as self-addressed writing cannot be judged in the same way as writing addressed to others.

Lastly, an individually adequate use of the genre is important for a positive and heuristical use of written language (e.g. Bauermann & Ludwig 1986). That's why knowledge about the genre's conventions but also about the individual possibilities to use the genre has to be taught.

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