

Studying the Process of Writing in a Foreign Language: An Overview of the Methods

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Abstract—This paper provides an overview of the methods adopted in researching the process of writing in a foreign and second language. Cognitively-informed research tends to adopt verbal protocols as a primary method of investigation. In contrast, sociocultural theoretical frameworks typically focus on collaborative writing tasks to elicit data. This overview argues for the need to adopt methods consistent with a sociocultural perspective in studying individual writing tasks.

Index Terms—foreign language writers, verbal protocols of writing, concurrent verbal protocols, collaborative writing, sociocultural study of foreign language writing

In studying the processes of writers, a tension exists between process and product. Typically document analysis and analytic scores are used to explore questions of product. In this paper the author will draw from research to identify how researchers have studied process to better understand what happens during foreign language writing and to determine possible avenues for studying the processes of foreign language writers. Foreign language is defined as a language learned while living in a society where that language is not spoken.

Foreign language writing studies started following the footsteps of research in native language writing (Krapels, 1990). The first investigator to take a process-oriented stance was Zamel in the early 1980s, who adopted a cognitive framework based on the model developed for native language writing by Flower and Hayes (1981). Zamel conducted her investigations using interviews (Zamel, 1982) and observations followed by interviews (Zamel, 1983) and concluded by hypothesizing that, very much like writing in one's native language, composing in a foreign language "is a non-linear, exploratory, and generative process whereby writers discover and reformulate their ideas as they attempt to approximate meaning" (p. 165). After these exploratory studies, foreign language writing scholars have adopted a variety of methods to overcome the challenges of studying cognitive processes, that is to gain access to interior phenomena that are not directly observable (Ericsson, 1998).

Krapels (1990), in a comprehensive overview of writing process research, described the various designs adopted. Methods employed to investigate the process of writing in a foreign language included concurrent verbal protocols (also called think-aloud or composing aloud, the most common method of data collection), but also retrospective verbal protocols, various types of interviews or questionnaires, and direct or videotaped observations. Document analysis was not a preferred method due to its emphasis on the final product, however written texts have been generally used to contrast the data elicited via verbal protocols, interviews, or observation with the quality of the text produced. Due to the overwhelming extent to which think-aloud protocols have been used, I will start by discussing concurrent verbal protocols. While addressing their limitations from an information-processing cognitive framework and from a sociocultural framework, I will introduce other approaches used in the literature to study the process of composing in a foreign language, such as using multiple data sources, retrospective verbal reports, post-hoc analysis of documents, technology enabled methods (i.e. keystroke logging records), and employment of collaborative writing tasks.

I. CONCURRENT VERBAL PROTOCOLS

Concurrent verbal protocols, the verbalization of thoughts while performing a task (for example, see Ericsson, 1998; Ericsson & Simon, 1993; Pressley & Afflerbach, 1995) have been the most widely adopted data collection method in the foreign language writing process literature for they attempt to access the cognitive activities behind the act of writing. Shortly after Zamel's (1982, 1983) explorations of the field of second language writing research, Jones and Tetroe (1987) in a seminal paper adopted verbal protocols to investigate the native language and second language planning strategies of six learners of English. The verbal protocol method allowed Jones and Tetroe (1987) to examine the impact of linguistic proficiency and writing strategies on planning and to conclude that, while the extent of planning differed in native and second language, the process qualitatively remained the same. The use of verbal protocols has been widespread in most of the subsequent scholarship in second and foreign language writing and a separate discussion of individual studies goes beyond the extent of this paper (some widely cited studies are the ones conducted by Chenoweth & Hayes, 2001; Qi, 1998; Roca De Larios, Manchón, & Murphy, 2006; Victori, 1999; Whalen & Mériard, 1995; and Woodall, 2001), but I will rely on critical reviews conducted in the past decade to inform the discussion of this data collection method as employed in foreign language writing research.

Issues with Design in Studies

Roca de Larios, Murphy, and Marín (2002) conducted an extensive critical review of 65 studies conducted in the foreign language writing area in the 1980s and 1990s. After having perused the methodological aspects of the studies they concluded that there were widespread operational issues that needed to be addressed by future research. Not surprisingly, since verbal protocols are a very common elicitation method, criticisms correspondingly related, directly or indirectly, to the employment of think aloud techniques. Specifically, Roca de Larios, Murphy, and Marín (2002) revealed that the information typically reported on the directions provided to the subjects, the context, the unit of analysis, and the characteristics of the participants that may have impacted the quality of the data provided (such as verbal ability or writing ability), was often incomplete or limited. Pressley and Afflerback (1995) recommend that in order to collect data with verbal protocols researchers need to conduct a critical consideration of the characteristics of participants (such as verbal, reading, and writing ability), their familiarity with verbal reports and with the task, their personalities, the characteristics of the text and its physical characteristics, the directions provided, the inclusion of practice tasks, the coding strategies, the reliability, the criteria used to select verbal reports for inclusion, and the theories used in framing.

The lack of information on the directions provided to the participants is particularly problematic since different prompts and elicitation techniques encourage the elicitation of different types of data (Jourdenais, 2001). Firstly, the prompt may either support introspective reports that involve explanations, or direct their participants to think aloud without making interpretations (Jourdenais, 2001). Reports can be metalinguistic, “verbalizations that require subjects to verbalize additional specific information” (Bowles & Leow, 2005, p.417), explaining their writing processes, or nonmetalinguistic, limited to verbalizing thoughts, thus eliciting different types of data (Bowles, 2008; Bowles & Leow, 2005; Leow & Morgan-Short, 2003; and Wigglesworth, 2005). Pressley and Afflerback (1995) and Jourdenais (2001) advise against selecting metalinguistic reports and encouraging interpretations and explanations for it may affect subsequent performance in the task, a phenomenon known as reactivity. Therefore, knowing the precise prompts and directions provided to the participants is key to a correct interpretation of the data. Secondly, researchers make decisions on whether to prompt participants (regularly or during pauses) to continue their verbal reports while performing the task and it is likely that designs that include reminders to think aloud (Pressley & Afflerbach, 1995) will hold more abundant data and perhaps data of a different type. Therefore, details on the strategies used by the researchers should be included in their report to build solid arguments toward the study conclusions. Thirdly, in order to increase the chances to obtain rich verbal protocols some researchers design their study to include training sessions or some form of modeling of the composing aloud technique (for example, Stevenson, Schoonen, & de Glopper, 2006, describe in detail their protocols for modeling). This may guide the participants to focus their attention on certain strategies rather than others, therefore impacting the data it is supposed to elicit (Jourdenais, 2001). For example, modeling a re-reading strategy may lead the participant to display use of re-reading strategies that the participants may have not employed otherwise. Finally, since warm-up sessions will affect the quality of the think-aloud by reducing the impact of the think-aloud on the processes involved in the task (Ericsson, 1998), whether they are implemented or not is important information to build credibility.

As previously stated, the issues that Roca de Larios, Murphy, and Marín (2002) disputed in second or foreign language writing research are overall addressable with more complete reports and thoughtfully planned research designs. I will now proceed to discuss more general concerns on the veridicality and reactivity of the method itself as employed in first or second language research. The first series of comments is from information-processing or cognitively-oriented theorists and scholars. It is followed by examples of studies that attempted to address these concerns. The second set of issues are raised from a socio-cultural paradigm of research and are followed by a brief presentation of the methods adopted in socio-culturally informed investigations of foreign language writing.

II. LIMITATIONS OF CONCURRENT VERBAL PROTOCOLS

A Cognitively-Oriented Framework

Jourdenais (2001), based on a survey of previous studies, concluded that the value of verbal protocol use as data collection procedure in language learning cognition research is demonstrated, but also acknowledged some limitations. There are concerns on the reliability of the method, especially in contexts where the participants may feel particularly compelled to give to the researchers what they think they want. Furthermore, there is a debate on the veridicality of the method. While the issue of possibly fabricated information seems to apply to a larger extent to retrospective protocol, the completeness of the reports, whether in first or second language, has been questioned also for concurrent verbal protocols (Ericsson, 1998; Jourdenais, 2001; Russo, Johnson, & Stephens, 1989). Finally, there are founded concerns on whether all writers have the metalinguistic ability or the access to the information to describe what they are thinking. The latter concern relates to the fact that individual differences were detected in the way individuals approach verbal reports (Jourdenais, 2001, Wigglesworth, 2005), in their need to be prompted to keep talking, and in the level of comfort with the technique (for example, some felt awkward and expressed a sense of uneasiness in a study conducted by Jourdenais, 1998). In this regard, it is noteworthy that Whalen and Ménard (1995) discarded 10 out of 22 writers in their pivotal study because those participants could not think aloud while composing. The concern about the feasibility of thinking aloud while writing is made even more complex in foreign language writing, since the process itself poses a

big demand of cognitive resources in the writer (Manchón, 2009). Requesting additional resources to verbalize thoughts may go to the detriment of other processes related to the writing task, such as idea generation or monitoring.

Attempts to partially address these issues can be made through careful design of data elicitation techniques and with thoughtful data coding. For example, in order to conduct a sound data analysis and interpretation, Jourdenais (2001) recommends taking into account the context when analyzing verbal protocols (stressing the usefulness of using a video recording), to compare the analysis with the text produced, to include multiple data sources, and to adopt consistently a theoretical framework to inform the analysis.

Adopting Multiple Sources or Alternative Data Collection Methods

Several scholars attempted to address the limitations of verbal protocols by triangulating their data sources. By doing so, they aimed at accessing otherwise non-directly observable writing processes via verbal reports, but additionally they scrutinized the reports using cues from other sources to support the data analysis and interpretation.

For example, Cumming (1987) integrated data from composing aloud with observations and questionnaires. Several researchers designed studies that included both concurrent verbal reports and retrospective reports, such as Qi (1998) and L. Wang and Wen (2002), often adding other sources such as written product quality (Armengol & Cots, 2009) or written texts and questionnaires (W. Wang, 2003).

A few scholars adopted retrospective verbal reports in place of concurrent protocols. Jourdenais (2001) warns that retrospective verbal reports may display inferences or conjectures of the subject rather than accurate memories. However, some strategies may minimize this phenomenon, such as showing recordings of the behavior or the actual product to elicit specific information, preferably immediately or shortly after the completion of the task rather than after more time elapses. To my knowledge, the research studies that employed retrospective reports adopted written products as a parallel and crucial data source. For example, Sasaki (2000) analyzed written texts, videotaped paused behaviors of the writers while composing, and stimulated recalls. Ellis and Yuan (2004) analyzed the compositions in terms of fluency and complemented the information with retrospective interviews.

While mainly adopted in product-oriented scholarship (such as the contrastive rhetoric area), post hoc analysis of documents has also been used in foreign language writing process research (Wigglesworth, 2005). Typically, it has complemented concurrent verbal protocols (for example, see Whalen & Ménard, 1995, who integrated their composing aloud data with an analysis of textual drafts), but an attempt to investigate the writing process without verbal reports, based on product analysis was made by Kobayashi and Rinnert (1992). In order to draw conclusion on the process while analyzing the product, the study design constrained the participants into either translate or compose their text directly. This way, it was possible to compare the products and see differences between the two groups as related to different composing strategies. However, it is unclear whether imposing a composing strategy on a writer leads to the enactment of the same processes that would happen in naturally occurring composing. As this example illustrates, a focus on the product can give limited information on the process, and here lies the rationale for employing verbal protocols in foreign language writing research.

More recent developments in technology have enabled other options to incorporate data from the written product into writing process analyses. Stevenson, Schoonen and de Glopper (2006) triangulated their verbal report data with key-stroke logging records. The availability of consistently improved technologies for tracking the text development opens up new possibilities to investigate the process of writing through an analysis of the product, the text, in its making, in a way that would have been too time consuming and labor intensive before the advent of such software.

A Socioculturally Informed Framework

More substantial criticisms to concurrent verbal reports question their representativeness of the writing task as it would have occurred without verbalization and their representativeness of thought. A major area of debate arises from reservations that verbal reports might change the task of writing itself (Jourdenais, 1998). According to Ericsson (1998), who worked in native language research, while verbal reports affect the time spent on a task by increasing it, there is no evidence that they alter the process and the performance, provided that the participants are allowed warm-up activities and provided that the verbal reports do not require metalinguistic comments or explanations (a strategy that leads to changes in the performance, typically by improving it).

Ericsson's (1998) conclusions are not subscribed by theorists that adhere to the socio-cultural tradition. While acknowledging that not all thoughts may be verbalized, Ericsson and Simon (1993) assert that the verbalized thoughts are valid and consistent with the subject's cognitive processes. The scholars base their conclusions on the comparison of verbal reports with task analysis results. Their work was based on the premise that concurrent verbalization leads to higher validity and that the validity decreases when time between task and verbalization elapses in retrospective reports. Sociocultural perspectives question the assumption that inherent cognitive processes can be verbalized and communicated, since the very act of verbalization is inextricably connected to thinking. Major representatives of this theoretical stance are Smagorinsky (2001) in the field of first language writing research and Swain (2006) in the area of second language acquisition.

First of all, Smagorinsky (2001) warns about the fact that specific cultural conceptions of the world are embedded in the verbal protocol, with consequences on the legitimacy of interpretations by the researcher that carry the "risk of assuming that the researcher's understanding of words is the true understanding, and that the participant's role is to gravitate toward the researcher's conceptions" (Smagorinsky, 2001, p.236). McDonough and McDonough's (2001)

study constitutes a rare example to attempt to address these concerns by having both the researcher and the participant separately analyze and interpret the verbal report transcriptions.

Furthermore, Smagorinsky (2001) argues for the social role of speech in research methodology. Speech changes the task, for speech is inherently directed to somebody (the concept of addressivity in the work of Bakhtin). In this regard, Smagorinsky (2001) suggests that verbal protocols can be viewed as a conversational turn rather than a representation of writing processes.

Most importantly, Smagorinsky's (2001) socio-cultural stance influence is paramount in the belief that speech influences thinking. In this view, speech has a mediation function and thinking and speaking are inseparable. This is in sheer contraposition with cognitivist and information-process oriented views of speech as a manifestation of independent and pre-existing internal cognitive processes. As a consequence of the fact that speech and thought are viewed as interrelated and inseparable, Smagorinsky (2001) argues that verbal protocols cannot be considered a rendering of cognitive process, rather they are a constitutive part of the cognitive processes and as such they constitute an object of study in themselves, rather than a method to access internal processes.

Swain (2006) raised similar arguments from the foreign language area of research. Since language and thought are integrated and language is a tool for thinking it is not legitimate to use verbal reports, whether concurrent or stimulated, as a procedure to collect data on presumed internal cognitive processes. According to the output hypothesis (Swain, 1985) the act of producing language, far from being a simple display of acquired knowledge, is an act of learning in which knowledge is transformed and advanced. This is how verbalizing affects the task processing itself: it is "a process of comprehending and reshaping experience" (Swain, 2006, p. 97), therefore it produces meaning rather than merely reporting it. In virtue of this process, Swain (2006) argues that verbal protocols should be considered part of the treatment, rather than a data collection method, supporting an argument, similarly to Smagorinsky (2001), that verbal protocols should be considered an object of investigation and analysis. Verbal protocols affect the thinking processes in a threefold fashion (Swain, 2006): a) they lead attention to specific aspects of the experience, settling the meaning in that direction, and thus transform thought; b) in doing so they create an artifact, an object to manipulate; and c) the created artifact could be internalized, once again impacting cognition. Swain (2006) supports her arguments with evidence from studies in second language acquisition and other areas of research. A recent empirical study by Uggen (2012) had findings consistent with the hypothesis that verbal reports are a source of learning and consequently affect the task. The 30 students involved wrote a text, underlined salient parts of it while reading it aloud, rewrote the same essay, had a first grammar post-test, responded to a stimulated recall, and finally had a second grammar post-test. Based on the data collected, Uggen (2012) concluded that the output influenced subsequent noticing patterns and the students' grammar awareness.

Other empirical studies (Bowles, 2008; Bowles & Leow, 2005; Leow & Morgan-Short, 2004) suggested that reactivity is not an issue with non-metalinguistic verbal reports, possibly due to differences in the operationalization of the concept. In fact, Bowles (2008) and Bowles and Leow (2005) measured the impact of non-metalinguistic and metalinguistic verbal reports on text comprehension and on subsequent use of a specifically targeted grammar structure. Possibly a focus on the impact of verbal reports comprehensively on language and on the writing process could have different results. The debate is far from settled and more research is needed.

Socio-culturally sensitive data collection methods

As the previous discussion highlights, from a socio-cultural perspective verbal protocols of writing are not considered a method to access data on cognitive processes, rather an intervention that affects the data. Consequently, scholars working within a sociocultural framework are exploring alternative data collection methods to investigate the foreign language writing process, specifically using recordings of dialogues that occurred during collaborative tasks (Wigglesworth, 2005). The first steps in this direction were taken in the 1990s, when DeGuerrero and Villamil (1994) analyzed interactions between pair of students engaged in collaborative revision tasks. Consistently with a sociocultural framework, the interactions constituted an object of study rather than simply a data collection method. While DeGuerrero and Villamil (1994) focused solely on revisions, Antón and DiCamilla (1998) studied the interactions of five pairs of foreign language writers working on collaborative writing tasks and Otha (2000) examined a pair translation task.

Swain and Lapkin (1998) assigned a jigsaw writing task to a pair of students and analyzed their dialogue. The unit of analysis was language related episodes, discussions of linguistic issues on lexicon or form. This design allowed to see how language was used both for communication and as a cognitive tool and how the dyad co-constructed new knowledge through the interaction. Swain and Lapkin (2002) followed-up on the same task by asking the pair to notice the differences between their text and a native speaker reformulation. Data sources were the taped noticing, stimulated recall interviews, rewriting of the same text, and general interview on perceptions. This design allowed a complex interpretation of the noticing behaviors of the participants to develop.

Storch and Wigglesworth (2003) assigned a text reconstruction and a joint composition task to pairs of students and analyzed the transcripts of the conversation with a focus on native and foreign language use. To my knowledge there are no studies that applied a sociocultural lens to investigate foreign language writing as a process without using collaborative writing.

III. CONCLUSIONS

The above overview of the methods adopted in the literature to study the process of writing in a foreign language sanctioned the vast popularity of verbal protocols as a data collection procedure. Many studies adopted concurrent verbal protocols, with a few exceptions adopting retrospective protocols, often as integration to concurrent reports. Even if more attention is needed on reporting information on the data collection practices and on the participants (Roca de Larios, Murphy, & Marín, 2002), several studies triangulated their data with multiple sources. The potential to access cognitive processes that would not be otherwise observable seems to outweigh concerns regarding the veridicality and reactivity of the method. At the same time, scholars in the socio-cultural tradition employed collaborative writing tasks of various types to be able to witness the process of writing while avoiding the reactivity of concurrent verbal reports. A limitation to this approach so far is that it does not respond to questions regarding non-collaborative writing, whose processes remain largely non-verbalized spontaneously, thus hard to access directly. Future research can explore how to access non-collaborative writing tasks maintaining a sociocultural perspective in the writing process.

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