Effects of Planning and Language on Constructing Patterns of Meaning

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Introduction

In order to make the international exchange of research possible, scholars have needed to agree on a lingua franca, a language that is used by all, or at least by most, of the participants in the academic community. While in former times this language has been Latin and then German (Kretschenbacher, 2001), today this language is English. However, it is not only the language per se that is set as the lingua franca English, but it is also academic genre conventions executed in the Saxonic (Galtung, 1981) context. Since the expectations of context are that not only content but also language and genre be on the superior level of the target group (Pérez-Llantada, Plo, & Ferguson, 2011; Swales, 2004), the cognitive demands on foreign language (FL) writers can become so great that the writers are not able to work effectively, which, in turn, is demotivating (Galbraith, 2009; Pérez-Llantada, Plo, & Ferguson, 2011; Van Weijen, 2008). Another condition leading to demotivation has to do with the editorial dispositions of actual publications: although high-standard journals explicitly invite international submissions, stating that authors' English does not need to be on a first language (L1) level, papers are nevertheless rejected for reasons of grammar and genre (Armstrong, 2011; Lillis & Curry, 2010; personal communication with editors).

In order to participate in the international exchange of ideas, FL writers thus need to find ways of dealing with the cognitive demands of FL academic writing. Some writers make conscious use of their L1 by first creating the text in the L1 and then translating it into English (Pérez-Llantada, Plo, & Ferguson, 2011). Other strategies are chosen subconsciously. One of the well-known subconscious strategies is reducing the fluency of the text production process: studies show that there are distinct differences between a writer's writing processes in the L1 and in the FL in terms of general productivity, in the lengths of "bursts"— the passages written without pausing or revising the text—and in other aspects (Breuer, 2015; Chenoweth & Hayes, 2003). These differences have an effect not only on the lengths of the texts that are generated but also on the quality of the texts. Texts that are generated in a more fluent manner usually contain more ideas and arguments, are more informative and are easier to read (Galbraith, 1999, 2009).

Because of this interrelation between generated ideas and writing fluency, and in order to determine whether one can enhance thinking in writing (Menary, 2007) by explicitly stimulating writing fluency via planning methods, a test was conducted with L1 German students. They wrote essays in both their L1 German and their FL English, using different planning techniques (note-taking and freewriting; see below). The results showed that the writers were indeed better able to write their essays fluently after having planned the essay by freewriting—in their L1 as well as in their FL (Breuer, 2015). Because fluency and idea generation are interrelated (Galbraith, 1999), an analysis of the number and the quality of the generated ideas was conducted next. It was assumed that writing a text under

different planning conditions as well as in different languages would have an effect on the number and on the adequacy of the ideas for the task.

Idea Generation

The generation of ideas is a crucial factor in the writing process. It is the starting point for creating texts in most writing models (e.g. Flower & Hayes, 1984; Hayes, 2008). Without ideas, writers do not need to plan the text and they do not have anything in their articulatory buffer for execution. It is debatable whether this process works independently of language, since idea generation is supposed to take place in a language-independent semantic structure by different linguistic models (e.g. Levelt, 1989). Jackendoff (2003), for example, claimed that the semantic structure in his *Tripartite Architecture* is independent of the linguistic structures like syntax or phonology. It is, rather, an area in which both long-term memory and information given through a text or through a conversation are interrelated with these linguistic elements (see Carroll, 2002; de Bot, 1992; de Bot, Lowie, & Verspoor, 2005; Jackendoff, 2002, 2010; Levelt, 1989, 1999; but for opposing views, see Oksaar, 2003; Whorf, 1956). Jackendoff (2012) also stated, however, that conscious thinking often takes place in a form of mental communication which makes use of language in a distinct manner. In academic writing, this can be the dominant form of communication since many abstract ideas are stored in a linguistic form. Since the linguistic structures are closely related to the semantic structure, language can also activate a network of ideas via language since concepts and words are all linked together (see Van den Bergh & Rijlaarsdam, 1999, 2007 described below).

Since writing is a process which works actively with language, the interrelation between thinking and writing has been seen as crucial from the very beginning of modelling the writing process. Bereiter and Scardamalia's (1987) *knowledge telling* and *knowledge transforming* are the final points of a long scale of how this thinking and writing might interact. In knowledge telling, the writer simply executes knowledge in a standard structure without changing the content and the information structure inside the long-term memory. Since the writers do not actively work with their knowledge here but only recall it, this would be the lowest point on the scale. When the writer deals with an assignment which asks for the active use of knowledge for solving a task, however, the writer needs to work with the knowledge stored in his or her memory. When an academic writer seeks to meet the demands of a new target audience, for example children, the writer should understand which kind of information this audience is able to grasp, how information is conveyed, and which metaphors or child-appropriate explanations might help in getting the content across. In this process, the writer transforms his or her knowledge by creating new connections amongst existing knowledge (the "highest" point on the scale).

More recent writing research has found that idea generation is not often performed separately from translating the idea into words (in the following: *formulation*) but that the writing processes interact. The formulation process can enhance idea generation, activating old knowledge or generating new knowledge. Van den Bergh and Rijlaarsdam (1999, 2007), for example, assumed that a spreading activation occurs when writing. The text that is produced activates other semantic elements:

> Generally speaking, spreading activation accounts for the fact that one concept may facilitate recalling of another, associated concept. Which other concept(s)

> is (are) activated depends on the structure of the network. The main point to be made here is that the attentional state (working memory) changes due to text production. (Van den Bergh & Rijlaarsdam, 2007, p. 127)

With the help of think-aloud protocols, the authors analysed how and when writers generate ideas. They found that there are different types of idea generation: in *Assignment-Driven Generation*, the writer generates ideas when reading the assignment; when ideas are generated in the process of reading the text already read thus far, this is *Rereading-Text-Driven-Generation*; *Translation-Driven-Generation* labels ideas generated by the associations (images, strings, etc.) to the words (their images and strings) that are formulated; *Generation-Driven-Generation* describes the activation of other ideas by the idea just generated. Finally, structuring of a text can also lead to new ideas. The probability of occurrence of the different types of idea generating at a specific point and its effectiveness at this point is context-sensitive. For example, the Assignment-Driven-Generation is most effective at the beginning of the writing process since it initiates the generation of the content. Taking a look at the assignment in the middle or at the end of the writing process, on the other hand, often indicates that the writer is unsure about whether he or she has understood the task correctly and whether he or she has written accordingly (Van den Bergh & Rijlaarsdam, 1999, 2007).

Galbraith (1999) proposed a *Dual Process Theory* for writing: in the process of knowledge retrieval, the writer retrieves content "from an explicit store of knowledge in long-term memory" (2009, p. 17). The writer does not gain any new understanding of the topic in this process (Evans, 1989). However, there can also be a knowledge-constituting process in which the writer gains understanding of the topic, using text production itself to generate more knowledge. This can be done in spontaneous writing, in which writers generate ideas that are afterwards shaped in terms of their rhetoric in order to bring them into an adequate form (e.g. Elbow, 1973). "Writing sentences can lead to more than just a change in the writing plan. It can also provide the occasion for writers to change their understanding of the topic" (Kaufer, Hayes, & Flower, 1986, p. 124).

The underlying idea is that writers store and process the knowledge that they encode in writing differently from the knowledge to which they apply problem-solving strategies: the sentences writers produce are stored in episodic memory; these are local cycles which are situated in global cycles. Sentences produced at a later point then bring up material that was previously suppressed. This can lead to conflicting ideas, forcing the writers to reflect more thoroughly on the topic and perhaps enabling them to adjust their views (Sharples, 1996). Since the ideas are formed in writing, they stand in relation to each other. Texts by the spontaneous writer are thus not expected to exhibit problems with coherence but should have an "organic unity" (Galbraith, 1999, p. 151) and thus be of better quality than texts that are produced after a pre-planning phase in which the writer consciously searches for ideas. This suggests that it would be better to use problem-solving strategies in revision and in the interface between successive drafts, while the knowledge-constituting process should be allowed to create an interaction between problem-solving and thought (Galbraith, 2009; Galbraith, van Waes, & Torrance, 2007; Klein, Bomann, & Prince, 2007).

However, in FL writing the processes might work differently because of the higher cognitive demands. As Pérez-Llantada, Plo & Ferguson (2011) showed, Spanish professors who were interviewed about their experiences in L2 English writing for publication reported

considerable difficulty in performing on a high academic level in the foreign language. The most intellectually demanding tasks—writing the introduction, discussing the results and coming to clear conclusions—were especially burdensome. Writing then ceases to be a method that helps to make thinking easier. As one of the interviewees put it,

> you become unsatisfied because you don't write as easily as you would do it in Spanish. In Spanish, when you write you can express something in a way that you like, that looks nice, not a literary piece of art, but something that does not sound poor and this is what happens when using English, you don't say what you know, only what you can. (p. 26)

It is therefore essential to the success of international academic communication to find methods for fostering FL writing and thinking processes.

Methods
In order to test whether different planning methods have an effect on the quantity and the types of ideas generated, as well as whether these effects differ in L1 and FL, a study was set up at Cologne University. Ten L1 German students of English philology were asked to write two academic essays in both German and English in four sessions. They were also asked to first write a simple essay (SE) in English in order to ensure that their English was of an adequate level (C1) (topic: *Take on the view of your writing instrument and let it describe you as a writer.*). For the SE, they had 20 minutes time, and for the academic essays, 45 minutes. The participants were on average enrolled in their eighth semester; eight were studying to become teachers and two were in the BA/MA program. Although the minors of the participants differed, they had all attended at least one class on English essay writing, and they also wrote essays in German and in English during the course of their studies in order to receive credit points. One could thus presume that they were used to the demands of writing academic papers—in their L1 as well as in their FL—and that they knew which number and which kinds of ideas were expected to be discussed in an academic essay.

The essay topics were taken from fields of general interest to students. The first German essays dealt with the dominance of the English language in the academic context, while the second dealt with the effects of the Bologna process on German university life. The first English essays dealt with the cultural differences in the academic genre, and the second dealt with the censorship of certain types of computer games because of their (presumed) relationship to the probability of becoming a person who commits school shootings. The students were given a source text for each topic which they were asked to use actively in their discussion, and which also helped as a starting point for the generation of new ideas in order to complete the assignment.

Two of the essays, one in each language, were planned with the help of note-taking (L1N and FLN) (Figure 1).

> For planning the essay, **please use the note method** (writing down notes, then indicating at which place in the text you will use this idea/argument).

Figure 1. Assignment for planning with the help of note-taking.

Note-taking is the planning method that is most frequently taught at our university (if planning is taught at all). The students were asked to write down their main ideas in keywords and to number the ideas in the order in which they wished to use them in the essays. They did not have a timeframe set for this process. Planning with the help of notes does not make an active use of writing and the communication between text and writer for generating ideas. This might be a disadvantage for idea generation (see above), but at the same time it might lighten the cognitive demands of planning the FL texts for some participants (Cumming, 1990, 2001; Krings, 1989).

The other two essays (L1F and FLF) were planned with the help of focused freewriting (Li, 2007) (Figure 2).

For planning the essay, **please use the free-writing method** (write down everything that you think of in respect to the topic in five minutes. Do not stop writing but write down "I don't have any idea" or something along that line until new ideas come up).

Figure 2. Assignment for planning with the help of freewriting.

After having read the source texts and the assignments, the participants wrote down all the ideas that came to their minds concerning the topic of the assignment. They were asked neither to make any pauses nor to correct any errors they perceived during the execution process. For freewriting, they had (at least) five minutes time, after which they could write the essay in the method they chose, but they could also go on freewriting as long as they wished. Freewriting has the advantage of "forcing" writers to make use of the writing process and the written text to generate ideas but at the same time might lead to higher cognitive demands in the FL, where ideas are generated and performed in a language that is not the one ordinarily used and where the network of semantics and lexicon might be less dense (Breuer, 2015).

The essays were not written under real-life conditions (i.e., in class and by hand); it was rather a case of the writers performing under laboratory conditions. They wrote the texts in an office, together with only the analyst, and their writing processes were recorded with the help of a keylog program (*Translog*), which records how the writers perform their writing processes. This setting was chosen since fluency is a crucial factor for using writing for thinking (Menary, 2007), and it was expected that there would be a relationship between the quantity and (maybe) the quality of ideas that were generated during the writing process. These factors could not have been recorded and analyzed in the real-life setting.

The final texts (plans, as well as essays) were analyzed with regard to the number of ideas and the types of ideas generated. The ideas in the texts were first singled out and then counted and classified by two independent raters according to seven categories. The interrater reliability was 97.6%. When there were discrepancies, a third rater was invited for further classification of these cases.

The first category is named *quotations,* that is, the ideas that the writers took over from the source texts and marked as being taken over (= direct and indirect quotations). The second category is *unmarked quotations*, that is, the ideas that the writers adapted from the source texts but did not mark as such. (This subdividing into two categories makes particular sense, given that the current plagiarism discussion in Germany has led to a high degree of

worry amongst students about submitting an improperly documented paper and thus receiving a failing mark. The students in the study could, therefore, possibly have made an extra effort to cite their sources clearly.)

The category *own ideas I* contains all the ideas which the writers generated themselves, that is, those which were stated neither in the assignment nor in the source texts. These ideas are on a higher level in Taboada and Mann's (2006) *Rhetorical Structure Theory* (RST), which forms the basis for the classification. They are independent from one another, that is, they are thoughts that are only related to one another via the assignment. In an essay on the interrelation of academic findings and language and culture, these might be "[a] thinking works independently from language [*thesis*], but [b] it is education that guides us into certain directions [*antithesis*]." Elements of the RST, such as the *elaboration* of an idea or an *example* as proof for a claim, are ideas that were counted as elements of the category *own ideas II*. This category includes those ideas that the writers generated themselves which are not independent of one idea but rather substructures of the ideas on the higher level.

The category *own ideas III* differs from the former two categories. The division into a third category is the result of the writers generating independent ideas unsuitable for content and genre. Discussing the German foreign minister's ability to speak in English, for example, is not relevant in an essay about English in academia because it does not fit the topic. Discussing one's brother's positive attitudes towards violent computer games and the (lucky) fact that he has still not committed any school shootings does not fit to the genre of an academic essay. *Own ideas III* might be elements of the higher level (thesis, . . .) or of the lower level (example, . . .) of the rhetorical structure but were not subdivided any further.

Two categories were created in addition which do not consist of ideas in the strict sense but which document, rather, the writers' manner of dealing with the task of generating ideas, or their failure to do so, respectively. The former contains the *commentaries* that the writers made in the freewriting phase, in which they commented on the technique of freewriting or on themselves and their writing process so far. iPhone (the alias chosen by one of the test participants [each of whom selected an alias for the study]), for example, was not overly happy about using the method of freewriting, making the comment: "freewriting is bullshit. Sorry for the expression." It is noteworthy that iPhone keeps the analyst as the reader in mind and feels the necessity to excuse himself, although freewriting is meant to be conducted in an uncensored fashion.

The last category is the category of *nonsense*. It contains expressions like *blablabla*, *dooledidoodle*, that is, those words or non-words the writers typed in order to fulfil freewriting's demand of uninterrupted execution.

The latter categories helped in making transparent how successful the writers were in generating ideas fluently, with what kinds of problems they had to fight, and which methods were used when generating ideas.

In the following, two plans are shown (one note-taking and one freewriting), and it is explained how the analysis was executed. Figure 3 presents iPhone's plan in the note-taking condition on whether or not culture has an influence on academic/scientific work. It is presented in a table that was used for the statistical analysis of the idea-generating process. Figure 4 is Siebenmorgen's freewriting plan (as plain text).

Text	Rhetorical element	New?	Used?	Hierarchy

Text	**Rhetorical element**	**New?**	**Used?**	**Hierarchy**
Essay Plan:	Organizing			

generally I agree with the view presented in the text and quotation	Evaluation	new	yes	own ideas I

- relationship: Culture, Logic and Rhetoric (title)	Topic Organizing	new	yes	Quotation
- realized by different examples (English, Arabic, Asian, Spanish)	Examples	new	yes	Quotation

Aristotle: Latin philosopher	Argument	new	yes	own ideas III
(Roman culture and philosophy)	Elaboration	new	yes	own ideas III
--> Logic would have been different but the whole of our science nowadays would not have been totally different.	Thesis	new	yes	own ideas I
Independent scientists ...	Elaboration	new	yes	own ideas II

Figure 3. iPhone's plan for the FLN essay about the role of the scientists' cultures for their work.

iPhone's notes are very well organised and clear. They show that he has a standpoint (= although Aristotle's logic would have been different if he had been Mexican, this would not have had any influence on today's science; [*own ideas I*] which is because of the independence of scientists [*own ideas II*]). He lists the arguments that he wants to take over from the text on Kaplan's thesis, which he read for the essay (*quotation*). However, one of his main arguments about Aristotle and his logic is based on the false assumption that Aristotle was Latin. Because of this, it was not evaluated as *own ideas I*, but as belonging to the category *own ideas III*. All his ideas generated are new. (Note that ideas are marked as *new* when they were not written down by the participant before, which does not mean that the idea itself is new.)

The freewriting example contains a large number of errors, which is the result of the high typing speed in this planning process and because of the proscription to correct them. The text does not represent Siebenmorgen's English competencies.

okay, let's start the media and violence mh... i don't know... so there is some sort of link but it seems that many dstudies ndon't hstop to think if tit is the other way around: so that maybe aggressive people also watch more violence

and prefer it tononviolent media than people who aren't aggressive in the first place nstead of the media making people aggresseive. Furthermore, I don't knowhow... ham aähm ehm what am I going to write. it's a difficult topic there are pobviopulsy many, many different concluision... probably it's something in the middle: so that rthere is something like ehm what was I going to write something in the line of: some vion no s lots of violence in the media will actually make you moreaggressive especially children as their havbits are still forming, but that's less so with gropwn ups so maybe censoring it with an age limit would be c gouog... w´fand then there is: the following point that there are ltos of other factors: for wexample socuiialisation: if the kids have a good, caring loving family they won't get violent: as the last study says of somebodey: dit's the EINSTELLUNG of the parent'ss toward violence that influences kids... so if parents don't like violence on TV they will teach that to their kids and they will also dislike violence... I have to stop correcting myself there must be oanother point there must be something else... m some studies don't see any connection beteen w there's a w missing n

Figure 4. Siebenmorgen's freewriting plan on censorship of violent video games.

Siebenmorgen starts freewriting by commenting on what she is about to do and on her own inability to take a position on the censorship of media (*commentaries*). This comment and the reference to the assignment is followed by her evaluation of the studies linking video games to violence: it seems that many do not consider the possibility that video games do not create violence but instead attract already aggressive people (*own ideas I*). She then seems to have followed a subconscious feeling that she has more to say about the argument ("Furthermore"), but then no idea comes up, and she repeats that she does not know what to write. She comments on the topic and its difficulties (*commentaries*), and in doing so seems to have come to find her position on the task which is "something in the middle" (*own ideas I*). Again she starts to write but finishes the sentence as if it were a "think-in-print" protocol ("what was I going to write something in the line of . . ."). This worked as a starting point for a number of arguments she wants to make for censoring video games. She then expresses her ideas for arguments against holding video games responsible for incidents like school shootings (*own ideas I*). It is interesting to see that she uses a German word when the English word does not come up automatically (EINSTELLUNGEN = attitudes). After having written down this high number of arguments, she comments on herself executing freewriting ("I have to stop correcting myself") before she starts to elaborate on studies on the connection of violence and media. However, when she is told that the obligatory timeframe for freewriting is over, she does not finish this idea but stops immediately in order to start the proper essay.

In the following, a short analysis is made of the fluency and the idea generation in the production process as a whole, followed by more focused and separate analyses of the idea generation in planning the essays and writing the proper essays. It was assumed that the number and quality of ideas varied not only between freewriting and note-taking but also between the languages.

Results

Figure 5 presents for each condition the mean number of characters[1] the participants produced in planning the essay (blue bar) and in writing the final essay (green bar). (For a closer analysis of the productivity and the fluency of the writing processes, see Breuer, 2015.) Analysis of the fluency of the text production processes showed that the participants' execution varied strongly between the different languages and the different planning conditions. The participants produced proportionally more text in less time in writing the simple essay; this is the text type they produced most fluently (and if they had had the same timeframe as for the other essays, the final texts would likely have been on average 4858 characters). The participants produced the largest number of characters and the longest academic essays in the L1 (in both planning conditions). In both languages, the number of

Figure 5. Number of characters produced and number of characters final essay.

characters executed (and deleted during the writing process of revising and rewriting) and the lengths of the final texts were larger in the freewriting condition. The difference between the average number of characters produced in planning and in the final texts in the SE (25.28%) is distinctly less than the difference in the other conditions (L1N: 35.13%; FLN: 38.36%; L1F: 42.27%; FLF: 45.87 %). That is, the participants revised more and more productively in the academic essays, and they did so most elaborately in the freewriting conditions.

Because of this, it was expected that more ideas would be formed in the freewriting condition because of the higher productivity. Figure 6 shows the total number of (new) ideas generated on average in the different text types. The highest number of ideas (27.7) was generated in the L1F, followed by the FLF (26.7). It was lowest in the L1N (18.2), and nearly as low in the FLN (18.7). The differences between the L1 and the FL were low between the different planning conditions: 2.67% in the note-taking condition and 3.61% in the freewriting condition. In contrast to this, the intra-language differences between the note-taking condition and the freewriting condition were high: 34.3 % in the L1 and 30% in the FL.
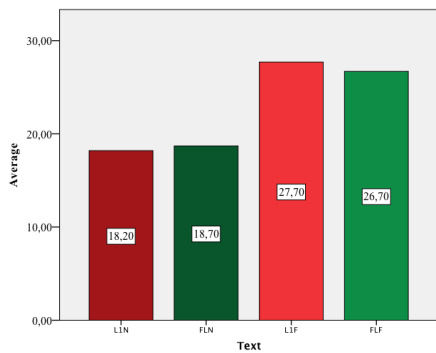

Figure 6. Total number of ideas.

Note that the analysis of the total number of ideas includes not only the types of ideas that were relevant for completing the task, but also the *commentaries* and the elements in the idea category *nonsense*. That is, the numbers do not necessarily imply that the ideas were valid for the text but show that there were different processes of (an attempt at) idea generation at work.

Number and Kinds of Ideas: Planning

The number of ideas generated exclusively during the planning process (pl) differed by condition (Figure 7), while the ranking of the number of overall ideas is still the same: the highest average number of ideas was developed in the L1 freewritten plan (L1Fpl: 18.5). The average number of ideas in the FLFpl was second highest with 15.3 ideas, followed by the FLNpl (9.0) and the L1Npl (8.7).
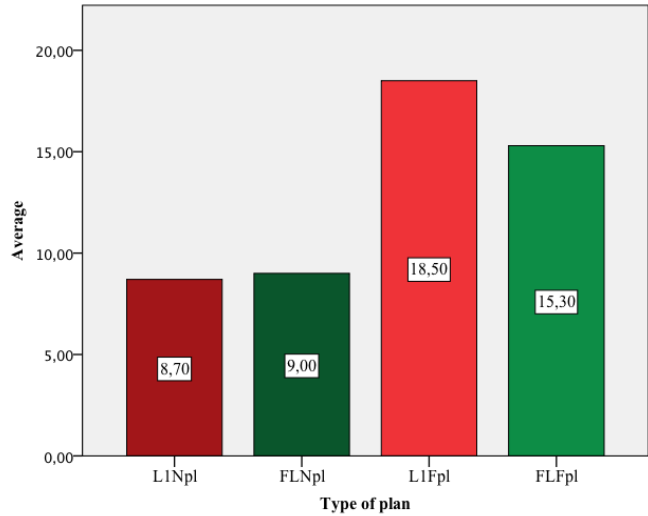

Figure 7. Number of ideas: plans.

The intra-planning and the intra-language variances differ from the results of the analysis of the total number of ideas. The differences between the L1Npl and the FLNpl were only slightly higher with 3.33%. The difference between the L1Fpl and the FLFpl was significantly higher, however: 17.3% (compared to 3.61% in total). It is also the case that the writers wrote down slightly more ideas in the FL notes than in the L1 notes (although the difference is only very small) but they were far more creative in freewriting in the L1. 52.97% more ideas were generated in L1 freewriting than in L1 note-taking. In the FL, 41.18% more ideas were generated in freewriting than in note-taking. This higher intra-language difference between the planning conditions was expected, since the participants were asked to write down every idea that came to mind in freewriting, whereas in note-taking they were asked to focus on the main ideas, that is theses and antitheses.

Again, one should keep in mind that comments and nonsense were included in the freewritten plans. Because of this, the higher number of ideas in freewriting does not necessarily mean that the idea generating is successful with regard to completing the task.

Figure 8 presents the distribution of ideas in the different categories in the different conditions. The blue bars represent the results in the L1Npl, the green bars the FLNpl, the beige bars the L1Fpl, and the purple bars the FLFpl.

The different results are noteworthy: for one, it is interesting to see that the number of marked quotations was lower than the number of unmarked quotations in all plans, with the exception of the FLFpl. That is, during planning the participants did not concentrate much on making clear which ideas are their own and which come from other authors. It is astounding that awareness of the necessity of citing the source was highest in the FLFpl, although freewriting should be performed "uncensoredly."

Taking over the ideas presented in the source texts (marked or unmarked) was most evident in the FLNpl (44.44%) and least evident in the FLFpl (20.26%). This difference could indicate that the writers generated their ideas more or less text independently and more creatively in their FL freewriting, whereas in the other planning conditions the writers worked more genre adequately by using the source text in order to generate their ideas.

In the categories of *own ideas*, the writers produced the highest number of ideas in *own ideas I* in their L1: L1Npl 3.7 (42.53% of the ideas written down) and L1F: 4.6 (24.86%). In the FLNpl, 3.4 ideas (= 37.78%) belong to this category, and only 2.9 of the ideas belong
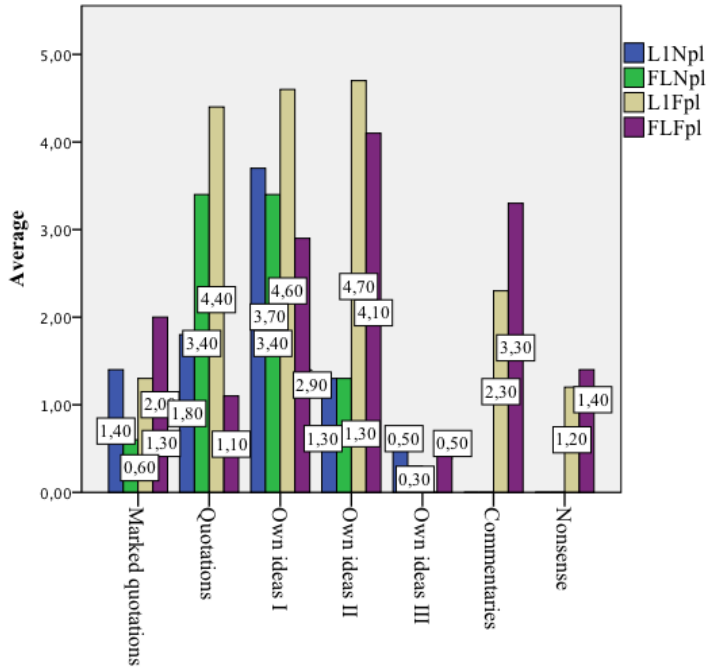
Figure 8. Types of ideas in plans.

to this category in the FLFpl (18.95%). In the category *own ideas II*, the numbers were identical in the notes: 1.3 in L1Npl (14.94%) and FLNpl (14.44%). The number in *own ideas II* was higher in the freewritten plans: 4.7 in the L1Fpl (25.4%) and 4.1 in the FLFpl (26.8%). Thus, one can say that *own ideas I* was the dominant category in the generation of own ideas in the notes, whereas the balance between *own ideas I* and *own ideas II* was more equal in freewriting.

The number of ideas in *own ideas III* was rather low: 0.5 in the L1Npl, 0.3 in the FLNpl, and 0.5 in the FLFpl. There was none in the L1Fpl. Still, it is noteworthy that 5.75% of the ideas in the L1Npl and 3.33 % of the ideas in the FLNpl belong to this category, although it was presumed that more evaluation of the ideas should have been conducted in the process of planning with the help of note-taking than in the L1Fpl, in which no censorship should have been conducted.

The categories *commentaries* and *nonsense* were exclusively relevant in the freewriting conditions. The average number of comments was 2.3 in the L1Fpl (12.43%) and 3.3 in the FLFpl (21.57%). The contents of these comments differed between the languages. In the L1, the writers commented more on errors they committed and were not allowed to correct in freewriting, whereas in the FL they commented more often on the problems they had with generating ideas in freewriting.

1.2 elements on average were *nonsense* in the L1Fpl (6.49%) and 1.4 in the FLFpl (9.15%). A slightly higher attempt was made in the L1 of re-using ideas already generated, by repeating them as a springboard to new ideas, instead of just writing down *blabla*, with 1.0 repetitions on average in the L1 compared to 0.6 repetitions of ideas in the FLFpl.

All in all, 3.5 ideas in the L1Fpl and 4.7 ideas in the FLFpl were irrelevant for the proper essays: that is, 18.92% of the total number of ideas in the L1Fpl and 30.72% in the FLFpl.

The percentage of ideas generated in the initial planning process and then used in the proper essays is displayed in Table 1. In none of the language and planning conditions were all the ideas written down in the plans used in the essays, which is remarkable, especially in the note-taking condition in which the participants were exclusively asked to write down the most relevant ideas. Expectedly, fewer ideas were taken over in the freewriting condition, which is in part the

Table 1 *Percentage of Ideas Used in the Proper Essay*

Text type	Ideas used
L1N	90.8 %
FLN	84.4 %
L1F	63.8 %
FLF	59.8 %

consequence of the ideas in the categories *commentaries* and *nonsense.* However, when these ideas are left out of the analysis, there was still a higher percentage of ideas not used in freewriting than in note-taking.

Discussion: Idea Generation in the Plans
The number of ideas generated in planning in the different languages and in the different planning conditions, as well as the types of ideas generated in the different conditions, show that both the method of planning as well as the language in which the planning is conducted have an effect on the quantity and the types of generated ideas.

In note-taking, there does not seem to be a relevant difference between the L1 and FL in the number of ideas generated. The participants wrote down even slightly less ideas in their L1 than in their FL. This suggests that the participants used similar methods for generating ideas in note-taking, perhaps using their L1 to reduce the cognitive demands of the idea generation process in the FL (Cumming, 1990, 2001; Krings, 1989). That more ideas were written down in the FLNpl than in the L1Npl could be the result of the higher demands of FL writing: there is a higher need for lessening the demands for the working memory by pinning down ideas. One of the participants, for example, wrote down only "Einleitung, Hauptteil, Schluss" (= introduction, body, conclusion) in his L1Npl, without adding what will be written down in these parts, although he took about eight minutes for planning. Freewriting in both languages lead to a higher quantity of idea generation (or to a higher number of ideas written down) than did note-taking. This process in the L1 outperformed the process in the FL. That is, the denser linguistic network and the lower cognitive demands in L1 writing lead to more ideas generated than did the less dense linguistic network and the higher cognitive demands in the FL.

This impression becomes even stronger when one analyzes the types of ideas that were generated in the plans. Since 30.72% of the ideas generated in the FLFpl were either commentaries or nonsense, the average number of ideas which the participants could use in their essays was 10.6, only 15.1% higher than the number of ideas generated in the note-taking condition. In contrast to this, the writers produced 42% more ideas in the L1Fpl than in the L1Npl, after nonsense and commentaries are excluded. This stresses that the success of writing-as-thinking (Menary, 2007) is language dependent.

Analysis of the distribution of ideas in the idea categories shows a difference not only between note-taking and freewriting, but also interlanguage-wise in both planning conditions, although the inter-planning differences were higher. The writers focused more on *own ideas I* (theses, anti-theses and arguments) in the note-taking conditions. They either adapted these ideas from the source texts (more elaborately in the FL) or retrieved them from their long-term memory (more elaborately in the L1). This indicates that although the writers might have made mental use of their L1 in the process of FL planning (Cumming, 1990, 2001; Krings, 1989), they also made more use of the ideas in the source text for generating content, as a possible device for reducing cognitive demands, than they did in the L1 planning, in which they used the source text more as a spring board for ideas of their own. This impression is supported by the finding that the participants used the source text more consciously as an external source in the FLFpl (by explicitly quoting it) whereas they did not bother about this fact in the L1Fpl, although the aspect of plagiarism was crucial for the lecturer's evaluation of a student's text.[2]

In freewriting, the participants' plans were often equal with respect to the number of ideas in categories *own ideas I* and *own ideas II*. One notices a spreading activation of the text from the idea generation of closely related topics. Because of this, the freewritten plans in both languages often demonstrated a higher coherence and a better accountability than did the proper essays, in which the attempt to write according to a high standard seems to have made the students forget that adding one thesis to the other without explanation or elaboration does not work well in an academic text (cp. Galbraith, 2009).

The results suggest all in all that writing-as-thinking works very efficiently in the L1. The writers were more successful in generating ideas in the relevant categories in their L1Fpl than they were in the FLFpl. Only the number of marked quotations was lower in L1 freewriting, whereas the number of unmarked quotations was much higher, which shows that the participants were better able to switch off their mental censor than they were in FL freewriting (which, in cases for which this continued in the essay-writing, would, however, lead to negative evaluations in the case of L1). In the FL, writing-as-thinking with the help of freewriting worked better in the category of *own ideas II* than did idea generation in the language-independent form of note-taking. That is, the written text presumably activated the knowledge that was closely related to the idea already written down, like examples and elaborations, which might also have been generated in the note-taking conditions, but were not written down in this planning method because the participants were asked to focus on the central topics. This impression is supported by the FL comments of the senselessness of freewriting, which were not uttered in the L1Fpl. Also, the higher incidence of repeated ideas in L1 freewriting in order to activate the idea generation process when no new idea came up points in this direction. The participants were conscious of the opportunity of using language as a starting point of idea generation in their L1; in the FL, they more often bridged the lack of ideas by writing down nonsense.

Number and Kinds of Ideas: Writing the Proper Essay

Although not all of the ideas generated in the planning process were used in the essays (Table 1), the participants nevertheless generated a high num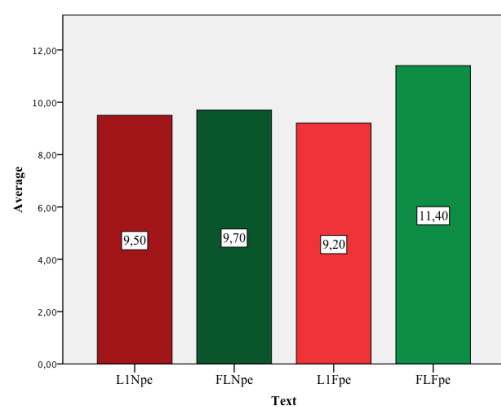ber of new ideas (that is, those not captured in the plans) in writing the proper essays (pe) (Figure 9). The highest number of new ideas were executed in the FLFpe (11.4) and the lowest number in the L1Fpe (9.2), which is only slightly less than the number in the L1Npe (9.5) and in the FLNpe (9.7). It was expected that quite a high number of ideas would be present in the proper essays following note-taking, since the writers mainly focused on higher rhetorical elements in the notes and needed to include elaborations and examples in the essays. It was not expected, however, that idea generation would still be quite high in writing the proper essays after freewriting, where the writers had already been so productive.

Figure 9. Number of ideas: proper essay.

Among the ideas generated during essay writing (Figure 10), both the number of new ideas generated following freewriting and the type of ideas generated following note-taking are surprising.

The writers included more marked than unmarked quotations in all of their texts, which is genre adequate. The number of unmarked quotations was highest in the FLNpe and in the FLFpe, while it was lowest in the FLFpl.

What is more striking (and more negative with respect to coherence and readability of the papers) is the number of ideas generated in the categories *own ideas I* and *own ideas II*. As in the notes themselves, theses or arguments were generated without supporting elaborations, examples or proofs. The number of new ideas in the category *own ideas I* was even higher in the L1Npe than it was in the L1Npl (4.0 pe vs. 3.7 pl), and it was identical in both writing processes in the FLN

Figure 10. Types of ideas: proper essay.

(3.4 pe and pl). In the freewriting condition, they focused more on *own ideas II* (3.8 in both the L1 and the FL) than on *own ideas I* (L1F: 2.6, FLF: 2.5), which is positive for the readability and the convincingness of the paper.
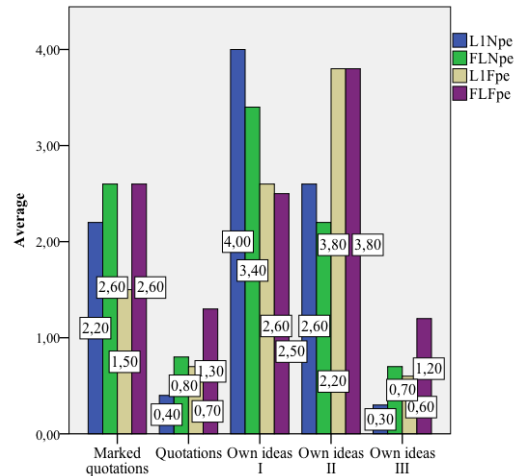
Discussion: Idea Generation in Essay Writing
The number and the type of ideas generated during essay writing show that idea generation was indeed very active during the writing process. In the note-taking condition, this was expected, since the participants were asked to focus exclusively on the main ideas in the notes and leave out additional information. Additional ideas present in the essays but not in the notes may nevertheless have been generated in the note-taking process though not written down. The remarkably high number of newly generated ideas in the FLFpe suggests that freewriting as a form of writing-as-thinking also works in the foreign language, but that here the effect of the planning lead to a higher percentage of translation-driven-generation (van den Bergh and Rijlaarsdam, 1999). This was, in some cases, problematic because needed evaluation and revision of content could not be undertaken due to the lack of time (Breuer, 2015). Because of this, the essays' structures were not clear, in parts, but rather reflected a protocol of thinking-in-process.

With respect to the types of idea, the number of ideas generated in the categories *own ideas I* and *own ideas II* is striking (and rather negative with respect to the coherence and readability of the papers). The participants focused on generating more ideas in the former category after planning by note-taking, without supporting these rhetorical elements through elaboration or examples, as they did in the notes themselves. Many note-taking essays also lacked proof for the theses. After freewriting, the students also generated a relatively high number of *own ideas I*, but focused more on the elaboration of the ideas, making the texts more convincing (although the lack of structure in the proper essays, which might have been the effect of the writers' higher and freer productivity, in some cases made reading the texts quite demanding. This stresses that it is not only planning that asks for methods and training but revision, too).

It is also noteworthy that the number of ideas generated in the category *own ideas III* found in the proper essays was higher in the FL than in the L1 in both planning conditions, which indicates that the cognitive demands in FL academic writing make the participants

less aware of the demands of the genre with respect to adequate content. The higher number of quotations (marked or unmarked) in the FL context also suggests that the participants used the source texts more as an information "supermarket," whereas in the L1 context the source texts were to a larger extent used for activating one's knowledge and developing an attitude towards the positions taken in the texts or suggested by the assignment during the writing process. That writing the plans and the essays takes a very important role in in the process of generating ideas can be seen in a comparison between the freewriting comments and the final essays, in which some of the participants claimed in planning that they did not have any idea of which position to take, but then came up with a clear position by the end of the essay. This underlines how the communication between text and writer indeed helps to create new knowledge.

Conclusion
Analysis of the idea-generating process in and after the different planning conditions and in the different languages shows that the method of planning as well as the language in which writing is conducted has an effect on idea generation. For one, it becomes clear that writing-as-thinking works, but that it works better in the L1 than in the FL, which might be due to the denser network of semantics and phonology (Breuer, 2015; Van den Bergh & Rijlaarsdam, 2007). The differences in the number and type of ideas between the planning conditions were also greater in the L1 than in the FL, which suggests that the writers were more flexible in their planning strategies in the former than in the latter.

Still, one has to be careful with this statement. For one, the number of ideas does not necessarily mean that the proper essay is on a high academic level—be it because the number of ideas is too large to be handled properly in a short essay, or be it because the participants do not take the time to sort the ideas or to evaluate them.

Additionally, the number of participants in the study was quite small, so that no statistical evaluations like the t-test or similar tests could have been conducted. Because of this, a large-scale analysis of idea generation in L1 and FL and in different planning conditions is needed in order to verify the outcomes more conclusively. However, since there are large inter-writer similarities in the outcomes, the study conducted promises that future results will support the view taken in this paper.

In short, an "ideal" situation of critical thinking and writing in a globalized academic world—that is, in a lingua franca—is difficult to attain, at least as long as the term *lingua franca* is understood to be a language that needs to be performed on an L1 level by all participants, be it their L1 or their FL.

Notes
[1]Because the English and the German language differ distinctly regarding the orthography of compounds (e.g. Wohnzimmerfenster [= living room window] is one word in German and three in English), a comparison of text lengths in terms of characters seemed more sensible than doing one in terms of words.

[2]Note that quotation was not a topic in the essay classes the students attended in their FL English, so that their being more used to quoting correctly in the FL than in the L1 cannot be the reason for the academically more appropriate use of the source text in the FLFpl.

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Appendix

Assignments

Task 1: Simple essay

Please take on the position of your writing instrument (your computer, your pencil or your workbook). Let it describe you and your writing processes from its very special point of view.

Task 2: FLN

"As Peirce said, if Aristotle had been Mexican, his logic would have been different; and perhaps, by the same token, the whole of our philosophy and our science would have been different." (Dufrenne 1963: p. 35)

Please take a position to the quotation above using the information you gained in Kaplan's text. Do you agree with the view(s) presented in the text/the quotation? If available, make use of your knowledge from other academic fields for your argumentation.

Task 3: L1N

In der Wissenschaft hat die englische Sprache die dominante Rolle übernommen. Dies wird zum einen positiv gesehen, da so der internationale Austausch erleichtert wird, andererseits sehen Kritiker aber auch Gefahren in der Abkehr von der Muttersprache.

Lesen Sie bitte den Auszug aus Wolf Schneiders „Speak German" und beziehen Sie Stellung zu der vom Autor vertretenen Meinung. Beziehen Sie dabei auch Ihr Wissen aus Kursen ein, die Sie hier an der Universität besucht haben (z.B. Sprachwissenschaften oder SchreibArt).

Task 4: L1F

"Der einheitliche europäische Hochschulraum bis 2010 ist das Ziel des Bolognaprozesses, an dem sich 47 europäische Länder beteiligen.
Durch den Bolognaprozess wächst Europa im Hochschulbereich stärker zusammen und ermöglicht so eine bessere Nutzung der vorhandenen Wissenspotentiale. Kernelement des geplanten gemeinsamen europäischen Hochschulraums ist die Einführung eines gestuften Studiensystems aus Bachelor, als erstem berufsbefähigendem Abschluss, Master und der Promotion als europaweit vergleichbare Abschlüsse. Auch die Verbesserung der Anerkennung durch das European Credit Transfer and Accumulation System (ECTS) sowie der Aus- bzw. Aufbau von Qualitätssicherungssystemen ist von Bedeutung. Ebenso ist die Entwicklung und Anwendung europäischer und nationaler Qualifikationsrahmen zur Beschreibung der unterschiedlichen Bildungsabschlüsse und der damit verbundenen Lernergebnisse und Kompetenzen wichtig." (http://eu.daad.de/eu/bologna/bologna/06950.html)

Die Studiengänge haben sich in Deutschland aufgrund des Bolognaprozesses stark verändert. Bitte nehmen Sie Stellung dazu, inwieweit die Ziele des Prozesses sinnvoll sind und wie sie

verwirklicht wurden. Nehmen Sie dabei auch Bezug auf die Umfrage unter Studierenden und auf Ihre persönlichen Erfahrungen.

Task 5: FLF

After incidents like school shootin in Winnenden, public has once again turned against television and computer games as being responsible for the tragic events. Many feel that the media influences people's perception of and attitude towards violence. The 'Aktionsbündnis Amoklauf Winnenden", for example, has called on people to dispose of their killer games in a trash can that they have set up in front of the State Opera in Stuttgart.

Please take a position: would keeping these influences away from children and young people, e.g. via censorship, be a good method of protecting society or would it be too big a violation of freedom of the press/the media?

Task environment (for all academic essays):

You are a participant in an essay writing class. At the end of the term, you have to write an essay in 45 min. on the topic of the different cultures of academic writing throughout the world. You want to get a good mark, because the essay can be seen as a test for your bachelor exam which you'll have to pass in about three months.

Your writing/the essay should meet the following requirements:

1. It has to be finished in **45 min**.
2. Your position has to become obvious.
3. Give good and convincing reasons for your opinion.
4. The text should have the "classic" essay form: introduction, main part, conclusion.
5. The paragraphs are well structured.
6. Take care of spelling and language use.
7. The reference paper should be used to underline your argumentation.

Please do not forget to give your paper **a title**.

Good luck!