

# *The impact of pragmatic markers and hedging on sentence comprehension: a case study of comme and genre*

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## ABSTRACT

Current research on conceptual and semantic representations is mainly based on prototypical word classes, such as nouns and verbs. Hence, most models of language processing and language representation rely on experimental investigations on these word classes. Until today, only a few psycholinguistic studies centre on the processing of pragmatic markers and hedges and their effect on speech comprehension. The present article aims to give experimental evidence for the processing of semantic meaning patterns and pragmatic functions of pragmatic markers. The focus will be on the question, if pragmatic markers and hedges play a role in sentence processing. This main problem will be illustrated and discussed by means of experimental data. In a monolingual sentence verification task with lexical decision, the meaning patterns and functions of the partially equivalent pragmatic French markers *comme* and *genre* are investigated in Canadian and European French. The results of the sentence word verification task provide evidence for an impact of pragmatic functions and semantic meaning patterns of pragmatic markers on sentence processing.

## I. INTRODUCTION

The field of experimental pragmatics investigates pragmatic hypotheses by means of offline and online tasks such as reaction time and error rate measurements as well as eye tracking (for an overview see Sperber and Noveck, 2004; Meibauer and Steinbach, 2011).

Current psycholinguistic models of language processing and lexical access generally do not focus on pragmatic information and lack a clear differentiation between pragmatic, semantic and conceptual representations. Many psycholinguistic studies do not differentiate at all between a semantic and a conceptual level of language processing and use both terms interchangeably (see Pavlenko, 2009). Still, the differentiation of these representation levels may be crucial for certain psycholinguistic questions and experimental investigations. Furthermore, most studies do not address the issue of pragmatic language processing at all. Therefore, it remains unclear where pragmatic information enters into the

process of lexical access. One possible approach is that pragmatic information can only enter into speech processing in sentence context, because single words cannot give much information of the different functions of the respective word. This would mean that pragmatic information is only necessary and accessible in sentence context. In psycholinguistic research on sentence processing, it is still controversially discussed when and how semantic and syntactic information is accessed.

The present article aims to give new insights into the processing of pragmatic information, more precisely of semantic and pragmatic representations of pragmatic markers. The focus of the investigation will lie on two main questions of semantic representation of pragmatic markers. On the one hand, it will be questioned, if pragmatic markers have an impact on sentence comprehension at all. On the other hand, it will be investigated, if the different meaning patterns and pragmatic functions of pragmatic markers show an impact on sentence processing. These problems will be discussed by means of experimental data on the pragmatic markers *comme* and *genre* in Manitoban French, a variety of Canadian French, and European French. The marker *comme* underwent contact-induced transfer of meaning patterns in Canadian French that did not take place in European French. On the contrary, the marker *genre* underwent an expansion of meaning patterns and pragmatic functions in European French but not in Manitoban French. Therefore, these lexical items are very suited for a comparative analysis and experimental investigation on conceptual and semantic representations.

## 2. PRAGMATIC MARKERS

Pragmatic markers have been in the focus of scientific discussion for more than three decades and there is still no consent on their exact classification, delimitation and definition (for a detailed overview see e.g. Hansen, 1998; Andersen, 2001; Aijmer, 2002; Aijmer and Simon-Vandenberg, 2006). In the present account, pragmatic markers are defined as lexical items that are highly polysemous (Hansen 1998), polyfunctional (Aijmer, 2002), syntactically flexible and occur mostly in sentence-peripheral positions (Brinton 1996). Furthermore, they generally fulfill discourse-pragmatic functions (Gülich, 1970) and do not contribute to the propositional content of an utterance (Brinton 1996). In the present approach, I will follow Beeching (2011) by distinguishing between discourse connectives and other discourse particles, here termed pragmatic markers. Discourse connectives as defined by Beeching (2011:100) will not be subject of this article.

### 2.1 *Semantic meaning patterns and pragmatic functions of pragmatic markers*

There is by far no agreement on the semantic meaning patterns of pragmatic markers and especially on their interrelation and their nature. Here, the main questions concern two very different aspects of the meaning of pragmatic markers. The first problem is to define the interrelation of semantic meaning patterns, that is to decide if pragmatic markers are polysemous or monosemous items. It is generally

accepted that most pragmatic markers emerged from other word types through processes such as grammaticalization or pragmaticalization. This leads to the fact that pragmatic markers commonly have more than one meaning. When taking a polysemy perspective on pragmatic markers (e.g. in the work of Hansen, 1998; Aijmer and Simon-Vandenberg, 2003; Waltereit, 2007; Pons Bordería, 2008), lexical items with various interrelated senses are defined as being polysemous. The polysemy approach claims that:

most linguistic word forms have more than one meaning, not only at the level of parole but also at the level of langue, and that these meanings are related to one another in ways that can at least be motivated, if not fully predicted. (Mosegaard Hansen, 2008: 35)

In contrast, the monosemy approach (e.g. in the work of Fischer, 2000; Weydt, 1969; Fraser, 2006; Schiffrin, 1987) claims that:

Each phonological/orthographic form is associated with a single invariant meaning. This invariant meaning may describe the common core of the occurrences of the item under consideration, its prototype, or an instruction. Individual interpretations arise from general pragmatic processes and are not attributed to the item itself. (Fischer, 2005: 13)

Therefore monosemy-oriented studies try to establish a core meaning of different pragmatic markers. But also scholars following the polysemy approach may assume that pragmatic markers have a core meaning (from a polysemic perspective), in that they have one meaning that is more dominant than others (see e.g. Aijmer and Simon-Vandenberg, 2003). Still, in a polysemy approach it is not a prerequisite to assume a core meaning, it is also possible to accept different interrelated meanings without one clear dominant sense (e.g. Waltereit, 2006). Especially in the monosemy approach, determining a core meaning is not without problems. The core meaning is often too broad and cannot really distinguish a certain pragmatic marker from others. This is mainly due to the fact that a core meaning does not only try to account for the different semantic meaning patterns of a pragmatic marker, but also for its pragmatic and intertextual functioning (Aijmer, 2002: 23). This gets particularly complicated in studies that focus on cross-linguistic comparisons of discourse-pragmatic features and meaning patterns of pragmatic markers. Waltereit (2006) points out that there is no satisfactory way of comparing partial equivalent pragmatic markers from different languages from a monosemy perspective, because it cannot explain functional differences in the different languages (Waltereit, 2006: 8). On the contrary, the polysemy approach can account for cross-language differences and semantic change without problems. Furthermore, the polysemy approach allows that pragmatic markers from different languages may overlap in some of their meanings and functions and not in others.

A second problem in research on pragmatic markers is the question of whether they contribute to the truth-conditional meaning of an utterance or not and whether they encode conceptual meaning or not. The distinction between truth-conditional and non-truth-conditional meaning commonly describes the

distinction between semantics (truth-conditional) and pragmatics (non-truth-conditional). Most studies assume that pragmatic markers generally do not affect the truth-conditions of a sentence. That is to say that they rather indicate how to interpret an utterance than to contribute to its content. This approach is not without controversy; Blakemore (2002) argues that the view semantics = truth-conditions and pragmatics = meaning minus truth-conditions, is not adequate for an analysis of pragmatic markers. She defends a relevance-theoretic approach to pragmatic markers, based on Sperber and Wilson (1986) (see also Andersen, 2001). In this view, pragmatic markers are not directly mapped onto a conceptual representation, but function as items that modify the interpretation of an utterance and help the hearer to decode the message. The strict distinction between words encoding procedural and conceptual meaning has been criticized in current research (e.g. Hansen, 2008; Pons Bordería, 2008; Fraser, 2006). Fraser (2006) claims that lexical items can encode procedural meaning and a conceptual component of meaning at the same time. This view has even been adopted by Wilson (2011), who claims that “conceptual and procedural meaning should not be treated as mutually exclusive” (Wilson, 2011: 14).

As already mentioned, pragmatic markers are characterized by their spectrum of pragmatic functions. This polyfunctionality is commonly accepted and also goes back to the evolution paths of pragmatic markers. Most markers emerged from already existing lexical items such as adverbs (e.g. *well*, *bon*, *bien*, *alors*, *donc*) and conjunctions (e.g. *so*, *like*), which often already were multifunctional in their grammatical functions. Still, all of these lexical items developed pragmatic functions over time. In most cases, grammatical and pragmatic functions coexist, but they are generally clearly distinguishable (e.g. the adverb *well* and the pragmatic marker *well*). Furthermore, most pragmatic markers are also polyfunctional at the pragmatic level. While there is general agreement on the fact that pragmatic markers are polyfunctional items, there is discussion on an explanation. From a monosemy approach, every marker has a core meaning that varies according to the respective contextually determined meanings and functions. From a polysemy approach, the different functions are simply a result of common processes of language change that is of the emergence of new functions over time. It is self-evident that different pragmatic markers differ importantly in their pragmatic functions. But it is still possible to point out some functions, which occur on a more frequent basis. When researchers aim to point out more frequent functions of pragmatic markers, they generally mention functions as face-threat mitigators, as emphasizees or intensifiers, attenuation or mitigation purposes or to express the speakers' attitude. Another function of pragmatic markers may be to establish coherence in discourse interpretation. Aijmer (2002) points out that “when discourse particles are absent or if they are used wrongly, listeners may have difficulty in establishing a coherent interpretation of discourse” (Aijmer, 2002: 15). She refers to this phenomenon as indexicality, that is pragmatic markers create an indexical relation to the context and therefore serve in utterance interpretation.

According to Aijmer, it is not possible to determine the concrete number of functions of a pragmatic marker. In contrast to this opinion, a wide range of studies have tried to establish the semantic meaning patterns and functions of specific pragmatic markers. In light of this it is considered problematic to establish universally valid pragmatic features for pragmatic markers. Here, it seems more plausible to determine the functions of a given pragmatic marker on the basis of corpus data (see Hennecke, 2014).

## *2.2 Experimental research on pragmatic markers*

Only a few studies focus on the role of non-prototypical word types in monolingual and bilingual speech processing. An important problem in psycholinguistic research concerns the role of connectives, relational markers, pragmatic markers and hedges in sentence comprehension. These items are often referred to as encoding procedural meaning and/or not contributing to the truth-conditional content of an utterance. The main issue relates to their role in linking different parts of speech and establishing coherence in sentence comprehension. It is assumed that increasing coherence leads to increasing comprehension and in consequence to faster response latencies (Britton, 1994; Britton and Gülgoz, 1991; Murray, 1995). Three main assumptions have been made in current research on the effect of connectives and relational markers on sentence comprehension. First, they may have a facilitatory effect (Haberlandt, 1982; Bestgen and Vonk, 1995; Sanders and Noordman, 2000); second, they may have an interfering effect (Sanders, 1992; Millis et al., 1993), or third, no effect at all (Meyer, 1975; Sanders, 1992). Most current experimental evidence on this topic focuses on different reading tasks in sentence and text processing (for an overview see Sanders and Noordman, 2000). The research on the role of pragmatic markers and hedges in conversation mostly focuses on speech production and the results are mainly based on the analysis of spoken language corpus data. Until today, only a few studies centre on the processing of pragmatic markers and hedges and their effect on speech comprehension (Fox Tree, 1995; Fox Tree and Schrock, 1999; Holtgraves, 2000; Blankenship and Holtgraves, 2005; Fox Tree, 2006; Liu and Fox Tree, 2012). Fox Tree (1995) observed the influence of the pragmatic marker *and* on the processing of false starts that occur at the beginning of an utterance (beginning false starts) or in the middle of an utterance or respectively after a pragmatic marker (middle false starts). Participants showed slower response latencies in English and Dutch word monitoring tasks when the false starts were preceded by *and* than without the lexeme *and*. Her findings suggest that *and* prefacing a false start changes a beginning false start into a middle false start in the hearers' perception. In the relevant study on the marker *oh*, Fox Tree and Schrock (1999) performed two word-monitoring tasks and three semantic verification tasks in order to determine the role of *oh* in sentence comprehension. To compare the impact of *oh* on sentence comprehension, they aimed to compare parts of speech containing *oh* with the same parts of speech with *oh* digitally spliced out (pause). In the word monitoring tasks (adapted from Marslen-Wilson, Tyler

1980), participants listened to an excerpt of speech and pressed a button when they heard a particular word that was defined beforehand. One word-monitoring task (Experiment 1) included a pause; the second word-monitoring task (Experiment 2) was performed without pause. In the semantic verification tasks, the participants saw a visual target word while listening to the speech and they had to press a respective button depending on whether the word occurred in the auditory speech or not. In the first semantic verification task (Experiment 3), *oh* was replaced by a pause, in Experiment 4, it was excised entirely. In Experiment 5, participants pressed no key when the respective word did not occur in the discourse. Fox Tree and Schrock found facilitatory effects for speech comprehension in word monitoring and semantic verification tasks after the marker *oh* compared to conditions where the *oh* was replaced by a pause or left out completely (Fox Tree and Schrock 1999: 293).

Still, their design includes several problematic issues, such as the length of the stimuli, varying from 41 to 247 words, and the differing placement of *oh* in the stimulus messages (Fox Tree and Schrock 1999: 285). Furthermore, the stimuli selection is not entirely clear. They state that the same stimuli are selected for experiment 1–4. The initial stimuli are used in Experiments 1 and 3, but in Experiments 2 and 4, “several long trials were shortened to reduce the likelihood of participants’ forgetting the target words while listening to the trials and more prominent target words were selected” (Fox Tree and Schrock, 1999: 288). Experiment 5 contains partly the same stimuli as Experiment 4, partly completely new stimuli. The reason for this procedure and the resulting differences in the effects remain unclear. These inaccuracies in the design and procedure do not allow assigning the effects and the results unequivocally to the experimental variable. In a judgement experiment with question–reply exchange, Holtgraves (2000) examined the speed and judgement of face-threatening interpretation of the pragmatic marker *well*. His results suggest that participants were significantly faster at verifying a face-threatening interpretation when the utterance contained *well*. These results were confirmed in a second experiment that measured sentence verification response latencies.

All studies on the processing of pragmatic markers vary in the concrete object of research, the applied methodology and the design and procedure of the respective experimental studies. Furthermore, there is no general agreement on the concrete interpretation of the results and their implications for theorizing and modeling. This may be partly due to the generally controversial role and classification of pragmatic markers and their strong polyfunctionality. Still, all studies presented here agree on the point that pragmatic markers play some role in establishing discourse coherence and may help the hearers’ segmentation of speech.

As already pointed out, hedges differ from other discourse–pragmatic devices in several points. They may attenuate the semantic value or the illocutionary force of an utterance and may contribute to the propositional content. Therefore, it is important to differentiate between hedging functions of pragmatic markers and other purely pragmatic, and often syntactic peripheral functions. Several recent studies on hedging and related phenomena, such as tag questions, build on the

differentiation between powerful and powerless speech (Haleta, 1996; Hosman, 1989, 1997; Hosman, Huebner and Siltanen, 2002; Blankenship and Holtgraves, 2005; for a review see Hosman, 2002). According to Blankenship and Holtgraves (2005), “powerless language refers to the presence of one or more linguistic features such as tag questions, hesitations, disclaimers, hedges, polite forms, and so on. Powerful language refers to the absence of these features” (Blankenship and Holtgraves 2005: 4). That is to say, these researchers regard powerless speech as a kind of discourse that includes a high amount of attenuation, mitigation, hesitation and monitoring, etc. They assume, amongst others, that speakers evaluate low-power speech, including hedges, pragmatic markers, tag questions etc., less positively than high-power speech. Therefore, some recent studies on hedging, implying psycholinguistic approaches, deal with the exact nature of powerless and powerful speech and its impact on the hearer. Hosman and Siltanen (2006) investigated the effect of markers of powerful and powerless speech on speaker evaluation, control of self and control of others’ attributions, cognitive responses and message memorability on monolingual English speakers. Participants read a high-power message or one of three low-power messages, containing either hedges, tag questions or intensifiers (Hosman and Siltanen, 2006: 37). Afterwards, they completed a cognitive-response questionnaire, a questionnaire measuring the speaker’s intellectual competence, and a questionnaire on self-control and control of others. Two days later, they performed a recognition memory task (*ibid.*).

According to the researchers, these results support the hypothesis that hedges are perceived as lower in intellectual competence and “exhibiting the least control of self and control of others” (Hosman and Siltanen, 2006: 42). Blankenship and Holtgraves (2005) examined the role of hedges and hesitations on the perception of powerless and powerful speech. English-speaking participants listened to messages containing either hedges or hesitations or powerful speech and rated the messages according to different criteria such as attitude towards the message, speaker and message perception (Blankenship and Holtgraves, 2005: 9). As a result, they found out that messages containing hedges and hesitations led to a more negative attitude of the participants towards the message. They argue, “these markers are distracting and hence lessen the overall impact of strong arguments” (Blankenship and Holtgraves, 2005: 19).

In a very recent study, Lui and Fox Tree (2012) investigated the effect of hedges and the pragmatic marker *like* in speech perception of monolingual English speakers. They differentiate *like* from other hedges, because they also consider non-hedging functions of this marker. In a first task, they recorded speakers retelling their own story (production task) and speakers retelling others’ stories (perception task). Experiment 1 showed that participants did, in most cases, not retell hedge-marked information. Lui and Fox Tree interpret this result as evidence that the listener may overlook hedge-marked information. In a second experiment, participants listened to an audio recording, containing hedge-marked, *like*-marked and unmarked quantities. Afterwards the participants performed a memory task. In contrary, the results of the second experiment suggest that hedged information was remembered

more accurately in the memory task than non-hedged information whereas *like* did not have any effect on the memory task. Lui and Fox Tree conclude from their results that hedges “provide pragmatic cues about what information is reliable enough to repeat to somebody else in a conversational context, but they do not prevent people from remembering that information” (Lui and Fox Tree, 2012: 6).

All of these studies try to gain new insights into the processing of pragmatic markers and hedges. But they differ strongly in their concrete objects of investigation and in their experimental methods. While some studies aim to study the hearers’ attitude towards markers and hedges, other studies focus on the effect of markers and hedges on memorization or on the interpretation of face-threatening acts. Only Fox Tree and Schrock (1999) measured response latencies of participants to examine the role of a respective marker in sentence comprehension. Even though Fox Tree and Schrock have reported facilitatory effects of *oh* in spontaneous speech comprehension, the question of the exact effect of other pragmatic markers and hedges still remains unsolved. This is not only due to the inaccuracies in their experimental design and procedure, but also due to the role of the lexical item *oh* that was not defined clearly. Therefore, the present investigation aims to add relevant research results to the discussion on the role of pragmatic markers in discourse comprehension.

### 2.3 *The pragmatic markers comme and genre in European and Manitoban French*

In previous research on the use of *comme*, different authors pointed out that *comme* in Canadian French can take functions and meaning patterns that are not attested in European French (Chevalier, 2001; Beaulieu-Masson et al., 2007; Mihatsch, 2009). According to current research results, the most salient new functions of *comme* seem to include the extension in its use as a hedge and its use in quotation. The present understanding of hedges is based on Prince et al. (1982). They distinguish between two types of hedges, namely approximators and shields. Approximators are defined as lexical items that modify the truth-conditions of an expression while shields do not affect the truth-conditions of an utterance. Adaptors and rounders are considered as subtypes of approximators. Adaptors trigger a loose reading of a lexical unit or expression and operate on the semantic level of an utterance; whereas rounders modify a numeral value in that they indicate a vague interpretation. In contrast, shields do not modify the semantics of an utterance, but rather soften a statement and alter the illocutionary force. While other scholars extended this classification recently (e.g. Caffi, 2001, 2007), the present work will however rely on the classification of Prince et al. (1982). The use of *comme* fulfilling extended pragmatic functions has been outlined for different varieties of Canadian French. Chevalier (2001) distinguishes five different kinds of approximation, which are found in the Chiac variety of Canadian French. In her study, she differentiates between *approximation qualitative* (adaptors), *approximation quantitative* (rounder), *assertion* (shields and utterance-final use), *discours rapporté direct* (quotative use) and *autocitation* (quotative use) (Chevalier, 2001: 20f.). All of these functions were also



found in the Manitoban variety of Canadian French, which will be the research object of the following experimental investigation (for a detailed corpus-based analysis see Hennecke, 2014). In European French, *comme* cannot fulfill this set of functions. In spoken European French, *comme* can function as an adaptor, but not as a shield, a rounder or a quotative marker.

Fleischman and Yaguello (2004) observe that the lexical unit *genre* has emerged as a pragmatic marker in European French and can be used in several of the functions listed above. Beaulieu-Masson et al. (2007) presume that the newly emerged functions of *comme* in Canadian French, which arose in the course of the twentieth century, are due to long-term language contact with English and underlie the process of pragmaticalization. Fleischman and Yaguello (2004) argue that the pragmatic functions of *comme* mentioned above are expressed by the marker *genre* in spoken and informal European French. They state that *genre* shows a functional similarity to the pragmatic marker *like* in English, in that it can function as a rounder, an approximation and as a quotative marker (Fleischman and Yaguello, 2004: 131ff.). According to Mihatsch (2012), *genre de* is documented as an approximation marker since the fifteenth century (Mihatsch, 2012: 161). In her comparative analysis of the emergence of approximation out of taxonomic classification in Romance languages, Mihatsch (2012) detects *genre* as an adaptor, a quotative and a rounder in spoken European French (Mihatsch, 2012: 204). Still, *genre* occurs infrequently in these functions, Mihatsch counts one occurrence of *genre* in a rounder function, three quotative functions and three adaptor functions (ibid.). It can be concluded that different studies confirm that *genre* is indeed a newly emerged and very frequent pragmatic marker in European French (see Secova, 2011: 81 ff. as well as Mihatsch, 2012 for a detailed analysis). In Manitoban French, where the pragmatic functions demonstrated above are taken by *comme*, the lexical unit *genre* occurs rarely, even in its use as a noun.

To conclude, it can be stated that *genre* in European French indeed shows a certain functional similarity to the pragmatic use of *comme* in Manitoban French. Nevertheless, the pragmatic uses of *genre* are not as frequent in European French as the uses of its Franco-Manitoban counterpart. *Comme* in European French can fulfill pragmatic functions in a restricted sense, that is the adaptor function and the function as a repair and hesitation marker. However, the use of *comme* as a pragmatic marker is not very frequent in European French and therefore differs from the pragmatic marker *comme* in Franco-Manitoban.

The following experimental investigation aims to analyse the quotative, rounder and adaptor functions of the pragmatic markers *comme* and *genre* in more detail, in order to determine their role in language processing.

### 3. EXPERIMENTAL INVESTIGATION: SENTENCE-WORD VERIFICATION TASK

I designed an experimental task, more precisely a monolingual sentence verification task with lexical decision, to investigate the role of pragmatic markers and their

newly emerged functions and meanings in sentence context. The present task only focuses on the functions and meaning patterns of the two partially equivalent markers *comme* and *genre*. In particular, the present study aims to investigate the question of whether the contact-promoted change of *comme* is anchored in language representations (for a detailed discussion see Hennecke, 2014). To analyze this question adequately, the respective markers have to be investigated in context.

Since pragmatic markers are very polysemous items with a large range of functions and meanings, the sentence context plays an important role in assigning a specific function to the respective marker. Still, the processing of sentences includes additional problems, such as the integration of semantic and pragmatic information in the sentence context and the syntactic relations between words.

The role of specific grammatical constructions and word types constitutes an important part in psycholinguistic research on sentence processing. Still, as previously mentioned, few studies investigate the role of pragmatic markers in context. Therefore, the present sentence-word verification task is loosely based on the above-mentioned word-monitoring task (Experiment 1 and 2) of Fox Tree and Schrock (1999). It also includes multi-modal stimulus presentation but in the present task, first a spoken sentence is presented to the participants, who then perform a lexical decision on a visual stimulus word. The choice of a lexical decision task is motivated by the fact that this task allows to control for confounding variables in the stimuli sentences and to measure concrete response latencies on a target word. In lexical decision tasks, participants have to decide whether a visually presented letter string is a word or not. The decision is generally made by pressing a respective Yes- or No-key on a keyboard or a joystick. It is assumed that several factors, such as frequency, orthography or the semantic nature of the word, influence the recognition of the respective word and consequently the response latencies of the participants.

In the present investigation, I assume that an orally presented sentence has an impact on the response latencies of the participants' decision on a related or unrelated visual stimulus word or non-word. Response latencies of participants are measured from the beginning of the presentation of the target word until the lexical decision. I further assume that words that are semantically related to the stimuli sentences trigger faster response latencies than semantically unrelated words.

The present research concerns the impact of the partially equivalent pragmatic markers *comme* and *genre* on the auditory speech perception of speakers of Manitoban French and speakers of European French. Consequently, the present experimental investigation aims to examine the following two aspects of sentence processing:

- (1) The impact of the partial equivalent markers *comme* and *genre* on sentence processing
- (2) The impact of contact-induced change of *comme* on sentence processing

### *Predictions*

In the present investigation, I hypothesize that pragmatic markers have indeed an impact on language processing, more precisely on sentence comprehension. I expect

that the markers *comme* and *genre* show different effects on sentence processing depending on their function and semantic meaning in the respective sentence context and on the two different groups. That is to say, I expect faster response latencies for the marker *comme* in newly emerged functions for Manitoban French participants than for European French participants. A reverse effect is expected for the marker *genre*. Furthermore, I hypothesize that the emergence of new functions and meanings in combination with the increase of frequency of *comme* in Manitoban French leads to a facilitatory effect of this item in sentence processing of Manitoban French speakers in comparison to European French speakers.

To test these predictions, I adopted the design of the word-monitoring task (Experiment 1 and 2) of Fox Tree and Schrock (1999) in a strongly modified version. A spoken sentence was presented to the participants, followed by a semantically related or unrelated visual target word. The participants then performed a lexical decision task on the visual target word.

### *3.1 Overall design of the experimental investigation*

All participants from both groups received the same stimuli in pseudorandomized order, which was determined by the experimental software *Presentation* (Neurobehavioral Systems Inc.). All participants received the same instructions. Error rates and response latencies are the dependent variables in the experiment. Language group (MF and EF) is included as an independent variable as a between-subjects and within-items factor. The statistical analysis consists of analyses of variance by participants (F<sub>1</sub>) and by items (F<sub>2</sub>).

#### *Participants*

Twenty-four undergraduate students and staff from the Université de Saint-Boniface (Winnipeg, Canada) participated in the experiment in exchange for payment as the Manitoban French experimental group (MF). Twenty-four undergraduate and graduate students from the Université de Strasbourg (Strasbourg, France) participated in the experiment in exchange for payment as the European French control group (EF). All participants were aged between 18 and 30 years.

I carried out a pre-test of the experiment with 24 students from the International Bilingual School (IBS) (Luynes, France) and undergraduate students from the Université de Provence (Aix-en-Provence, France).

#### *Material<sup>1</sup>*

Seventy monolingual French sentences were taken from the transcriptions of natural speech data of the FM Corpus (Hennecke, 2014), the C-Oral Rom Corpus and the Corpus de la Parole. The FM Corpus provided stimuli of spoken Manitoban French.

<sup>1</sup> See Appendix A for a list of stimuli.

The C-Oral Rom Corpus, a corpus of spontaneous spoken data of French, Spanish, Portuguese and Italian, as well as the Corpus de la Parole, a corpus of spoken European French, provided stimuli sentences for European French. The original sentences already contained the markers *comme* and *genre* in different functions. All sentences were matched in approximate length, varying from five to ten words. The sentences were arranged in four sets, depending on whether they contained the quotative and rounder function of *comme* restricted to Canadian French (*comme1*), the adaptor use of *comme* accepted in European French (*comme2*), the marker *genre* in quotative, rounder and adaptor functions (*genre*) or no marker at all (*control*). A female European French native speaker recorded all sentences in a quiet room with an Olympus voice recorder. A semantically related and a semantically non-related French target word was created for each sentence using Wordgen stimulus creation software (Duyck et al., 2004). The variable relatedness was included in the design as a control variable. Target words were matched as closely as possible in frequency and length. They were assigned to the respective stimuli sentences by means of the variable semantic relatedness. A set containing 70 Filler sentences and Filler words and non-words was created according to the same criteria as the experimental stimuli. Filler words were all matched in frequency, respectively bigram frequency. Filler words and non-words were randomly assigned to the respective Filler sentences. Filler sentences and Filler words were included in the design to obscure the aim of the study. The experiment was programmed using the experimental software *Presentation* (Neurobehavioral Systems Inc.). The sentences were presented orally on a Mac Os X, the target words were presented on a 13" screen. Two keys on the keyboard were used for button responses.

### *Design*

The variables marker (*comme1*, *comme2*, *genre*, *control*) and relatedness (related, unrelated) were varied within participants. Each participant received 35 sentences with unrelated target words and 35 sentences with related target words as well as 70 Filler sentences with target words. The combination of the stimuli sentences and the target words is displayed in detail in Annex A. The combination of the variables marker and relatedness was counterbalanced within and between groups. All stimuli and sets of stimuli were pseudo-randomized using *Presentation* software and appeared in a different order for each participant. A short practice trial including three sentences and target words was presented to all participants at the beginning of the experiment.

### *Procedure*

Participants were first introduced to the consent form and the experimental procedure in French. Furthermore, all participants were informed to listen carefully to the stimuli sentences in order to complete a short memory task at the end of the experiment. The visual memory task included five of the stimuli sentences

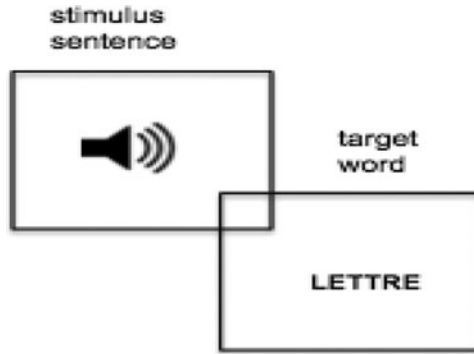


Figure 1. Design of the sentence-word verification task.

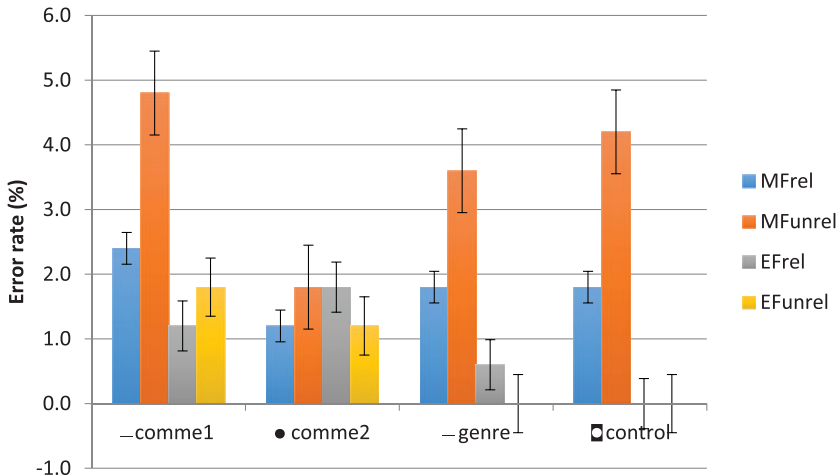


Figure 2. (Colour online) Mean error rates in percent (participants' means). Error bars represent one standard error.

and five sentences that were not part of the experiment. The participants had to decide if they heard the respective sentences in the experiment or not. They did so by checking a Yes- or a No-box on a sheet. Each trial started with the auditory presentation of a sentence, followed by the visual target word (see Figure 1). For each trial, participants performed a lexical decision by pressing a key on the keyboard, that is, they decided if the presented target word was a real word or a non-word.

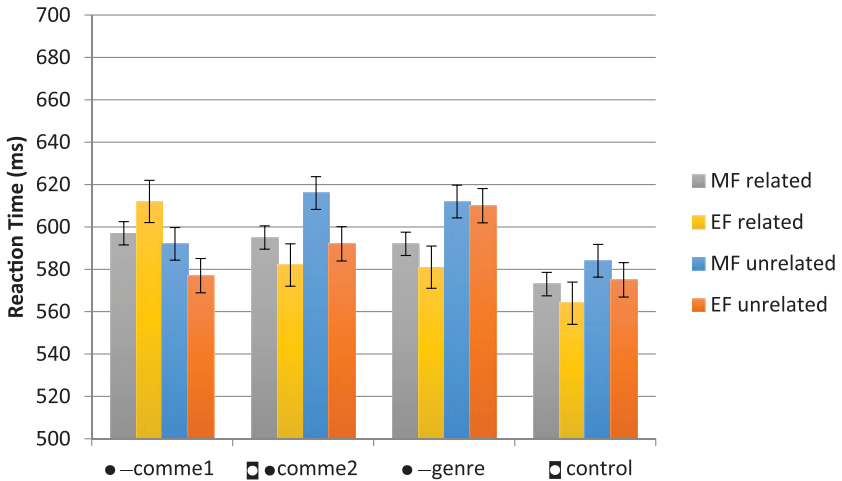


Figure 3. (Colour online) Mean reaction times (participants' means) by group and marker. Error bars represent one standard error.

### 3.2 Results

Statistical analyses were performed using SPSS Statistics (IBM). Statistical analyses were only performed on the stimuli trials. All trials including Filler sentences as well as non-words were excluded from the analyses. Analyses of Variance (ANOVAs) were run on subject and item means, including group (European French = EF, Manitoban French = MF) as a between-subject and within-items variable and the variables marker (comme1, comme2, genre, control) and relatedness (related, unrelated) as within-subjects and between-items variables. Response errors (Overall 1.2%) and response time deviations slower or shorter than 2.5 standard deviations from the participant mean (Overall 2.5%) were excluded from the analysis.

#### Error Rates

The overall error rate for this experiment was 1.9%. Error rates were higher for the MF group (2.7%) than for the EF group (1.1%). As a result, a main effect was found for the variable group in the by-participants analysis ( $F_1(1, 46) = 4.38, p < 0.05$ ). In the item analysis, no main effect was found for the variable group ( $F_2(1, 72) = 1.24, p > 0.1$ ). Error rates are displayed in Figure 3. The analysis of error rates revealed higher error rates for the unrelated condition (2.2%) than for the related-condition (1.4%). This is reflected in a significant effect in relatedness for MF participants ( $F_1(1, 23) = 4.59, p < 0.05$ ). In contrast, no significant effect in the relatedness condition is found for EF participants. The control-condition yielded lower error rates (1.5%) than the overall of the other conditions (1.9%). Furthermore, error rates varied importantly for the MF group in the related- and unrelated-condition.

Table 1. Overall results from the statistical by-participants (F1) and by-items (F2) analysis. In the by-items analysis, the  $df_2 = 104$ . Levels of significance are displayed with the F1 and F2 (\*\* $p < .001$ ; \* $p < .01$ ; \* $p < .05$ ).

Condition	F1	df1, df2	F2	df1
marker	4 **	3, 138	2.3	3
relatedness	2.2	1, 46	2.2	1
group	.05	1, 46	3.9*	1
relatedness*group	.63	1, 46	1.2	1
marker*relatedness	3.1*	3, 138	2	3
marker*group	.45	3, 138	.79	3
marker*relatedness*group	.57	3, 138	.83	3

### Response Latencies

Average response latencies are displayed in Figure 3. Results from the overall statistical analysis are displayed in Table 1 for the by-participants analysis and for the by-items analysis. Except in the *comme1*-condition in the related-condition, EF participants showed overall faster response latencies than MF participants. Overall means of response times were 22.5 ms faster for the control condition than for conditions including a pragmatic marker (mean control-condition = 574ms; mean other conditions = 596.5). That is to say, participants of both groups were faster in the control condition. Given that response latencies varied importantly, a significant effect was found for the marker condition in the by-participants analysis ( $F_1(3, 138) = 4.00, p < 0.01$ ) that was not significant in the by-items analysis ( $F_2(3, 104) = 2.31, p = 0.08$ ). Furthermore, a significant effect was found for the interaction between marker and relatedness in the by-participants analysis ( $F_1(3, 138) = 3.1, p < 0.05$ ), which was not significant in the item analysis ( $F_2(3, 104) = 2, p = 0.11$ ).

EF participants showed overall faster response latencies, which shows a significant effect for group in the by-items analysis ( $F_2(1, 104) = 3.9, p < 0.05$ ) that was not significant in the by-subjects analysis ( $F_1(1, 46) = .05, p = 0.83$ ). No significant effect was found for the variable relatedness. The non-significance of the variable relatedness seems to be motivated by the varying nature of the *comme1*-condition in both groups. In a separate ANOVA, in which the *comme1*-condition was eliminated from the by-subjects analysis, response latencies were faster for the related condition than for the unrelated condition. Consequently, a significant effect was found for marker ( $F_1(2, 92) = 4.58, p = 0.01; F_2(2, 78) = 3.36, p < 0.05$ ) as well as for relatedness ( $F_1(1, 46) = 11.25, p < 0.01; F_2(1, 78) = 5.6, p < 0.05$ ).

To compare the *comme1*-condition to the other conditions, an exemplary ANOVA of the *comme1*- and *comme2*-condition was run. This analysis of variance showed inverse effects for *comme1* in the interaction of marker and relatedness in comparison to the other condition. That is to say, *comme1* showed slower response latencies in the related-condition than in the unrelated-condition. All other marker

conditions showed faster response for the related than for the unrelated condition. As a consequence, the analysis revealed a near-significant effect for the interaction of marker and relatedness in the participant analysis ( $F_1(1, 46) = 3.75, p = 0.059$ ), which approached significance in the item analysis ( $F_2(1, 52) = 3.1, p = 0.08$ ). While EF participants were overall faster than MF participants, an inverse effect is found for the related-comme1-condition. This provoked a near-significant effect for the interaction of marker and group in the participant analysis ( $F_1(1, 46) = 3.94, p = 0.053$ ), which was not significant in the item analysis ( $F_2(1, 52) = 1.8, p = 0.19$ ).

### 3.3 Discussion

The present experiment aimed to investigate two underlying aspects of sentence processing that are (1) the impact of the partial equivalent markers *comme* and *genre* on sentence processing, and (2) the impact of contact-induced change of *comme* on sentence processing. Considering the first question, the results indicate a main effect in the marker-condition. This impact and the comparison of the overall means show that the sentences containing a pragmatic marker are processed more slowly than the control condition. This is the case for all conditions; regardless of whether they contained pure hedging functions (condition *comme2*) or a mix of hedging and pragmatic functions (conditions *comme1* and *genre*). This result is extremely important with regard to the concrete impact of pragmatic markers and hedges on sentence processing. Despite the very different nature, objective and respective languages of the tasks, the present results contradict the results of Liu and Fox Tree (2012) to some extent. Liu and Fox Tree (2012) conclude that *like* does not have an effect at all on memory tasks and that listeners may overlook hedge-marked information. The present results indicate that hedges and pragmatic markers may indeed have an effect on sentence processing in that sentences containing a pragmatic marker or a hedge are processed more slowly than sentences without a marker. This effect may have different reasons. First, the approximate nature of hedges triggers a loose reading (adaptor and quotative function) or an approximation on a scale (rounder function). Thus, this modification in the illocutionary force of the utterance may cause the hearer to require more processing time. In other words, the attenuation of the illocutionary force of the utterance may allow the hearer a larger scope of interpretation, which leads to higher costs in sentence processing.

A second possible interpretation of the results concerns the role of pragmatic markers and hedges in spoken language. These lexemes are still very restricted to informal speech and may be connected to a more negative attitude of the hearers towards the message (Blankenship and Holtgraves, 2005; Hosman and Siltanen, 2006). Sentences containing very informal speech may be perceived as rather inappropriate in a formal setting. Therefore, the comparatively formal experimental setting may have influenced the motivation of the participants and in consequence the response latencies. While the first explanation appears to be very plausible with



regard to the results of the present experiment, this alternative possibility cannot be ruled out unequivocally.

The second underlying question of the present experiment concerns the impact of contact-induced language change on the processing of the marker *comme*. In this context, it is very striking that no main effect in the relatedness-condition is found in an overall by-participants analysis, but that a main effect is found when excluding condition *comme1* from analysis. These results indicate that all participants were faster in the related than in the unrelated-condition for the marker conditions *comme2*, *genre* and *control*, but that a diverging effect is found for *comme1*.

In the *comme1*-condition, the related-condition provoked slower response latencies than the unrelated-condition and this tendency is particularly strong for the EF group. For a further explanation of this effect, it has to be highlighted again that it was generally assumed that the related-condition would motivate faster response latencies due to the semantic relatedness of the stimuli sentences and the target words. Opposed to this assumption, the results indicate a reverse effect for the EF group in the *comme1*-condition. This effect may indeed be explained by means of the impact of contact-induced language change and its related consequences. The functions of *comme*, included in the *comme1*-condition, are not attested in spoken European French. Therefore, three possible explanations can be provided for the results of the present experiment. First, the functions of *comme* in the *comme1*-condition are by far more frequent in Manitoban French than in European French. This may lead to a certain frequency effect, in that European French participants process these infrequent functions more slowly in the related-condition. Second, the diverging results mentioned above may be due to productivity. The functions of *comme* in the *comme1*-condition are not productive in European French, which may have hindered the overall processing of the respective sentences. A third explanation considers sentence processing as such, and more precisely sentence parsing. If sentence processing is an incremental process, then the *comme1*-condition may have triggered a certain garden path-effect in EF participants. This effect may be particularly strong in EF participants because the sentences of the *comme1*-condition may be perceived as semantically incorrect or even ungrammatical. Therefore, EF participants were possibly misled by the functions of *comme* in the *comme1*-condition and had to reinterpret the overall sentence meaning during processing. This effect may be particularly strong in the related-condition due to the semantic relatedness of the stimulus sentence and the respective target word.

The results of the present analysis do not allow the unequivocal ruling out of one of the above-named explanations. Still, it is very striking that a similar effect is not found for the *genre*-condition, which included the pragmatic marker *genre* that is absent in Manitoban French. This may be due to the fact that the pragmatic marker *genre* is a more recent item in informal spoken European French and is still clearly restricted to youth language. Therefore, even the EF participants may not be sufficiently familiar with these uses of *genre*, which may appear unusual in an experimental setting.

4. CONCLUSION

The present article aimed to analyse semantic and pragmatic representations of pragmatic markers by means of an experimental investigation. For this aim, the processing of different pragmatic functions and semantic meaning patterns of the partially equivalent French pragmatic markers *comme* and *genre* were compared in a monolingual sentence word verification task.

It can be concluded that the present experiment allows two interesting assumptions. First, hedges and pragmatic markers seem indeed to have an impact on sentence processing, in that they yield overall slower response latencies. This result may be explained by the fact that the functions and meanings, employed in the present experiment, all trigger a loose reading or an approximation on a scale. This ‘impreciseness’ may lead to more scope of interpretation in the hearer, which leads to slower processing times.

Furthermore, the present experiment indicates that the emergence of new functions of *comme* has an impact on the processing of these functions. Here, *comme* in newly emerged pragmatic functions yielded slower response latencies for EF speakers than for MF speakers. It has been pointed out that this effect may have different reasons. It cannot be stated unequivocally if the slower response latencies depend on frequency, productivity or even a certain garden path effect for EF speakers. This is due to the fact that in language change, frequency and productivity are not always clearly separable. It is not always possible to determine by means of diachronic data if a shift in productivity determined an increase in frequency or vice versa. Still, it was possible to prove that EF speakers and MF speakers process the marker *comme* in newly emerged functions very differently. It seems very likely to explain this effect with the contact-promoted language change of *comme*.

In conclusion, the fields of experimental pragmatics and applied psycholinguistics may offer important tools to investigate current theoretic questions on the semantic and conceptual representation of pragmatic markers as well as their impact on sentence and discourse processing.

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APPENDIX A

STIMULI USED IN THE SENTENCE-WORD VERIFICATION TASK

Condition	Sentence	Target related	Target unrelated
<b>Comme1</b>	Il est comme « touche pas ta face »	figure	fête
	Le gars est comme "c'est beau ça"	charme	pomme
	Tout le monde est comme "oh mon dieu"	surprise	chemise
	J'étais comme "je n'ai pas de l'argent"	monnaie	soirée
	C'est comme "oui j'ai vu ça"	regard	toit
	Elle était comme "là je ne sais pas"	conscience	cuisine
	La guitare va comme "cling cling cling"	bruit	quartier
	Le père a comme 35 ans	parent	oreille
	J'ai fini dans comme vingt secondes	minute	copain
	Je l'ai fait en comme trois mois	année	épaule
	ça fait comme cinq fois qu'elle t'appelle	téléphone	boîte
	Il va chanter comme un couple de chansons	artiste	colère
	On a eu comme 3 semaines de pratique	exercice	chien
	On a comme vingt mille pièces	argent	manteau
	<b>Comme2</b>	C'est comme une édition spéciale	numéro
Il nous donne comme ses informations		avis	jardin
Il faut qu'on achète comme un ordinateur		machine	sommeil
Elle a préparé comme la table		dîner	retard
Il y a comme une tisane de camomille		herbe	meuble
Je vais faire comme un Dvd du concert		spectacle	oiseau
On cherche comme un caméraman pour filmer		réalisation	mari
Il portait comme une casquette		chapeau	chaîne
J'ai étudié comme sciences politiques		faculté	chaise
On fait comme une petite pause		repos	jeunesse
Ca va se passer comme en novembre		hiver	parole
Ils veulent enlever comme les critères		règle	montagne
Ils cherchent quelqu'un pour faire comme le design		annonce	sentiment
Elle me faisait comme un dîner		déjeuner	bateau
<b>Genre</b>		Elle téléphone genre 10 fois par jour	appareil
	Au lieu de lui dire genre tu me manques toi	amour	escalier
	Toute la famille y passe genre vingt bisous	amitié	lendemain
	C'était à genre un quart d'heure de la fac	collège	début
	Une petite rencontre genre dix quinze personnes	réunion	effort

Condition	Sentence	Target related	Target unrelated
	Des émissions de débat genre ça se discute les choses	programme	docteur
	Il y a un silence de mort genre fais nous rire	calme	résultat
	J'ai entendu un bruit de camion genre poubelle	voiture	sentiment
	C'est une nouvelle forme de consommation genre biscuits	repas	vitre
	C'est genre là où les gens ils viennent	renconte	événement
	Elle pose des questions genre un peu différentes	réponse	beauté
	Ils veulent plutôt genre petites agences	bureau	pont
	C'est un sketch genre télévision	comédie	forêt
	C'est l'éclairage avec des lanternes genre moyen âge	lampe	ennemi
<b>Control</b>	J'aime bien la première chanson	musique	endroit
	Il fait un lancement de disque	vente	espace
	On cherche un nouveau guitariste	membre	verre
	Tu peux y aller réparer ton vélo	véhicule	couloir
	Je travaille à produire le document	papier	bonheur
	Il connaît un couple de personnes	individu	lune
	On revient le vingt cinq août	retour	ventre
	On faisait treize heures en voiture	voyage	feuille
	Là-bas le service est mille fois mieux	aide	campagne
	Il m'a donné cinq timbres	lettre	docteur
	Ils chargent 30 dollars de l'heure	frais	paysan
	Dans la vie elle a douze employés	ouvrier	faute
	À l'école il y a 150 élèves	étudiant	champ
	Je dois dépenser 400 pièces	prix	hiver

**Filler**

Les cours avaient fini au mois de mai	culce
On fait beaucoup de travail avec le Québec	manuban
Je t'ai demandé l'autre jour	qaze
Ils ne savent pas ce que je fais	niole
Tu changes tous tes plans	trorbin
J'ai écrit une lettre aujourd'hui	nindre
Je reste en ville jusqu'à jeudi soir	meivupir
Maintenant il faut vendre les billets	aacher
On ne dormait pas beaucoup la semaine passée	raifiba
Cette histoire est vraiment ridicule	pizard
Je fais toute sorte de projets	itigrul
Ils vont jouer avec nous en concert	psyscie
Nous voulons enregistrer un album cette année	domria



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Ils font beaucoup d'argent	nexuam
C'est le temps de manger maintenant	peuterin
Je vais vous parler un petit peu	alpilsop
Cette semaine je suis allé au café	clorndupe
J'aime le endroit qui sont à la mode	tumecuisse
Deux copains à moi organisent des soirées	cairle
C'est un milieu un peu particulier	jentur
J'ai fait ma fiche de lecture ce weekend	gonse
Tu es un peu stressé aujourd'hui	manyer
Mon père revient dans son village nata	boanrer
j'espère que je ne me suis pas trompée	donnobau
elle essayait de faire changer les papiers	urmaier
Ma mère parlait l'allemand avec ses parents	ryrement
On va se faire un petit repas ce soir	lasafie
Ma copine a fini son stage	oujebote
Il y a des petites boutiques sympas là-bas	poscin
Mes parents habitent à cinq minutes de la plage	bomyol
Mes grands-parents m'ont laissés leur voiture	nadelé
Tu m'as demandé une faveur	pobis
Le mercredi, tu m'as appelé pour parler	gulule
C'est elle qui décide combien d'argent est dépensé	tolbena
Quand ça lui plait elle fait ses propres règles	syemsur
Elle est habituée à faire des conneries	oryrta
Tout le monde demande les mêmes questions	binumvode
Ils sont venus à l'heure de dîner	poitet
Il a des problèmes d'apprentissage	caggeur
Tu peux réussir à les convaincre	mordye
On travaille en partenariat avec cette entreprise	ulan
Tous les deux ans il fait une collection de mode	sarecoel
Il fait de la broderie traditionnelle	inal
Je ne les ai jamais vu travailler	bume
Je pars en vacances cette semaine	piteur
Ils sont partis chaque fin de semaine	mipaulil
Le serveur au bistro est italien	allmer
On parlait de la grammaire de la langue française	atoeir
Mon arrière-grand-père est né en Italie	plipe
Ma copine a une soeur et deux frères	surerive
Mon nom du milieu est Vincent	cradul
Il veut toujours faire quelque chose d'autre	vaxiceleur
Dans neuf mois je vais avoir 25 ans	gecasout
J'aime pas trop cette histoire	liotem
À la fac j'ai fait un peu de sociologie	paubair
Il y a des gens qui aimeraient m'embaucher	niteau
J'ai commencé à enseigner il y a deux ans	priquel
Je suis retourné à l'école cette année	irbepes
J'ai vu des photos de cette maison	hijer
Je suis rentrée en train à La Rochelle	laoeur
On s'est promené un petit peu à la plage	muxumpe
Il va amener la voiture à un garage	turphille
on va aller boire un petit coup	reau

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c' est avec mon frère que je tiens le magasin	amep
on est capable de payer toutes ces charges	quyir
c' est mieux de s' adresser directement à une personne	sedien
il a l' impression qu' on s' occupe de lui	blunce
c' est un magasin avec une ambiance particulière	nichation
je me fais plus d' illusions sur la politique	esolac
je ne suis jamais allé à la mer	vicojon
on a fait une belle croisière	azarme
on devait monter à Paris pour prendre l' avion	anilgre
sur le bateau ils vendent pas d' alcool	nirmence
Ce sont des morceaux de musique classique	oeul
Il a dormi toute la nuit	efin

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