



# The effect of task constraints on idea generation in creative word-formation group work for beginner-level German learners

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## 1. Introduction

In foreign language (FL) teaching, instances of students working in pairs or triads increased with the rise of communicative, project- and task-based teaching methodologies (Duff, 2014; Willis & Willis, 2007). Group work has been associated with linguistic, cognitive, motivational, and social benefits (Dörnyei & Murphey, 2003; Lantolf & Thorne, 2006; Swain et al., 2002). Tasks in group work function as learning affordances where students engage in possible co-construction of form and meaning (Lantolf & Poehner, 2008; Swain, 2005), and the effect of manipulating tasks within the form-meaning continuum has been the target of several investigations. For example, Laufer and Rozovski-Roitblat (2011) found that practicing new vocabularies in form-focused tasks led to better long-term retention, whereas Shintani (2013) demonstrated that for beginner-level learners, contextualized input and student-initiated production within meaning-focused tasks benefits the acquisition of nouns and adjectives. Similarly, Wang (2019) stressed the need for group work supporting authentic experiences with the FLs since they found that creative meaning-focused tasks led to more negotiations of meaning.

Therefore, ideally, the primary focus of a group work task lies on active and goal-oriented negotiations corresponding to some real-world activity (Ellis, 2003, p. 6). However, especially in assessment-oriented environments such as Japan where language learning frequently remains strongly associated with summative assessments rather than real communicative needs (Komiya Samimy &

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Kobayashi, 2004), students have been observed to produce only the minimum linguistic output required to complete the task (Carless, 2008, 2012; Littlewood, 2007). For example, undergraduate students in Japan are often required to select a second FL such as German for at least two years. They are then commonly rushed through teacher-fronted grammar instruction and classrooms relying heavily on communicative tasks for only a couple of hours a week—with group work being one of their rare opportunities for using the target language (TL) to fulfill communicative needs.

Further, many DaF (*Deutsch als Fremdsprache*—"German as a foreign language") textbooks of said classes employ tasks aimed at learners already living in countries where German is the majority language. For example, Neary-Sundquist (2015) conducted a quantitative examination of textbook exercises dealing with vocabulary development in five lower-level German language textbooks widely used in American German classes at the tertiary level. It was found that activities largely addressed aspects such as attention to meaning (39.9%) or usage (48.5%). However, a more fine-grained coding revealed a disproportional distribution of targeting form- and meaning-mappings (36.4%) and grammatical functions (46.4%) in comparison to other meaning- and usage-oriented categories such as collocations (0.7%) or schematic and categorical associations with vocabulary (2.7%). Also, little to no tasks were found that dealt with word-parts (0.8%) which is particularly worrying as the German language utilizes compounding (i.e., the combination of two or more word-parts to form a new word) to a great amount (Berg et al., 2012). Especially for beginner-level learners, who might struggle when using newly acquired words or compounds in free production (see Erlam & Ellis, 2018, p. 2), such textbook activities then provide "essentially no opportunities to develop knowledge and skills concerning the underlying concept and referents that [are] associated with a word" (Neary-Sundquist, 2015, p. 72), instead favoring repetition of input in strongly controlled communicative tasks.

This partially contradicts the view on group work as a place to engage collaboratively and come up with new ideas by listening to input from peers (Nijstad et al., 2003) or combine information to create something new (Milliken et al., 2003). Here, the learning potential of group work for beginner-level students could be revitalized by foregrounding attention to specific form-meaning relationships (i.e., word-formation) in creative language play (e.g., Pomerantz & Bell, 2007; Tin, 2011; Tocalli-Beller & Swain, 2007), as well as by having students utilize their L1 "to mediate their understanding and generation of complex ideas (language) as they prepare to produce an end product (oral or written) in the target language" (Swain & Lapkin, 2013, pp. 122–123). The current study thus takes a position that embraces the role of the L1 for collaboratively rehearsing, testing, and confirming language and sees creative and playful tasks as an opportunity for beginner-level learners to express agency by productively engaging in a task rather than being controlled by it (Pomerantz & Bell, 2007). Drawing from studies investigating language-related episodes (LREs), and contemporary theories concerned with language play and creativity, the current study attempts to illustrate how modifying word-formation task designs with formal constraints (i.e., alliteration—building compounds with two or more words that begin with the same letter) can create highly productive group work environments through promoting the emergence of new ideas and association chains.

## 2. Literature review

### 2.1. LREs and group work

The idea that collaborative dialogue or private speech (i.e., overt self-directed speech; see Lantolf & Thorne, 2006) serves understanding by internalizing knowledge was brought into the fields of second language acquisition (SLA) by Swain (2006) under the term *languageing* which she defined as the "process of making meaning and shaping knowledge and experience through language" (p. 98). In group work, students pool their individual resources and actively "engage in language-mediated cognitive activities such as, for instance, formulating or testing hypotheses, offering and assessing new input, or correcting themselves or others" (Dobao, 2014, p. 498). Accordingly, studies suggest that languageing plays an important role in learning grammatical and lexical knowledge in the L2 (e.g., Bao, 2019; Brooks et al., 2010; Knouzi et al., 2010; Suzuki, 2017; Suzuki & Itagaki, 2009; Swain et al., 2009).

The effects of languageing in collaborative dialogue have also been documented through the observation of LREs—instances of interactional talk or feedback centering around lexical or morphosyntactic structures of the target language (e.g., Gallardo del Puerto & Basterrechea, 2021; Kaivanpanah & Miri, 2017; Swain & Lapkin, 1998; Williams, 2001). LREs can be analyzed based on targeted structures, outcomes (e.g., resolved or unresolved), and the occurring feedback's level of explicitness (e.g., Storch, 2008). For example, Leeser (2004) examined number, type, and outcome of LREs for dyads of students with varying proficiency levels in a content-based L2 Spanish course. It was found that pairs of low-proficiency learners exhibited fewer LREs than their high-proficiency counterparts. Choi and Iwashita (2016) came to a similar result after providing Korean L1 speakers of varying English levels with L2 English discussion tasks. The researchers reasoned that members of groups consisting of only low-proficiency speakers "might be unsure as to their role—for example, whether they can seek help from or offer help to other members" (p. 126).

Under the assumption that LREs represent L2 learning in progress (Swain & Lapkin, 1998), the above-mentioned findings then beg the question of how group work can be turned more feasible for beginner-level learners. Here, we should remind ourselves that the concept of languageing emphasizes the use of the L1 for mediating cognitive development (Swain et al., 2009, p. 22). For instance, Swain and Lapkin (2000) showed how students rely on their L1 when managing tasks, resolving lexical or grammatical issues, and developing interpersonal relationships. Further, while observing collaborative interaction between adult learners of Spanish, Antón and Dicamilla (1999) noticed that students frequently employ their L1 in private speech whenever they "direct their own thinking in the face of a cognitively difficult task" (p. 243). However, not only the frequency of languageing but also the quality of interaction and level of engagement are important (e.g., Kaivanpanah & Miri, 2017). For example, a study conducted by Nassaji and Tian (2010) revealed that working collaboratively on tasks dealing with English phrasal verbs indeed resulted in a higher accuracy of task completion compared to working on tasks individually, but such results didn't translate to significant vocabulary retention gains in

post-tests. The authors reason that “the interaction might not have been rich enough to lead to the appropriation and internalization of the word knowledge” (p. 412). Similarly, Storch (2008) found that elaborate engagement in LREs (i.e., confirming and explaining linguistic items) was more beneficial than limited engagement.

In summary, although the studies discussed so far deal with LREs emerging from various written or oral task conditions, it is generally assumed that interaction focusing on features of the TL in either L1 or L2 can help learners control and internalize linguistic knowledge (Swain & Lapkin, 1998). The following sections look at how such interaction in group work can be enriched through the “motivator and facilitator” (Bushnell, 2009, p. 64) that is language play, and how (constrained) creativity can work as a driving force that enables the generation of new ideas and associations (Milliken et al., 2003).

## 2.2. Language play and creativity in group work

In SLA, language play and creativity have garnered increased attention (Bell, 2005; Broner & Tarone, 2001; Cook, 2000; Pomerantz & Bell, 2007; Tarone, 2000). Language play can be defined as the “(creative) manipulation of L2 forms to create humor and reflect on what learners are (linguistically and/or communicatively) concerned with” (Heidari-Shahreza, 2018, p. 3). Creativity (in applied linguistics) is “the playful use of language to construct new meaning” (Tin, 2012, p. 179). It has been theorized that playing creatively with language helps lowering anxiety, making moments of a discourse more memorable, fostering sociolinguistic competence, and destabilizing or restructuring the learner’s interlanguage by situating her in a position that demands both accuracy and innovation (Bushnell, 2009, p. 50–51). Consequently, there is an extensive amount of studies showing how language play stimulates learners’ reflection on form-meaning relationships by making phonological, morphological, syntactical, or lexical aspects of language more prominent (e.g., Bell, 2005, 2012a, 2012b; Broner & Tarone, 2001; Bushnell, 2009; Lucas, 2005; Pomerantz & Bell, 2007; Tin, 2011; Tocalli-Beller & Swain, 2007). For example, Bell (2012a) investigated the interaction between adult L2 English learners in a conversation class and coded all instances of LREs (i.e., metalinguistic discussions) for whether they were done in a playful or serious manner. Subsequent tailor-made tests targeting the items that occurred in said discussions revealed a “statistically significant trend toward stronger recall of those items that have been the focus of playful attention” (p. 259).

Recognizing the benefits of language play, Cho and Kim (2018) offer several practical suggestions for task designs that target creative use of language. Among them is a word-blending activity in which students need to come up with novel words such as *Pencil-vania* (a place pencils go for vacation) by replacing syllables or phonemes (example taken from Cho & Kim, 2018, p. 5). Here, play occurs through contrasting the creative linguistic product with (standard) formulaic language which could then lead to an increased awareness of the latter (Bell, 2012a; Tocalli-Beller & Swain, 2007). Consequently, evaluating creativity resides within the degree of perceived novelty or uniqueness in the product (Runco & Jaeger, 2012).

In the classroom, creative episodes take place constantly at the microlevel whenever decisions are made (e.g., when peers collaboratively decide on how to fill out a worksheet in a group work task). Ideas in divergent thinking emerge in executive or associative processes (Marron et al., 2018). The latter involves the activation of semantic networks through stimuli such as the immediate environment or the input of peers in group work (Nijstad et al., 2003). Ness and Glăveanu (2019) build on the idea-generating potential of groups by understanding creativity as a dynamic process grounded in the dialogical relationship with the (social) world surrounding us. Such dialogue also happens in the form of private or inner speech and can “blur any sharp distinction between ‘individual’ and ‘group’ creativity and make both intrinsically collaborative” (p. 199).

## 2.3. Constraints and word-formation

One way to kindle creative processes is by imposing constraints on tasks. Constraints can be defined as limitations on freedom and choices placed on the creative project (Joyce, 2009). What at first appears to be contradictive can be observed in literature, art, fashion, architecture, or advertising on a day-to-day basis (Stokes, 2006). Unrestricted artistic freedom lures us into taking the safe road. What makes Pablo Picasso and Georges Braque’s self-imposed cubism and the rigid syllable structure of poetic disciplines so outstanding is not freedom but the very absence of it. Even in communicative language classrooms, teachers are often confronted with the same answers about weekend activities or hobbies when prompting their students. The more resources we are allowed to draw from, the fewer creative combinations of available resources emerge (Chua & Iyengar, 2008). Adding constraints that target meaning (*Imagine you are on a tropical island. What do you do?*) or structure (*Tell me about your weekend, but make it rhyme!*) will thus promote the exploration of new solutions (Tin, 2012, 2013). For example, Iida (2011, p. 181) found statistical evidence that L2 *haiku* composition tasks supported the development of L2 written fluency, word count, and frequency of linguistic features, such as verbs or impersonal pronouns. Tin (2011) investigated creative language use in writing tasks for two groups with various degrees of formal constraints (similes vs. acrostics). The addition of formal constraints provided opportunities for complex syntax and creative language use to emerge through putting “selection pressure on L2 learners” (Tin, 2011, p. 231). Similarly, the repetition of a beginning letter or sound at the word or phrase level (i.e., alliteration) constitutes another promising constraint. Alliterations are assumed to promote awareness of the morphologic and phonologic inventory of a language (Cekaite & Aronsson, 2005, p. 187), and empirical studies credit mnemonic potential to alliterations for L2 learners (e.g., Lindstromberg & Boers, 2008).

An especially fruitful process that allows constraints is compounding (i.e., the combination of two or more lexical words)—one of the most productive word-formation mechanisms in language (e.g., Scalise & Vogel, 2010). In German, compound nouns are encountered at a rate about twice as high as in English (Berg et al., 2012), causing their learning to be an integral part of the German-language classroom. For L1 acquisition, the understanding of word-formation in German plays an important role in the lexical development and categorical understanding of children from 21 months (Schipke & Kauschke, 2011). Given the importance of

compounds for language acquisition, German-language textbooks can be criticized for their lack of word-formation activities (e.g., Neary- Sundquist, 2015). In language play dealing with compounding (see [Cho & Kim, 2018](#)), constraints such as alliterations could foster creativity and positively influence productivity, frequency, and transparency of the produced language. Here, Bauer (2001, p. 65–66) proposes “non-productive innovation” as a definition for morphological creativity. The more predictable a coined word is, the less creative. In other words, the more unique and abstract (opaque) the semantic extension of a new compound is, the higher its degree of creativity. It can be assumed that such highly creative language promotes the occurrence of LREs as a type of incidental focus on form-meaning mappings (e.g., [Bell, 2012a, 2012b](#); [Heidari-Shahreza, 2018](#)). For example, students interviewed by [Tocalli-Beller and Swain \(2007\)](#) expressed how working out the meaning of obscure language (e.g., riddles and puns shared in the classroom) helped them reach a deeper vocabulary understanding (p. 165).

From the literature discussed so far, it can be assumed that playful engagement in compounding in German could take the important role of providing room for LREs that a) allow incidental focus on lexis and the mechanisms of word-formation, and b) offer rich interaction (i.e., languaging) centered around creative word generation facilitated by an alliteration constraint in the task design. The next section deals with the question of how creativity is analyzed in this study.

## 2.4. Accessing creativity in conversation

While some studies code and quantify occurrences of playful LREs based on rater decisions and criteria such as the occurrence of smile or laughter (e.g., [Broner & Tarone, 2001](#); [Sterling & Loewen, 2015](#)), others are more concerned with qualitatively accessing micro-genetic (short-term) changes within playful LREs as aspects of language development (e.g., [Tin, 2011](#)). At the same time, since languaging ([Swain, 2006](#)) and creativity ([Ness & Glăveanu, 2019](#)) have been pinpointed as fundamentally social concepts, a methodology such as conversation analysis (CA) for exploring the relationship between creativity and social action is in order (see [Bushnell, 2009](#)). Seeing cognition grounded in interaction and being locally produced ([Schlegloff, 1991](#)), CA describes how talk unfolds in real-time. Research investigating co-construction of meaning (e.g., [Markee, 2000](#); [Mori, 2002, 2004](#)) or the interrelationship between language use and language acquisition (e.g., [Firth & Wagner, 2007](#); [Mori & Markee, 2009](#)) have proven CA to be a valuable analytical instrument for language classroom tasks.

To sum up, communicative group work tasks can lead to instances of collaborative languaging about form and meaning (i.e., LREs) in both the L1 and L2 (e.g., [Swain et al., 2009](#)), but for beginner-level learners, there have been reports of fewer and less substantial episodes of interaction (e.g., [Carless, 2008](#); [Leeser, 2004](#)). Language play (i.e., the creative use of language) could increase salience and retention of form-meaning relationships (e.g., [Lucas, 2005](#)). However, language play is among others governed by the degree of creativity which in turn can be partially controlled for by constraints in the task design (e.g., [Tin, 2011](#)). There is a lack of research investigating the interplay between constraints in group work tasks and creativity (measured in the number of generated ideas, and LREs surrounding learners’ explanation proposals). Borrowing from research about small groups (e.g., [Baruah & Paulus, 2008](#); [Nijstad et al., 2003](#)), the current study proposes a way to approach creativity by quantifying unreported ideas generated by participants, and to document and analyze the effects of an alliteration constraint through the analytic lens of conversation analysis. The following two research questions are addressed:

1. Are there any differences in the number of ideas proposed in word-formation tasks with and without a formal constraint (alliteration)?
2. What effect does the formal constraint have on the creative process and product?

## 3. Method

### 3.1. Participants

Data for this research were collected with the help of a total of 18 students at a Japanese university. The majority of the participants were in their first or second year of undergraduate school and belonged to faculties of science and engineering or law. At the time of the study, they were enrolled in beginner or low-intermediate German-language classes.<sup>1</sup> Recruiting happened from intact classrooms and via convenience sampling in cooperation with the respective language teacher. Students were divided into 6 groups of three in all and assigned randomly to either a constraint (C) condition where they needed to create compounds in German consisting of only words starting with the same letter or a nonconstraint (NC) condition that allowed them to draw from any German word available to them. [Table 1](#) shows the distribution and profiles of the student groups. None of the students had resided in German-speaking countries for longer than six months. Across all groups, the average usage time of German outside the 90–180 min of class per week consisted of less than 2 h per week. All students gave English as the only other FL they had studied. Owing to the students’ low exposure to German and overall orientation to a non-language related major, the individual German language proficiency of the students was further evaluated to be in line with their respective classroom levels by their German language teachers as well as the researcher and current author.

<sup>1</sup> Beginner and low-intermediate levels were defined on the basis of the respective classroom levels stated in the university syllabus as well as the utilized textbooks’ representative level in the CEFR framework. Textbooks used in the German language classrooms include: Funk, H., & Kuhn, C., (2017). *Studio [express] Kompaktkurs Deutsch A1*. Cornelsen. Funk, H., & Kuhn, C., (2017). *Studio [express] Kompaktkurs Deutsch A2*. Cornelsen. Winzer-Kiontke, B., & Kuhn, C. (2010). *Studio: Die Mittelstufe Deutsch als Fremdsprache B2/1*. Cornelsen.

**Table 1**

Profile of student groups (NC = nonconstraint, C = constraint).

Group and proficiency level	Name (pseudonym)	Gender	Age	Self-reported length of time studying German (in months)
NC1 Beginner	Hanako	F	18	12
	Shun	M	19	12
	Ryo	M	19	7
NC2 Beginner	Yoosuke	M	19	24
	Kotaro	M	20	24
	Matsuo	M	20	24
NC3 Low-intermediate	Mei	F	22	24
	Kenta	M	22	48
	Kyoko	F	29	12
C1 Beginner	Hiro	M	19	8
	Tetsuo	M	19	9
	Daichi	M	19	8
C2 Beginner	Hideo	M	19	48
	Jun	M	20	24
	Taro	M	20	24
C3 Low-intermediate	Akira	M	22	36
	Kana	F	22	36
	Ken	M	21	36

### 3.2. Material and procedures

All students were provided with a questionnaire and an information sheet accompanied by a brief instruction about word-formation by the researcher. The questionnaire asked about the students' age, gender, and length of time studying German. It was also used to confirm whether they frequently used German outside the classroom. The information sheet offered an overview and explanation of nominal compounding in German. Students were also given a list of examples for possible linking elements between the two constituents of a compound (*s*, *n*, *e*, *er*, and the *zero-morpheme*  $\emptyset$ ). The comprehensive nature of the instruction happened in line with previous studies that stress the importance of equipping learners with explicit and holistic knowledge about linguistic concepts before they become verbalized (e.g., Brooks et al., 2010). At the bottom of the information sheet, students found instructions encouraging them to work collaboratively on the task at hand and to communicate with each other using Japanese or German. All instructions were provided in the students' L1 (Japanese) to ensure comprehension and support students "in developing explicit understanding about how grammar operates in the TL" (Carless, 2008, p. 336).

After confirming students' understanding of the information sheet and setting up the audio recording devices, worksheets of one of the conditions (constraint vs. nonconstraint) were randomly assigned to each group. The worksheets contained a brief instruction, a table with two examples, and approximately 30 empty rows to be filled. Having students write down their ideas on a single sheet gave the group work task a "sense of accomplishment and goal-directness" (Poupore, 2016, p. 724) which ensured the participants' collaborative evaluation of proposed ideas.

### 3.3. Group work task

The worksheet reinstructed the participants of the nature of compounds, possible infixes, and their relevance to word-formation processes in German. Participants of each condition were instructed to work in triads and write down as many German compound words as they could come up with, an approximate translation into Japanese and a brief explanation for each. The instructions explicitly stated that suggestions could be extant or otherwise. The explanation cells were added to ensure that students would actively consider the possible meanings of a given creation. At the top of the table, two examples for compounds (one existing word and one

**Table 2**

Examples of Worksheet Answers (NC = Nonconstraint, C = Constraint, English translation in brackets).

Condition	Compound in German	Explanation in Japanese
NC	<b>Käsebro</b> (cheese bread)	<i>chiizu no pan</i> (cheese bread)
NC	<b>Trinkenplatz</b> (drinking place)	<i>osake o nomu tokoro</i> (a place to drink alcohol)
C	<b>Regenrad</b> (rain bike)	<i>ame yoke no dekiru jitensha</i> (a bicycle that can repel rain)
C	<b>Urlaubsuhr</b> (vacation clock)	<i>jikan ga susumu no ga osoi tokee</i> (a clock whose time runs slow)



nonce word) were provided by the researcher. Two instances of compounds given by each of the two groups can be seen in Table 2.

The worksheets for both conditions were identical except for an additional line on the handout of the group with the constraint condition instructing the participants to only invent compounds where both words start with the same letter (alliteration as in *Regenrad*). This way, creative problem-solving was both limited and directed (Stokes, 2006; Tin, 2011). The examples given by the researcher reflected the respective condition. The task was scheduled for 20 min, after which worksheets were collected.

### 3.4. Transcription and coding

The data were transcribed following conversation analytical conventions (e.g., Markee, 2000). To give a clear distinction between languages in the transcripts, all German words produced by the participants are put in bold and an English translation for the German language is given in curly brackets immediately following the relevant word in the English text. A list of symbols is provided in the appendix. In total, 120 min of conversation have been transcribed, amounting to over 5000 lines. Two native speakers of Japanese assisted the researcher with the transcription and translation process. The English translation is provided immediately below each turn in the excerpts.

The data having been transcribed and screened, the researcher analyzed and coded all instances of idea proposals and LREs resulting from participants explaining their created compounds. Ideas were defined as either self- or other-directed word proposals for completing the task in German or Japanese. The coding has been designed based on idea contributions in small-group communication and group work dynamics (e.g., Nijstad et al., 2003; Poupore, 2016). In comparable methods, creativity is quantified by counting the number of unrepeated ideas generated by participants (e.g., Baruah & Paulus, 2008). In this study, each proposed word (for utilization in a compound) by itself or within a compound was counted as one novel idea the first time it appeared in the transcript in either language. For example, the compound *Käsebro*t (cheese bread) in Table 2 would have been counted as two ideas if both constituents of the compound weren't uttered before. Repetitions of the same word, mere translations or inflections of the same word were not counted.

The task design led to many instances of students engaging in playful talk about meaning and form for each proposed idea (i.e., languaging as hypothesis testing, or offering and assessing input, Dobao, 2014). Studies concerned with segments in which learners talk about or question language use in the context of group work (i.e., LREs) are operationalized in categories such as lexical vs. grammatical LREs (e.g., Williams, 2001), resolved vs. unresolved LREs (e.g., Dobao, 2014; Leeser, 2004), playful vs. serious LREs (e.g., Bell, 2012a), or elaborate vs. limited levels of engagement (Storch, 2008). In this study, it was decided to focus on LREs that revolved around explanation candidates for each given compound (henceforth *explanation proposals*). Such episodes were defined as instances of co-construction, where one novel explanation attempt other than a direct translation was discussed with a minimum of two participants over at least two conversational turns. For example, an emerging discussion about the explanation of *Trinkenplatz* (drinking place) as a place to drink alcohol (see Table 2) would have been counted as one explanation proposal. All other lexical or grammatical LREs that resulted from students talking about ideas or explanations for ideas are evaluated and discussed qualitatively.

The rationale for this coding method is as follows: First, unlike cloze or dictogloss tasks that encourage either (incidental) focus on form or focus on meaning (cf. Dobao, 2014), this study's task design already explicitly required students to discuss both form (word-formation) and meaning (the written explanation of the compound on the worksheet). Second, previous research documented that the quality of LREs might be more substantial than their quantity (Nassaji & Tian, 2010) which could be especially true for low proficiency level learners (Leeser, 2004). Therefore, following the suggestion that the level of engagement can be substantiated by the number of turns in a conversation (Kaivanpanah & Miri, 2017, p. 931), quantifying explanation proposals for one creation allowed to draw conclusions about the intensity of engagement with generated ideas as students had to pool together all their knowledge about concepts, referents, and associations with each word in the compound (cf. Nation, 2013). For instance, students of group NC3 embarked on an intensive talk about the co-constructed compound *Sonnenkopf* (sun head) establishing two semantically related explanation proposals in over a total of 42 turns: *being bald* and *the condition of having a shiny head*. Thus, the overall engagement and various interpretations of the compounds allowed the meaning-targeted LREs surrounding the compound to be gauged as elaborate. However, the above example also shows that, given the nature of idea generation through associative processes (Marron et al., 2018), elaborate negotiation of semantics made it difficult to establish where exactly one isolated explanation became the target of an LRE in creative language play (cf. Sterlin & Loewen, 2015). Here, instructions to write down the meaning of the compounds on the worksheet for each idea made explanation proposals more goal-directed and structured, and therefore easier to access (i.e., students needed to decide on fully formulated explanation proposals they wanted to write down in the worksheets).

Finally, to check for reliability, the researcher asked one of the assistants to code one transcript (2412 words in 775 turns). An initial comparison of the results revealed 91.93% inter-rater reliability for counted ideas and 85.71% inter-rater reliability for explanation proposals. The discrepancy between the coders resulted mainly from the ambiguity of a) deciding on what constitutes an attempt at a direct translation or an explanation proposal, and b) distinguishing between further elaboration on the same explanation or starting a new explanation proposal (as in the two semantically related explanation proposals mentioned in the example above). Such differences were resolved by discussion of problematic cases (see Storch, 2008).

## 4. Results and discussion

### 4.1. Idea proposals

A total of 346 ideas—defined as unrepeated word proposals for completing the task in German or Japanese—was collected and

analyzed. The first research question in this study addressed whether a formal constraint in the task design would influence the number of proposed ideas. Table 3 shows descriptive statistics about the count of idea proposals in German and Japanese per group. Results suggest that the inclusion of a formal constraint indeed affected idea generation.

The combined number of ideas proposed in Japanese and German for the nonconstraint groups was higher than for the constraint groups with some variation in between groups. However, little difference was found in the number of compounds written in the worksheets between conditions. Further, the percentage of ideas proposed in German was more than twice as high for the constraint condition across all groups. Combining words with the same starting letter resulted in a shift of an initial focus on meaning to an initial focus on form (spelling). Thus, for the constraint group, it became necessary to first gather as many German words as possible before turning attention to word-formation or attempting any explanation proposals. The nonconstraint group on the other hand miss this selection pressure which allowed them to “construct the new message through the L1 first and then using the L2 to convey known meaning” (Tin, 2011, p. 231). To illustrate this point, excerpt 1 below shows 3 students of group NC2 in the middle of brainstorming an appropriate compound to fill in the worksheet row with.

## EXCERPT 1

## NC2 (Nonconstraint Group 2)

- 
- |            |   |
|------------|---|
| 1 Yoosuke  | petto botoru kya:ppu (.) >a< °kitsui no kana° [sore wa kitsui na:]<br><i>PET-bottle cap, ah might be tough. That might be tough.</i>              |
| 2 Kotaro   | [iya wakannai<br>ryoohoo wakannai]<br><i>Nah, (I) don't know. (I) don't know either.</i>  |
| 3 Matsuo   | hehe he h fryoohoo wakannai h pettobotoru mo kyappu mo fwakannaif<br><i>Hehe he h (we) don't know either. (We) don't know PET bottle nor cap.</i> |
| 4 Yoosuke  | bukku kabaa  (.) kabaa wa wakannain da<br><i>Book cover. I don't know cover.</i>  |
| 5 Kotaro   | un dakara kabaa ga wakaranai no<br><i>Yeah, I told you (we) don't know cover.</i>   |
| 6          | (1.8)   |
| 7 Yoosuke  | shaapupen no shi:n  (.) ikeru ka<br><i>Is mechanical pencil lead possible?</i>  |
| 8 Matsuo   | shin mo wakanee na<br><i>I have no idea what lead is.</i>   |
| 9 Kotaro   | shin no (.) jaa shoo ga nai kara <b>kopfschmerzen</b> da<br><i>Lead something. Well whatever so <b>Kopfschmerzen</b> {headaches}.</i>             |
| 10 Matsuo  | >sore dame da<<br><i>That's no good.</i>  |
| 11 Kotaro  | hu [he h]<br><i>Hu he h.</i>  |
| 12 Yoosuke | [ <b>kopf</b> ] <b>schmerzen</b> dame na<br><i><b>Kopfschmerzen</b> {headaches} is no good.</i>   |
| 13 Matsuo  | minna shitteru sonna no<br><i>Everyone knows that.</i>  |

Yoosuke proposes the ideas *PET-bottle cap* (1) and *book cover* (4) in Japanese. We can see how languaging operates on both the level of collaborative dialogue and private speech (e.g., Lantolf & Thorne, 2006) as Yoosuke attempts to answer his own idea after a short break without waiting for reaction to his suggestions. Note that he does not use the Japanese question particle *ka*, as in 7, further indicating that his utterances are at least partially self-directed (cf. Antón & Dicamilla, 1999). In 7, Yoosuke is asking for the translation of another word (*mechanical pencil*). However, with the participants not knowing or recalling the German translation to the Japanese words, lexical problems are soon left abandoned (cf. limited engagement and unresolved LREs in Storch, 2008). This also confirms

**Table 3**

Ideas proposed per group and language (NC = nonconstraint, C = constraint).

Group	Total ideas	Ideas first proposed in German	Ideas first proposed in Japanese	% German	Compounds written in the worksheet
NC1	62	17	45	27.41%	13
NC2	90	41	49	45.55%	19
NC3	63	28	35	44.44%	18
NC totals	215	86	129	40%	50
C1	39	32	7	82.05%	14
C2	53	45	8	84.9%	18
C3	39	37	2	94.87%	16
C totals	131	114	17	87.02%	48

Leeser (2004) who found that LREs concerned with lexical items are frequently left unresolved when groups consist of beginner-level learners (p. 70). In such instances, it can be assumed that no language development can be traced back to the LRE as no solution is provided within the group (Dobao, 2014).

The first appearance of German in 9 visualizes another strategy: the suggestion of already known vocabulary. Here, Yoosuke is quickly suggesting the German compound **Kopfschmerzen** (headaches). Turning to the semantics of the compound candidates in this excerpt, we see that the first three items emerged from the immediate surroundings of the students as PET bottles, books and pencils could be seen in the classroom. The abundance of resources led the students to choose less opaque and high-frequency word combinations (Bushnell, 2009; Chua & Iyengar, 2008; Tin, 2011), resulting in low morphological creativity (Bauer, 2001). Note that this is explicitly acknowledged by the co-participants, Matsuo and Yoosuke, who reject Kotaro's last proposal point blank (10–13), even though it would have met the requirements of the task. In contrast, the following excerpt exemplifies more creative ideas that were carefully constructed prior to proposition and developed by other group members.

## EXCERPT 2

## C3 (Constraint Group 3)

- 
- 1 Ken            are wa **sanft sanfter schnee** (0.7) ee:to yawarakai yuki  
                  dakara nihon tte passa passa na yuki jan (1.0) passa  
                  passa na ^yuki tte iu nanka yaku de **sanfter schnee**  
                  [mitai]  
                  *What about this, **sanfter Schnee** {gentle snow}. Um, soft snow so like we have dry  
                  snow in Japan, right? Dry snow translates as something like **sanfter Schnee**  
                  {gentle snow}.*
- 2 Kana            [>>sanfte] tte dou iu ^imi<<  
                  *What does **sanfter** {gentle} mean?*
- 3 Ken            yawarakai toka ja nakatta kke  
                  *Wasn't it something like soft?*
- 4 Kana            yawarakai wa **schw°<ach>°=**  
                  *Soft is **schwach** {weak}.*
- 5 Akira            =**weich**=  
                  ***Weich** {soft}.*
- 6 Kana            =>**weich weich**<  
                  ***Weich** {soft}, **weich** {soft}.*
- 7 Ken            [**weich** ka soo ka|]  
                  ***Weich** {soft}? I see.*
- 8 Kana            [**weich**]  
                  ***Weich** {soft}.*
- 9 Akira            [**wei**]ch (0.7) **weiche wurst** toka dekimasu kedo hhua[hu  
                  heha heha] (.) h  
                  ***Weich** {soft}, but something like **weiche Wurst** {soft sausage} goes h huahu  
                  heha heha h.*
-



In 1 of Excerpt 2, Ken thought of a compound in German and its possible meaning before openly proposing it to his group members. Note that there is no attempt to take over his turn even after the pauses in his possibly complete turns. In classrooms, it is common for students to complement their idea proposals with justifications (Chiu & Khoo, 2003). Therefore, only once his explanations are satisfying enough does Kana produce an overlap and ask for specification about one of the German words in his compound. This opens up a collaborative process of interactional feedback centering around words in the TL (cf. Mackey, 2007).

Kana attempts to repair Ken's translation for the Japanese word *yawarakai* (soft) in 4, which then gets repaired again by Akira (5). In the following four turns (6–9), each participant repeats Akira's suggestion. Repetition functions as a form of confirmation towards the topic (Chiu, 2000). By vocalized or subvocalized repetition, the group members express the same level of topic cohesion and seem to grasp the uttered word, readying it for further processing, as in 9. Excerpt 2 also shows how the L1 can be beneficial for mediating cognition (e.g., Swain et al., 2009). Discussing semantic nuances between similar words in detail allows students to not only resolve any lexical difficulties by hypotheses testing or providing feedback (Swain & Lapkin, 2000) but also develop new concepts or associations with a given word (i.e., developing vocabulary depth, Nation, 2013). Previous studies suggest that elaborate discussions about lexicon are beneficial for L2 microgenesis (i.e., moment-to-moment learning resulting from interaction, see Bao, 2019; Storch, 2008; Swain et al., 2009).

So far, we have seen the focus on meaning when suggesting ideas. However, the following excerpts visualize one other strategy exclusively employed by the constraint group.

### EXCERPT 3

#### C1 (Constraint Group 1)

1 Hiro	j j k (.) k wa ippai aru ne (2.8) ya nanka (0.7) <b>käse</b> (2.8) chiizu ga <b>käse</b> <i>J, J, K, There's a lot with K. Hmm like <b>Käse</b> {cheese}. Cheese is <b>Käse</b> {cheese}.</i>
2 Daichi	k <b>kä:se</b> <i>K, <b>Käse</b> {cheese}.</i>
3 Hiro	<b>käse=</b> <i><b>Käse</b> {cheese}.</i>
4 Tetsuo	= <b>kinder</b> <i><b>Kinder</b> {children}.</i>
5 Hiro	<b>käseku:chen</b> [nande chiizu no] kodomo <i><b>Käsekuchen</b> {cheesecake}. Why cheese children?</i>
6 Tetsuo	[ <b>kinder</b> he huh] <i><b>Kinder</b> {children} he huh.</i>
7	(0.9)
8 Daichi	chiizu no kodomo (0.9) o nanika (1.2) aru mono tte iu [toshitara nandaroo] <i>If (we) say cheese children is something, what would it be?</i>
9 Hiro	[chii::zu o:]:: kakoo shita shokuhin h <i>Some product manufactured out of cheese.</i>

In excerpt 3, students of group C1 start by gathering words beginning with one specific letter of the alphabet in order to fulfill the task's alliteration condition. This idea-finding process was confined to the constraint condition and resulted in many unusual word combinations. Hiro comes up with **Käse** (cheese) which is immediately (sub)vocally rehearsed by his peers. In 4, Tetsuo adds **Kinder** (children) to Hiro's idea, resulting in the semantically opaque compound **Käsekinder** (cheese children). Even though Hiro produces the much more grounded **Käsekuchen** (cheesecake), he immediately shifts his attention to the novel compound with the overlap produced by Tetsuo in 6. Without directly answering Hiro's question, Daichi joins the discussion about possible meaning, and it is Hiro who then produces the first suggestion for an explanation proposal. **Käsekuchen** (cheesecake) has been completely ignored to this point. This episode illustrates how creativity and language play can make phonological or lexical aspects of language more salient and thus stimulate learners' reflection on form-meaning relationships (e.g., Bell, 2005; Broner & Tarone, 2001; Tocalli-Beller & Swain, 2007). There is also a strong relationship between perceived creativity (and interest) and opacity of the word (Bauer, 2001) which will be explored in more detail in the next section.

To sum up, while the number of ideas was higher for the nonconstraint group, most ideas were proposed in Japanese and led to unresolved LREs where participants failed to provide German translations. In contrast, the constraint group had fewer ideas in total, but such idea proposals usually happened in German and were followed by LREs where participants provided each other with feedback or metalinguistic explanations about the TL in their L1. The following section will elaborate on this point by investigating the effect of

the constraint condition on the creative process and product.

#### 4.2. Creativity and explanation proposals

Students discussed explanations for their invented compounds before or after coming up with Japanese translations. It comes as no surprise that discussions and explanation proposals surrounding the meaning of compounds intensified with increased degree of opacity. Table 4 compares the number of ideas, written compounds, and explanation proposals per group.

In total, 104 instances of explanation proposals were coded in the transcripts. Explanation proposals were defined as co-constructed explanation attempts other than a direct translation over at least two conversational turns. Only a few combinations of ideas by the nonconstraint groups led to explanation proposals. This is a result of the preference for the nonconstraint group to formulate ideas first in their L1 without having access to an appropriate translation into German. Such ideas were then quickly dismissed. Further, there was an overall incongruency between amount and quality of ideas for the nonconstraint group. Many of the nonconstraint groups' rapid idea-generating phases resulted in highly frequent but creatively unattractive compounds discouraged by the other group members (see students' response to *Kopfschmerzen* (headaches) in excerpt 1) or led to compounds that invited short, non-contested explanation proposals, as in excerpt 4 below.

##### EXCERPT 4

##### NC1 (Nonconstraint Group 1)

1	Shun	<b>kurstreffen</b> <i>Kurstreffen</i> {class meeting}.
2	Hanako	un <i>Yeah.</i>
3		(1.3)
4	Shun	un <i>Okay.</i>
5	Hanako	gakkyuukai (.) kurasu no shinboku o fukumeru kai <i>Class meeting, a gathering for deepening the friendship of a class.</i>
6	Ryo	h he [hehe] <i>H hehehe.</i>
7	Shun	[ii] to omoi [masu] <i>I think that's good!</i>
8	Hanako	[.h hehe] <i>.h hehe.</i>

In Excerpt 4, after deciding on *Kurstreffen* (class meeting) as the next compound, Shun and Hanako make sure that everyone in the group agrees with their idea before writing it down. The pause in 3 provides one last opportunity for the other members to object, before Hanako produces a direct translation, followed by an explanation in 5. Ryo's laughter (6) and Shun's acknowledgment (7) function as agreements to her suggestion. The compound in question is a moderately frequent German word and poses no semantic difficulties. However, research shows that deliberating over options results in more elaborate attention which makes the LRE more beneficial for vocabulary development (Kaivanpanah & Miri, 2017, p. 938). The lower degree of creativity in the product resulted in

**Table 4**

Ideas proposed per group and language (NC = nonconstraint, C = constraint).

Group	Total Ideas	Explanation Proposals	% Explanation Proposal per Idea
NC1	62	8	12.9%
NC2	90	9	10%
NC3	63	13	20.63%
NC totals	215	30	13.95%
C1	39	20	51.28%
C2	53	23	43.34%
C3	39	31	79.49%
C totals	131	74	56.49%

Note: Ideas were counted as unrepeatd words proposed for completion of the task. This means that explanation proposals usually targeted the combination of two ideas (words) in a compound.

fewer explanation proposals and moments of learners consciously reflecting on their language output—the latter being believed to be a key process in language learning (Swain & Lapkin, 2000). In contrast, the following excerpt shows how a more creative idea invites attention to meaning and form.

## EXCERPT 5

### C3 (Constraint Group 3)

- 1 Ken fantastische fühle (0.8) eto **geföhle** nano kana maa **föhlen**  
(.) a nanka yukai na koto dakara nanka yuumoa mitai na  
**fantastische fühl** demo **geföhle** ga meeshi da to  
**Fantastische fühle** {fantastic feel}, uhm or is it **Geföhle** {feeling}? Well **föhlen** {feel},  
ah something pleasant so something humorous like **fantastische fühl** {fantastic feel}  
but if **Geföhle** {feeling} is the noun.
- 2 Kana un **geföhl**  
Yeah **Geföhl** {feeling}.
- 3 Akira un na ki ga shimasu ne  
Yep. Seems like it.
- 4 (4.1)
- 5 Kana **großgeföhl**  
**Großgeföhl** {big feeling}.
- 6 Akira **groß**  
**Groß** {big}.
- 7 Kana de nanka de nanka emoi [toka kana sore]  
And then and then this is being emotional or something.
- 8 Akira [ookina kimochi] h heheh h  
A big feeling h hehe h.
- 9 Ken °**GROßGEFÜHL**° (.) yabai toka de mo ari kamo  
**Großgeföhl** {big feeling}. It could also be something like 'wow'.
- 10 Kana **großgeföhl** (.) heh hu ima kimochi ga takabutteiru fmitai  
na h  
**Großgeföhl** {big feeling}. Heh hu like feeling overwhelmed in the moment h.

Excerpt 5 shows the co-construction of the compound *Großgefühl* (big feeling) and the beginning of several explanation proposals. In 1, Ken is attempting to combine *feeling* with an adequate adjective but is unsure about the correct form of the noun which brings Kana (2) and Akira (3) to provide feedback. After a relatively long break (4), Kana reinitiates the idea-proposal process by adding *groß* (big) to Ken's idea resulting in a novel compound. Not only did Ken's talk about feelings spur Kana's association process, but it also led her to invent an elaborate meaning for her newly produced idea (7). In the course of the emerging discussion, several explanation proposals are then provided for the co-constructed compound. Note how participants repeatedly rehearse the German words to seemingly extract further meaning from them (9, 10).

This episode exemplifies how creativity under constraints and meaning production can function collaboratively (e.g., Ness & Glăveanu, 2019). Opacity in words is related to translatability and polysemy. Does a *big feeling* refer to being emotional or being overwhelmed with feelings? All explanations are plausible and learners discussing semantics stretch the associations they develop with

**Table 5**  
Examples of explanation proposals for selected compounds.

Group	Compound	Explanation proposal (translated and summarized)
NC1	<b>Fenstertuch</b> (window cloth)	1. A cloth for cleaning windows 2. The action of cleaning windows
C2	<b>Geldgitarre</b> (money guitar)	1. Like a tree growing money 2. The action of earning money with a guitar 3. An extremely expensive guitar
C2	<b>Schnellspiegel</b> (fast mirror)	1. A mirror showing the future (as in the popular TV show <i>Doraemon</i> ) 2. A mirror warping time 3. A mirror that runs away when looked upon
C3	<b>Opaoma</b> (grandpa-grandma)	1. Grandfather and grandmother 2. A general term for the elderly

each constituent (Neary-Sundquist, 2015). More explanation proposals meant more elaboration, opinions, conflict, and focus on the TL (cf. Kaivanpanah & Miri, 2017; Storch, 2008). We can see other products of explanation proposals that emerged during group work interaction for selected compounds in Table 5.

Students invented ad hoc metonymy (*window cloth*, *money guitar*), explored headedness (*grandpa-grandma*), and experimented with semantic extensions (*fast mirror*). This development of word-formation principles can aid in the understanding of category or hyponymy (e.g., Schipke & Kauschke, 2011). Further, as Pomerantz and Bell (2007) point out, creative word-creations (i.e., language play) are signs of learners expressing themselves as multicompetent language users. Using language for humorous purposes resulted in lots of interaction and laughter (e.g., excerpt 5)—which allowed learners to test their understanding of language without a threat to anyone's face (Van Dam, 2002).

To answer the second research question: The constraint condition altered the degree of creativity in the product (idea) and process (explanation proposals). With creativity being partially reflected in information richness (Joyce, 2009), the constraint condition made compounds sometimes appear nonsensical and pushed students to interpretation attempts of nonsalient features that in turn increased their investment in and enjoyment of the task—a feature often documented in research regarding language play (e.g., Tin, 2011; Tocalli-Beller & Swain, 2007). This led to more elaboration (cf. Choi & Iwashita, 2016; Storch, 2008) and deliberation (cf. Kaivanpanah & Miri, 2017) in the playful instances of explanation proposals surrounding the ideas (i.e., LREs), which could have been beneficial for language development (e.g., Bell, 2012a).

## 5. Conclusion and future research

The purpose of this investigation was to understand the effect of a formal constraint on the number of ideas generated, as well as the idea-finding process and creative product. While the nonconstraint group produced more ideas in total, the constraint condition changed the directionality of how ideas were chosen. Without constraints, students tended to rely on established compounds in their L1 and sought for a possible translation in private or collaboration. With an increase of possible words to select, established and frequent word combinations seemed to be preferred choices (Chua & Iyengar, 2008). Such compounds then often resulted in ideas that were morphologically productive (Bauer, 2001) but lacked creativeness (e.g., *headaches*). In contrast, the additional constraint condition required participants to draw from limited resources (Tin, 2012), often requiring them to work together in order to find enough words for the compounding process. This resulted in fewer but highly opaque ideas produced in the L2, which in turn led to more than one possible interpretation attempt (e.g., *big feeling*). Within the interpretation phase, learners applied their metalinguistic knowledge and co-constructed meaning by referring to certain semantic aspects of a word. This study, therefore, confirms previous research by suggesting a strong relationship between constraints, creativity, and the emergence of complex and infrequent language (e.g., Lida, 2011; Tin, 2011).

In the FL classroom, creative play with language is a rare opportunity. Spontaneous creative episodes and instructed language play within the classroom have been found to help students build up their linguistic understanding (e.g., Bell, 2012a; Bushnell, 2009; Lucas, 2005). However, Japanese students learning a second FL “regularly run the risk of being corrected or chastised for what is seen as their failure to conform to target language (TL) norms” (Pomerantz & Bell, 2007, p. 558; cf. Komiya Samimy & Kobayashi, 2004). Here, especially beginner levels could benefit from a place where they are allowed to freely engage in hypotheses testing and collaborative languaging about the TL in their L1 (e.g., Van Dam, 2002). For example, episodes such as the emerging discussion about the appropriate translation for *weak* and *soft* in excerpt 2 illustrate how talk in the L1 can bring students to pool their knowledge and target semantic nuances that might be difficult to discuss in the L2 (e.g., Antón & Dicamilla, 1999; Swain & Lapkin, 2013). Further, language play could be utilized to address linguistic features of the TL that are neglected in textbooks (Neary-Sundquist, 2005). For example, the “value in explicitly drawing learners’ attention to word parts” (Nation, 2013, p. 73) lies in noticing the standard and formulaic usage of words and parts, as well as attending to underlying concepts and associations (e.g., Cho & Kim, 2018).

This study also established that creativity is actively evaluated and enjoyed by learners. Participants did not decide on just any idea but tried their best to come up with interesting and novel compounds agreed upon by all members (e.g., Bushnell, 2009). One way to elicit such creativity and foster subsequent LREs is by imposing formal constraints on the task condition. Thus, teachers should be made aware of the interplay between task design, constraints, and creativity. One shortcoming is that some of the LREs surrounding word-formation processes were resolved incorrectly resulting in spelling mistakes or the wrong choice of infixes. A creative classroom activity should therefore always include the element of control by a teacher on the product (cf. Swain & Lapkin, 1998, p. 333). For example, a teacher could let students engage freely in the group task first but have them present their creations at a later stage in front of the class. This would make the task more goal-directed (e.g., Poupore, 2016) and allow the provision of corrections and feedback.

This study is not without limitations. While there is evidence for the benefits of language play (e.g., Bell, 2012a; Heidari-Shahreza, 2018) and engagement in LREs (e.g., Bao, 2019; Brooks et al., 2010; Swain et al., 2009) on the learning of syntax and lexicon, this study didn't explicitly control for vocabulary retention (cf. Lindstromberg & Boers, 2008). This makes it difficult to say whether students did benefit from the extended episodes of languaging about form and meaning of word-parts. Future research should therefore address how quality and quantity of LREs surrounding word-creations affect retention by administering custom-made post-tests targeting discussed items (e.g., Bell, 2012a). Further, as this study applies a novel approach at quantifying creativity, a stronger focus on inter-rater reliability with more trained raters would have been preferred. Finally, it is noteworthy that through the finished product

alone (the number of written compounds on the worksheet), we cannot draw any conclusions about how students engage in tasks. If anything, this study thus works as a reminder about how important the conversation analytical microanalysis of language use is to properly understand the effects of changes in task design.

### Author statement

Dennis Lindenberg: Conceptualization, Methodology, Validation, Investigation, Writing-, Reviewing and Editing, Visualization, Supervision, Project administration.

### Declaration of competing interest

The author declares that this manuscript is original, has not been published before, and is not currently being considered for publication elsewhere. The author has read and abided by the statement of ethical standards of manuscripts submissions. In addition, a certificate of approval for research with human subjects issued by Waseda university can be provided. There are no conflicts of interest to disclose.

### Transcription Conventions

<i>hh</i>	audible aspiration (the more h, the longer)
<i>wor(h)d</i>	aspiration that occurs inside the boundaries of a word
<i>.hh</i>	hearable inhalation (the more h, the longer)
[	beginning of overlapped speech
]	end of overlapped speech
<i>hh</i>	audible aspiration (the more h, the longer)
=	latching (no pause after the completion of one utterance and the beginning of another)
(1.2)	length of pause in seconds and tenths of seconds
(.)	unmeasured mini pause
<i>word::</i>	prolonging or stretching of the preceding sound (the more colons, the longer)
<i>&gt;word&lt;</i>	talk is compressed or rushed
<i>&lt;word&gt;</i>	talk is stretched or drawn out
<i>£word£</i>	talk between laughing and speaking (smile voice)
<i>°word°</i>	talk is markedly softer than surrounding talk
	fall in pitch
^	rise in pitch

The German language is put in bold and translated in curly brackets immediately following the German word.

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