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Recurrent Token in Interaction: Grammar Emerges from Dialogic Resonance

Yoshihito IZAWA

1. Introduction

Natural conversation is a complex task; it includes comprehension, inference, planning, production, turn-taking, interpersonal adjustment and so forth. However, we humans can communicate with others without special efforts. The question here is thus described: What enables us to communicate with others easily? On this point, the perspective of Clark & Krych (2004) is thought-provoking; because it proposes that natural conversation is constructed on the basis of participants' mutual feedbacks. To be sure, human beings cannot not communicate with one another. In the course of potentially communicative activity, even if one does not intend to communicate, every aspect of behavior inevitably conveys a great deal of information, and the receiver inevitably interprets it, correctly or not. Whether we are talking, playing or even walking together, we are generating and transmitting a number of messages. That is to say, there is no such thing as nonbehavior; in an interpersonal situation, all activities can be construed as communicative signals (e.g., Watzlawick, P., Beavin, J. & Jackson, D. 1967; Bateson, G. 1972). Since it is impossible to avoid all communication, it is fitting to describe the human being as a social and communication-oriented animal.¹

We humans acquire the language in such an interactive field. Intuitively speaking, our mutual communication is realized mainly through language; however, linguistic performance clearly entails not only language but physical and

social contexts. Moreover, there is intense debate surrounding the exact domain of communication, including the synchronic and diachronic boundaries. As an inevitable consequence, the various approaches to human communication differ in numerous ways and degrees, depending on the adopted standpoint. Under the present set of circumstances, if we divide the types of communication broadly into two categories, namely linguistic and extralinguistic, their characteristics can be thus summarized:

	Nature	Productivity	Displacement
Linguistic	Compositional : System of Symbols	Infinite	Possible
Extralinguistic	Associative: Set of Symbols	Theoretically Limited, Unrealizable in Practice	Theoretically Limited, Useless in Practice

Fig. 1 Essential Differences between Linguistic and Extralinguistic Communication
(Bara 2009: 37, with a minor modification by author)

According to Figure 1, the nature of language is the conventional system of pattern. For examples, the pattern of phoneme leads to morpheme, the pattern of morpheme leads to word, and the pattern of word leads to phrase or sentence. Traditionally, these units have been analyzed in the framework of theoretical linguistics; however, when it comes to our language acquisition through ordinary conversation, the unit called discourse, namely the pattern of sentence, is also of great significance. This perspective is proposed by several studies, such as *current discourse space* of Langacker (2001) and *global construction* of Yamashita (2008). The term discourse is proposed by Harris (1952), and there are two standpoints on the discourse. Two main perspectives can be described as follows:

- i Formal : language above the sentence or above the clause (Stubbs 1983)
- ii Functional: units of linguistic production (whether spoken or written)

which are inherently contextualized (Schiffrin 1994)

This paper adopts the formal one, focusing on the framework of theoretical linguistics. In the field of theoretical linguistics, the main target of analysis has been word or sentence. It is of great importance to study them; however, the discourse-level study is also important. It is obvious that the actual speech event is composed of discourse.

Discourse constructs what we call natural conversation. It is often fragmentary, and language is acquired through such a fragmentary input. In dialogue, common ground is updated continuously. Speaking and listening are incremental processes, and many of the increments are determined jointly. However, what is called grammar is mainly based on the written aspect. The written language is a bit arranged one, as Bybee (2006) points out. Therefore, it is important to overcome what Linell (1982) calls written language bias in linguistics. The dynamic aspect of spoken language is also pointed out in the field of emergence grammar of Hopper (1998):

in actual practice, language is much less grammatical, i.e., less general, than theoretical syntacticians would suggest. (Hopper 1998; 159)

The features of spoken-written language can be explained in the following way:

	Spoken	Written
Time	Instant	Displaced
Deixis	We, Here and Now	Whoever, Wherever and Whenever
Process Sharing	Share	Separate
Acquisition	Natural	Learning
Function	Interactive	Thought

Fig. 2 Features of Spoken-written Language

There are many more features, and as a natural consequence, the correlation between spoken and written is assumed. What is suggestive here is the possibility of spoken aspect of grammar. According to Du Bois (1985), grammar is the reflection of what participants frequently do in their interaction. As Chafe (1994) points out, each mode of language use produces a kind of language that codes best what the consumers of that kind of language find most adaptive. These standpoints imply that grammar is connected with what we frequently do in interactive field. Traditional grammar describes sentences, whereas discourse goes beyond sentences. The real description is necessary.

Considering a complex background, this thesis places discourse in the center of the discussion to shed some light on the emergence of grammar, on the assumption that the discourse-level pattern is significant in the formation of grammar. When it comes to discourse, however, it is no established way to study. In this respect, this study adopts the viewpoint of *dialogic syntax* proposed by Du Bois (2001), which enables us to analyze the discourse-level linguistic phenomenon. In particular, this study focuses on juxtaposed similar composition. As represented by ‘why that now’ slogan of Schegloff (2007), the position and composition of sentence are definitely important in interaction, and juxtaposed similar utterances by different speakers are definitely not accidental. It is frequent that several participants utter the similar pattern in quite short period. There must be a certain type of motivation. This paper attempts to introduce the methodology of analyzing discourse by using dialogic syntax, and identify the recurrent pattern of English token. Through this paper, what emerges is a new map of a still underexplored terrain: the interactive aspect of grammar.

2. Grammar, Discourse and Parallelism

There are various standpoints on the term grammar. In this regard, a framework labeled as *construction grammar* (CxG) is worthwhile to consider. Fillmore (1988), Goldberg (1995; 2006) and their various collaborators elaborate on this

theoretical construct. In concrete terms, it is claimed that all the language units such as words, phrases and sentences are regarded as gestalt structures, each of which is associated with a specific meaning.² This is strongly motivated by the fact that certain compositional structures, such as idiomatic expressions like ‘kick the bucket’ and ‘cat person’, convey the specific meaning that cannot be predicted from its constituents. As the fundamental assertions, it is recognized that certain constructions communicate conventional meanings which are definitely different from the lexical meanings conveyed by their parts. According to Goldberg (2006), the theoretical formulation of construction is thus described:

ALL LEVELS OF GRAMMATICAL ANALYSIS INVOLVE CONSTRUCTIONS: LEARNED PAIRINGS OF FORM WITH SEMANTIC OR DISCOURSE FUNCTION, including morphemes or words, idioms, partially lexically filled and fully general phrasal patterns.

Morpheme	pre-, -ing
Word	avocado, anaconda, and
Complex Word	daredevil, shoo-in
Complex Word (partially filled)	[N-s] (for regular plurals)
Idiom (filled)	going great guns, give the Devil his due
Idiom (partially filled)	jog <someone's> memory, send <someone> to the cleaners
Covariational Conditional	The Xer the Yer
Ditransitive (double object)	Subj V Obj1 Obj2
Passive	Subj aux V Ppp (PPby)

Fig. 3 Examples of Constructions (Goldberg 2006: 5)

As thus described, various linguistic units can be expressed as constructions as long as they are associated with specific meanings.³ What is of great significance here is that the conventional system of these units is so-called grammar.

In the field of interaction, similar pattern tends to be used many times

(e.g., Tannen 1989; Du Bois 2001). Similar pattern in discourse has traditionally been discussed in the framework of repetition, and there are numerous perspectives, such as poetic function of Jakobson (1960; 1970), regulative function of Beun (1985), cohesion and coherence of Halliday & Hasan (1976; 1985), and the most famous framework called involvement of Tannen (1989). In the framework of Tannen (1989), it is emphasized that participants share various things and it leads to involvement, which connects the participants. However, if the slogan ‘grammars code best what speakers do most’ of Du Bois (1985) is the case, the repeated pattern can be connected with emergence of constructions; because it reflects the participants’ type of abstraction of language structure. The framework labeled *structural priming* (Bock 1986) is surely one of such studies. In the experiment, subjects are exposed to a picture, for which both affirmative and passive can be used. For examples, affirmative is ‘Lightning is striking the church’, and passive is ‘The church is struck by lightning’. Before the utterance production, subjects are conditioned listening to either affirmative or passive. As the result, most subjects reuse the same syntactic pattern which is previously shown. The same holds true for ditransitive or prepositional phrase. To be more succinct, priming facilitates, reproduction enacts, and similar utterances arise as a consequence of the reproductive action. The root of priming and reproduction is the same, while the reuse of token is a concrete process of embodying primed slots. It is a very complex topic; however, similar utterances can be regarded as the product of most embodied priming. In this respect, what matters to grammar theory is the invariable token, namely the frame of recurrent utterances.

It is clear that our utterances reflect what can be retrieved from both distant and immediate memory. This study adopts the dialogic syntax as methodology, on the assumption that the discourse parallelism leads to grammar, especially the spoken aspect. It enables us to observe recurrent structure and token, which is equivalent to the prototype of grammar.

3. Dialogic Syntax

In the emergent grammar of Hopper (1998), it is held that utterances are closely similar to previous utterances, and that anything that is said has been said in something like that form before. The background is definitely usage-based. In discussing this issue, dialogic syntax of Du Bois (2001) is suggestive and thought-provoking. This framework is based on mappings between elements, that is, between juxtaposed utterances. Juxtaposed utterances are the canonical unit of dialogic syntax. Utterance exists in relation to previous ones, including the field of interaction. And the main target is activated juxtaposed utterance, which is generated in natural conversation. For a long time, this has been labeled as repetition; according to Du Bois (2001), this sort of similarity can be defined as *resonance*. Resonance is the activation of affinities across utterances, and it can be traced back to words, syntactic structures, illocutionary forces, and other linguistic resources activated by the first speaker. Compared with repetition, resonance is more comprehensive in the sense that it can deal with various levels of parallelism between utterances.

In the realm of conversation analysis, the recurrent course of verbal behavior is categorized into numerous patterns. One such recurrent construction is what we call the *adjacency pair*, first elaborated by Schegloff & Sacks (1973). For long periods of time, it has been taken for granted that the sequential organization is formulated in the way that the first pair part (FPP) conditions the following second pair part (SPP). The term adjacency pair, for example, refers to the analyzable unit composed of two utterances: question and answer, offer and acceptance, greeting and greeting, complaint and apology and so forth. In these brief exchanges, it is evident that the FPP requires the SPP for interactional completion.⁴ In contrast, for example, when a question is produced and no response is retrieved, it is probable that the participants notice something missing; this is evidence of adjacency-pair construction. To be more specific, adjacency-

pair organization is said to display the following features:

1. At least two utterances
2. Adjacent positioning of component utterances
3. Each utterance produced by a different speaker
4. Relative ordering of parts (i.e. the FPP precedes the SPP)
5. Discriminative relations (i.e. the pair type of which a FPP is a member that determines the possible selection of SPP)

(Sacks & Schegloff 1973: 295-6)

To summarize, in the framework of conversation analysis, it has traditionally been accepted that the preceding utterance triggers the occurrence of a certain type of following structure, and human interaction is an accumulation of such pairings. What is called the adjacency pair is the frequent structure and the prototype of such sequential organization. The concept of resonance can be defined in a similar way:

1. At least two utterances
2. Adjacent positioning of component utterances
3. Each utterance produced by a different speaker
4. Similar patterning of parts

As mentioned above, resonance is a kind of sequential structure, and dialogic syntax is based on the description, namely *diagraph*. This is the methodology in the framework of dialogic syntax. Dialogic syntax focuses on discourse and puts a strong emphasis on parallelism between utterances, and the mapping between elements can be described in the following way:

JOANNE; It 's kind of like you, Ken.
 KEN; That 's not at all like me, Joanne. (Du Bois 2001: 4)

In the light of this diagraph, dialogic syntax enables us to analyze the similar utterances. When it comes to juxtaposed similar patterns, there are two subcategories of resonance: *frame resonance* and *focal resonance*. This dichotomy is based on the syntagmatic-paradigmatic relation, and the former is strongly related to the emergence of grammar.

4. Analysis

Let us turn to the actual examples of resonance in dialogue. This paper adopts the corpus-based approach. The computerized corpora are the rapidly growing analytical tools in the contemporary linguistics. It is easy to access the numerous databases, and they are often constructed across languages. Based on this fact, it is not too much to say that a number of corpora are the products of the age of information. As a matter of course, this technical innovation has influenced the multitudinous linguistic studies, including discourse-level ones. Therefore, the annotated corpora have the great possibility of facilitating the linguistic discourse analysis, which is beyond the sentence level. There is thus a reasonable ground in adopting the corpus-based analysis. Based on this background, this study focuses on the resonance in the actual speech event. The analytical data are extracted from the Santa Barbara Corpus of Spoken American English (SBCSAE), in which lines represent the intonation units (IU)⁵. The following exchange is one example of resonance:

1. *MICH:(.) [And it'll be small]: .
2. *JIM: [You know and it] +/-
3. *JIM: (.) It'll be f- so small
4. that we'll have enormous amount- +/-

(SBC017. 233-236)

In this juxtaposed structures, there are syntagmatic and paradigmatic similarities between utterance of MICH and that of JIM. To be more concrete, the following speaker reuses the preceding utterances, including both words and syntactic structures, and produces new information in ‘that’ clause. This leads to the assumption that resonances tend to occur in the beginning and can be regarded as a device which facilitates the cognitive processing in interactions.

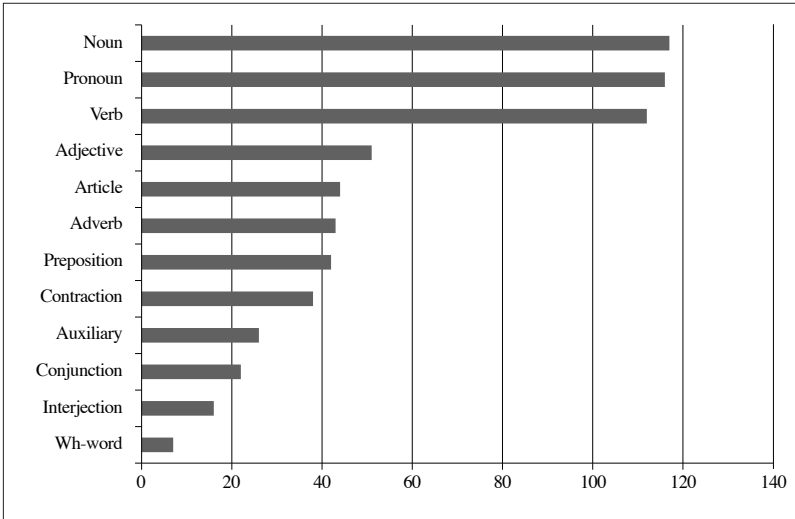
In this analysis, resonances are analyzed from the viewpoint of *intonation unit* (IU). Intonation unit is a segment of focus of attention, and it reflects the unit of thought (Chafe 1994). The basic IU consists of 4 words, which is equal to maximum of activation. There are three subcategories; that is to say, substantive IU represents the content matching the level of phrase or clause, fragmentary IU is a grammatically incomplete unit, and regulatory IU is used for arranging the relationship and timing. The last one is a sort of *discourse marker*. The regulatory IU can be merged into substantive IU, forming one IU.

As mentioned before, the canonical unit of dialogic syntax is the juxtaposed utterances by different speakers. On this point, the distance or degree of resonance is surely the future task of dialogic syntax; anyway, this study focuses on the canonical unit with the view to making data clear-cut. The comparison between preceding utterance (U1) and the following utterance (U2) can be explained in the following way:

Relation between U1 and U2	Operation
Similar but Overlapping: Co-construction	Exclude
Similar but Monologue: Self-resonance	
Similar but Repair: Recycled Turn Beginning (Schegloff 1997)	

Tentative criteria need to be elaborated. As the result, the number of extracted resonance amounts to 189, in which there are 23 holophrase resonances. The re-

current pattern and token of resonated portions can be described in the following figures:



the	32	Art.	of	6	Prep.	get	5	Verb
I (substitute)	19	Pron.	and	6	Conj.	one	5	Pron.
it	13	Pron.	you	6	Pron.	got	5	Verb
a	11	Art.	that	5	Conj.	one	5	Pron.
know	10	Verb	right	5	Interj.	so	4	Adv.
it's	9	Contr.	to	5	Prep.	okay	4	Interj.
was	9	Verb	on	5	Prep.	don't	4	Aux.
you (substitute)	7	Pron.	that's	5	Contr.	is	4	Verb.
he	7	Pron.	she	5	Pron.	him	4	Pron.
I	7	Pron.	be	5	Verb	there	4	Adv.
in	7	Prep.	got	5	Verb	had	4	Verb
that	6	Pron.	just	5	Adv.		⋮	

Fig. 4 Recurrent Pattern and Token

In summary, the following speaker tends to reuse the preceding pronoun, article and possibly be-verb as the frame, filling the slots by introducing various nouns and other verbs. The resonated pattern and token are frequently used at the beginning of the following utterances. At the same time, it is widely observed that some categories such as adverb and conjunction are replaced or deleted. This arranging pattern, at least at present, shows the possible prototype of grammar; because it reflects a certain type of linguistic structure activated easily.

5. The Motivation of Resonance

Here introduces several thought-provoking viewpoints which offer the implications for understanding the motivation of resonance. In dialogue, participants are required to manage the information, which is inseparable from their cognition. It is not probable that speakers design their utterances without the active participation of addressees, an assumption common to unilateral models. In the light of economic interaction of Clark (1996), the pervasive notion of old and new is thought-provoking. Almost all entities, including us human beings, inevitably get older, and therefore the relativized notion of newness is generated. As a matter of course, the same holds true for information. The concept that some of the information is new while other information is given is intuitively plausible. According to Prince (1981), the general notion of given versus new information can be described in the following way:

Givenness_p: The speaker assumes that the hearer CAN PREDICT OR COULD HAVE PREDICTED that a PARTICULAR LINGUISTIC ITEM will or would occur in a particular position WITHIN A SENTENCE.

(Prince 1981: 226)

Givenness: The speaker assumes that the hearer has or could appropriately have some particular thing/entity/... in his/her CONSCIOUSNESS

at the time of hearing the utterance.

(Prince 1981: 228)

The small letters p and s , which are added to the givenness, mean the informational predictability and saliency. Based on this generalization, what is called newness can be regarded as the state of 'not given'.⁶

When considering the relation between language and informational state, linguistic units such as clause or sentence often include *theme* and *rheme*, and they obviously bring about the graded saliency. Theme is the part used for maintaining coherence of sentences, and rheme is the part used for adding or repairing the information. The same perspective has been proposed by Mathesius (1975), Traat (2010) and so forth. The shared viewpoint is choosing the information structure is not random; rather, they are arranged on the basis of importance. The general formulation is the *principle of information flow*: the elements without stress or morphological saliency are placed on the basis of its own significance, namely from less important to more important. On this point, it is possible to assume that such linguistic phenomenon reflects the given-new dichotomy of information. However, it is slightly doubtful whether or not the dichotomic discussion is plausible. As a matter of course, there are different perspectives which are not based on the given-new distinction.

In this regard, what is especially thought-provoking is the framework of informational *accessibility*. This concept concerns some piece of knowledge stored in memory, and refers to how easy it is to make it available to an ongoing process, in terms of speed or cognitive effort. For example, Ariel (1990) proposes that the types of reference expressions in discourse can be predicted according to the degree of accessibility they mark, such as pronouns through higher accessibility, or contrastively full names for lower accessible objects. There is an intuitive plausibility in the notion that some of the information is easier to remember, retrieve and foreground. As a consequence, there emerge a number of

theories which deal with the accessibility of mental assumptions, and one such theory was proposed by Chafe (1994). Following the theoretical framework, it is claimed that human mental representation can fall loosely into three subcategories: *active*, *semi-active* and *inactive state*.⁷ Referring to the importance of extralinguistic aspects such as intonation unit, Chafe discusses the novelty of linguistic information as follows:

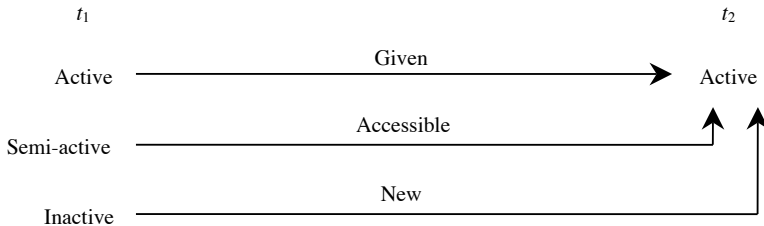


Fig. 5 Activation States, Activation Costs, and Time (Chafe 1994: 73)

Based on this theory, at a certain time t_1 , a particular idea can be active, semi-active or inactive, and at later t_2 it is activated. In this diagram, if a notion is already active at t_1 , then it is defined as given information at t_2 . Similarly, a semi-active notion is defined as accessible and an inactive notion is defined as new. This is the fundamental statement by Chafe (1994); in this regard, there has been no established theory of this notion.

To summarize, Chafe (1994) elaborates on the distinction between given and new information, and introduces the concept of informational gradience. It is significant to note here the classification of informational state, and this paper takes it for granted that there are three subcategories of informational accessibility, with a view to discussing one of the motivations of resonance. In particular, the process of transfer from an inactive to an active state is assumed to be of great importance; because the activation makes it easier for resonance to occur in the section of theme. That is, the similar pattern and token are the triggers

of decreasing the cognitive effort; therefore, they can be used at the beginning of utterances. From the viewpoint of information structure and accessibility, resonance reflects the constraints of utterance production, influenced by active-inactive state. Language can be described as a medium of directing another participant's attention through a series of conceptualization. However, if it is too difficult, interaction is difficult to conduct. The concrete priming, namely resonance, is chosen because the shared structure can be regarded as an effective common ground and activated easily. In addition, the economic efficiency is also achieved as the contrastive pairs, which Tannen (1989) also suggests. Grammar definitely reflects this kind of distributed cognition system; that is, utterances are designed on the basis of cognitive and interactive requirements. The same perspective has been suggested by Ariel (2008) and other studies.

6. Conclusion

This study focuses on resonance and aims to examine the correlation between grammar and interaction. Based on the discussion of previous chapters, it is clear that the theoretical framework of the repetition is definitely plausible; however, similar utterances are also the key to revealing the grammar emergence through our ordinary conversation. As overviewed in this paper, several patterns often emerge in the process of interaction, and such a recurrent property can form the prototypical grammar. At the same time, the syntactic similarities between the preceding sentence and the following one can function as cognitive facilitator, which enables participants to interact with each other effectively. To be concrete, there is a possible relation between resonance and information structure, and this perspective is suggestive in discussing discourse and grammar. In this respect, attention to the prosodic aspects gets us closer to the way participants abstract the language structure in their interaction. Following these perspectives, it is concluded that human grammar is a best mix of cognition and interaction. Further investigations and analyses are indispensable, contributing toward a

goal of strengthening the validity of the theoretical framework of discourse-level linguistics.

Notes

- 1 Indeed, a large number of studies (e.g., Tomasello, M. 2009) now report that humans have an innate propensity to communicate with other individuals, which normally becomes noticeable in the first year of life. When it comes to terminology, the term *communication* is used for the activities conducted based on preceding intentionality, and *interaction* is used for the activities conducted based not only on preceding intentionality but on information extraction. In that sense, the latter is more comprehensive.
- 2 There are numerous sub-branches in the area of construction grammar. For instance, the *radical construction grammar* of Croft (2002) deals with the syntactic aspect from the viewpoint of typology.
- 3 Some counterarguments are anticipated, mainly because the psychological reality of constructional meaning is slightly doubtful at first glance. However, the following sentence clearly demonstrates that there are constructional meanings. This construction is generally called *way-construction*, which has been studied and discussed for a long period:

Frank dug his way out of the prison.

[SBJ_i [V [POSS_i way] OBL]] (Goldberg 1995: 199)

This sentence entails that Frank moved through a created path out of the prison, which is actually never inferred via lexical meaning. At the same time, the sentence's construction is also based on our knowledge; as a consequence, it definitely forms a radial category as well as the word meaning. As an extended construction, consider that the sentence, 'Frank found his way to New York', means that Frank managed to travel to New York. Judging from the way-construction, the meaning of 'travel' or 'move' is not retrieved from the sentence's individual parts; therefore, it makes sense to assume that the construction itself, as a whole unit, holds a specific meaning. This is widely accepted as the evidence about the psychological reality of constructions.

- 4 This structure can be analyzed from the viewpoint of affordance; that is to say, the question affords the possibility of the receiver's answer. To be sure, it is normally unacceptable to make an answer without a question. What is interesting is the following case: the response to others' mere utterance. This discussion has been not elaborated yet, but a possible interaction is as follows:

A: Hot...humid...

B: ...I wish it were winter.

In this possible interaction, speaker A does not pose a question; therefore, it is not necessary for speaker B to answer. However, speaker B recognizes the other as a human, namely a communicative agent, and surmises an implied responsibility to answer. In this sense, every manmade utterance can be regarded as the product of communicative intention, and humans are sensitive to such intentions. The point is that the pressure to respond is never – or at least, rarely – generated from other kinds of interaction, especially nonhuman interactions. I would like to define this as human affordance, related to the idea of *social pressure* presented by Tomasello (2009). The relation to resonance is under consideration.

- 5 This is a formal collection of spoken American English stored on computer, whose total number is summed up to about 250 thousand entries. This corpus includes the 60 balanced-sampled English dialogues in the United States, with a view to making a comprehensive database on the spoken American English. Accordingly, it can be used as a core database in the research of English conversation, or as a resource by interested scholars or students who would like to gain information on linguistic expressions in interaction.
- 6 In fact, the informational structure is not so clear as follows:

My father bought a car. He has just found that the radio is broken.

The definite article is used for 'radio', but this is the word appears first. It can be identified easily; hence, the theme-rheme dichotomy is difficult to apply, at least on the surface structure.

- 7 As a matter of course, there is no final and conclusive boundary between the three subcategories. They are gradient continuum and a gray zone is probable.

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