

**SCCS**  
**TECHNICAL REPORT**

No. 2000-12-02

ISSN 1345-2320

**Studies in Language Sciences 1**

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**The Japanese Society for Language Sciences**

**August 4, 2000**



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## Commentary: New perspectives in language acquisition

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This symposium had as its explicit goal the bringing together of scholars from linguistics and psychology who could represent different perspectives on the nature of language. In her analysis of the Japanese “*su*” constructions, Mari Takahashi does an excellent job of representing the careful analytic methods of generative grammar. Singenori Tanaka, in his sensitive analysis of the action verb *waru* succeeds in carrying a bright torch for the insightful and well-grounded methods of cognitive linguistics. Harumi Kobayashi, in her well-designed studies of the role of affordances in object word learning, shows how the controlled techniques of the experimental psychologist can be used to illuminate basic issues in language learning. Each of these papers provides a testimony to the extremely high level of scholarship in the language sciences in Japan today. Thus, this symposium has succeeded not only in its goal of bringing together scholars from diverse perspectives, but also of showcasing some of the best work in Japanese language studies. In my comments, I hope to show how relevant this work is to some of the major themes challenging language researchers in the new millennium.

Let me begin by commenting on the fascinating linguistic analysis provided by Mari Takahashi. Although I do not speak Japanese and know only a very little bit about its formal grammar, I was able to appreciate Dr. Takahashi’s clearly presented arguments and could understand the way in which her analysis contributes to our understanding of Japanese grammar. Her claim is that the “adverb + *su*” (AS) construction has more in common with the “VN-nominal + *su*” (VNNomS) construction than it does with the “VN + *su*” (VNS) construction. To support this claim, she needs to show that the status of *su* in the AS construction is markedly different from its status in the VNS construction. She demonstrates this by presenting three supporting observations. The first observation is that case-marking patterns indicate that the VN of the VNS construction is not the head of an NP. It would seem to me that this observation argues for a similarity between the VN of the VNS construction and the adverb of the AS construction. Moreover, since her argument is not about the status of the adverb, but the status of *su*, it is not clear that this first observation is relevant to the overall claim. Takahashi’s second observation is that *su* movement in the VNS construction indicates that the VN must head its VP. Unfortunately, for those who do not speak Japanese, it was not clear whether the *su* in the AS construction might pattern in a similar or different way. Takahashi’s third observation is that the *su* of the VNS construction can be viewed as a phonological adjustment of the type found when a focus marker intervenes between the regular verb and the verbal affix in a regular-verb sentence. This “epenthetic” analysis of *su* in the VNS construction seems reasonable. However, one wonders again whether the *su* of the AS construction might also be viewed in a similar way.

Takahashi then turns to an examination of the VNNomS construction. Right from the beginning, it was intuitively clear to this English speaker that Takahashi’s analysis of this construction must be correct. The reason for this intuitive feeling stems from the fact that I found it nearly impossible to form English translations of the various VNS constructions in (10) - (18). However, when I started to read the glosses of VNNomS sentences such as (19), it was easy to rephrase them as, “The police did an investigation of the incident” or “The police did a quick investigation of the incident.” Just as in Japanese, these English rephrasings are sensitive to the Agentive role. In English, it also makes sense to say, “Taro did a recording of the shock wave.” But it is strange to say, “The seismometer did a recording of the shock wave.” Takahashi argues that the *su* in the VNNomS construction is a generic activity verb that can bind to its VN object in a way that is not possible for the VN construction. Of course, there is the overt surface case marker *-o* in the VNNomS construction that provides explicit instructions to the listener to treat this construction as a VP with

*su* as the generic main verb. Moreover, this surface cue forces *su* to assume a semantic status that allows it to assign case.

In the end, I was persuaded of the correctness of Takahashi's basic claim. The *su* of the AS construction does seem closer to the *su* of the VNNomS construction than to that of the VNS construction. This analysis opens up many further interesting questions. Historically, one would love to know which of these three constructions was oldest. The historical relation between the VNS and the VNNomS constructions would be particularly interesting to trace. The analysis also makes interesting predictions for language acquisition. If I were a learner, I would be very cautious in treating any of these three constructions as markedly similar. When children learn these various constructions, one would hope that they would do so in an extremely lexically-based and piecemeal fashion, as predicted by Brooks and Tomasello (Brooks & Tomasello, 1999), Goldberg (1999) or MacWhinney (1982). The interesting examples of errors from the Noji (1976; 1977) corpus suggest that not all children follow the sage conservative advice of psycholinguists.

In the second paper in this symposium, Shigenori Tanaka advances an extremely bold hypothesis regarding the structure of word meaning. Following up on an suggestion from George Miller (1978), he suggests that even a highly polysemous word such as Japanese *waru* "break" has a core meaning that characterizes and grounds all of its uses. I will refer to Tanaka's claim as the monosemic analysis. At the outset, Tanaka is careful to construct a polysemic analysis of *waru* in terms of George Lakoff's (1987) influential ideas about relational networks and radial categories. Lakoff might well take exception to aspects of Tanaka's analysis. In particular, he might prefer a representation in which a core meaning of *waru* forms the basis for a series of radial categories. However, in the end, Lakoff accepts a polysemic analysis that is distinct from Miller's and Tanaka's monosemic analysis.

In order to support his monosemic analysis for action verbs like *waru*, Tanaka attempts to characterize verbs as fundamentally different from nouns. The argument is that verbs are inherently non-referential and not organized into semantic hierarchies. Although Tanaka discusses some exceptions to both of these claims, they do seem to capture two of the core differences between nouns and verbs. Having established these basic distinctions, Tanaka then moves on to the core of his monosemic analysis. He argues that action verbs are grounded on action schema and their resultant perceptual consequences. For *waru*, the action involves the exertion of force across an object. The exact nature of the impact is not important, since it could involve twisting, chiseling, hammering or any other strong exertion of force. What is important is the way in which the object divides as a result of the force or impact. As long as the object separates into pieces or shows a major cleavage, we can say that *breaking* has occurred.

Having illustrated his analysis with *waru*, Tanaka then moves on to make some general points about the nature of language as sense-making. He examines the ways in which words come together to yield constructions regarding actual states of affairs. The core knowledge underlying each lexical item is relatively stable. However, the process of constructing a meaning during language use transforms these core, stable meanings into dynamic extensional processes.

I am highly sympathetic with Tanaka's agenda. As the Berkeley NTS Group (Bailey, Feldman, Narayanan, & Lakoff, 1997; Narayanan, 1997) has shown, action verbs may provide us with basic keys to the understanding of the acquisition of meaning and grammar. However, I would like to encourage Tanaka to consider a wider range of action verbs. Verbs like *break* are directed quite clearly at the shape of the outcome on the affected object. In the case of *break*, English-speaking children often use the adjectival or participial form *broken* before they use the transitive verb. This

is because these verbs focus on the outcome of an action, not the activity. In contrast, verbs like *push*, *stumble*, or *jump* have core meanings that can be characterized more directly through action. These verbs force the child to project an egocentric perspective onto the activities of another, providing a springboard for later learning about mental states. Both types of verbs are important to the child and both involve core meanings which are extended through a process of sense-making, just as Tanaka proposes.

In the third paper in the symposium, Harumi Kobayashi provides us with a still closer view of the child's learning of new meanings. Like Tanaka, she is impressed with the extent to which the child's learning of meanings can be guided by adult's demonstrations of actions on everyday objects. By acting upon these objects in specific ways, adults demonstrate to children how the weighted affordances provided by objects can influence the way in which we assign them meaning. Kobayashi begins her analysis with an excellent review of the literature on constraint-based processes in word learning. In the late 1980s, the discussion of constraints on lexical learning was oriented toward innate principles, much in tune with the generative linguistics of the period. By the mid 1990s, the discussion had broadened considerably, including a wide array of soft constraints, socially guided biases, perceptual cues, grammatical constructions, and inferential strategies that worked together in a cooperative and competitive way to guide the emergence of word meaning (MacWhinney, 1998).

Despite the fact that researchers are now examining a wide range of influences on lexical learning, there has been one important set of inputs to learning that have been largely ignored. These are the influences that can be traced, generally speaking, to the function and use the child assigns to an object. In the 1970s, there was a debate between Katherine Nelson (1973) and Eve Clark (1972) regarding the relative importance of perceptual vs. functional cues in supporting lexical learning. With a few exceptions (Gentner, 1978), experiments tended to consistently support a stronger role for perceptual cues than functional cues. However, it seems reasonable to suppose that these findings may simply reflect the way in which children are tested in experimental settings with unknown and often useless objects. When children are given more time to familiarize themselves with objects (Kemler-Nelson, personal communication) or when functions are made more clearly central and available, then these findings start to change. Following up on the type of analysis offered in the papers by Tanaka and MacWhinney in this volume, one would expect that the deeper, longer lasting core encodings of words might well be those that are organized around function and affordances.

Kobayashi presents important new evidence in support of this prediction. Proceeding from the seminal work of Gibson (1979), she advances a claim that is remarkably reminiscent of the monosemic analysis of Miller (1978) and Tanaka (this volume). Miller's ideas on the central role of affordances can be traced back to a detailed analysis (Miller & Johnson-Laird, 1976) of the concept *table*. In this analysis, Miller and Johnson-Laird examine a wide set of perceptual characterizations of *table*, rejecting each in turn. They finally propose that what characterizes the core meaning of table is the fact that it is something on which you can work. Interestingly, the Navajo word for table translates in exactly this way as "on it one works." Similarly, the Navajo refer to a chair as "at it one sits."

To test out these ideas, Kobayashi (1997) had adults demonstrate to children how objects can be used. She found that even 2-year-olds were able to make reliable use of actions as keys to word meaning. Of course, this skill becomes sharper over development, as children develop clearer ideas of how objects provide affordances. Ogino and Kobayashi (1999) move back into the earliest stages of language acquisition to trace the learning of cultural actions such as the use of a hairbrush to

brush one's hair. In a case study of a single Japanese child, they found that the child acquired cultural actions on objects first, then variable and spontaneous verbal expressions of cultural actions, and finally the conventional labels for the objects. Their findings match up well with parallel findings from Goodwyn and Acredolo (1993) who observed a period around 14-16 months when children could learn "baby signs" for common objects, even when they could not master the formal adult labels. The observations of Ogino and Kobayashi go beyond this, however, by showing that children acquire an understanding of weighted affordances long before attempting even informal verbal or manual symbols.

Together, these three papers by Kobayashi, Tanaka, and Takahashi demonstrate the vibrant quality of language studies in Japan. It was an honor to hear these papers and to have the opportunity to comment on their arguments and analyses. I look forward to continued production of fascinating new research from these three researchers and the many other energetic researchers who have come together to form the new Japanese Society for the Language Sciences.

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