

Language-Mediated Thought in 'Plural' Action Perception

CALEB EVERETT

1 Introduction

In the past decade and a half, there has been a resurgence of research into the subject of linguistic relativity. This research has resulted in an impressive array of evidence demonstrating manners in which a speaker's thought patterns can be constrained or determined by his or her native language. Such deterministic effects are often subtle, and do not necessarily buttress the strong version of linguistic relativity referred to by many as the Sapir-Whorf hypothesis, which was most famously delineated in Whorf (1956), but can be traced back in one form or another at least several centuries, in the work of Humboldt, Vico and Verner, among others. (Cf. Koerner 1992)

The recent resurgence of investigations into linguistic relativity has been guided by an experimentally-oriented approach to uncovering effects of language-mediated thought on cognition. The research is by necessity crosslinguistic in nature, and is also characterized by research foci that span a variety of semantic domains. Specifically, the work has sought to demonstrate that the ways in which a variety of semantic domains are reified in particular grammars have demonstrable effects on the performance of speakers of the relevant languages on non-linguistic tasks. For example, experimental evidence has demonstrated that language-specific categories of spatial topology may influence speakers' perception

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of the space around themselves and other referents, in a wide variety of languages (cf. Levinson and Wilkins 2006). Similarly, recent work on Amazonian languages has provided strong empirical evidence for linguistic determinism in the domain of mathematics (cf. Gordon 2004 and Pica et al. 2004). To cite another example, Konishi (1993) presents evidence for effects of grammatical gender categories on speakers' perception of certain objects. Even the semantic domain of color words, which was once thought to reflect cognitive universals that vitiated some of the central tenets of linguistic relativity, has been re-analyzed with novel experimental methodologies, and these studies are strongly consistent with some form of language-mediated thought. (Davidoff et al. 1999, Gilbert et al. 2006) For a more detailed survey of some of the basic areas of inquiry in the recent linguistic relativity literature, I refer the reader to Boroditsky (2003).

One area that has received little attention in the current literature is event classification. Given the centrality of verb classification and argument structure to grammar, and given that the attention of humans naturally gravitates towards dynamic actions/events, one could argue that it is particularly interesting to consider whether there is evidence for language-mediated effects on event perception. Put another way, any demonstrable language-mediated influences on something as basic as event perception would arguably be particularly noteworthy, since such effects could not be claimed to be marginal or tangential to the core of cognitive and linguistic processing. Recent work (Bohnemeyer et al. 2007) on the semantic typology of motion events has demonstrated that there is a remarkable variety of strategies of perceptual segmentation of motion events evident in crosslinguistic data. Other work has systematically investigated the crosslinguistic differences in the ways in which events of cutting and breaking are coded linguistically (Majid et al. 2007). Such studies are consistent with the existence of different patterns of event construal reified in grammars, but do not explicitly support linguistic relativity since they do not provide evidence of linguistic influences on non-linguistic tasks. Boroditsky (2001) provides convincing evidence that disparate temporal metaphors employed in English and Mandarin affect the perception of time, and consequentially of events, by speakers of these languages. While her study strongly supports the case for language-mediated thought, however, it relates to *event* perception in a rather oblique fashion.

The pilot study described below seeks to make inroads into the investigation of linguistic relativity in a very restricted and little-studied semantic distinction in an Amazonian language. Despite the limited distribution of the distinction in question, I would like to suggest that it is a potential source for demarcating a clear case of language-mediated thought in the broader domain of action or event perception. The ultimate purpose

of the study is to provide preliminary evidence for linguistically-based differentiations in the patterns of event construal across two subject populations. The existence of such patterns is consistent with the hypothesis that the construal and discrimination of events may be affected in subtle ways by language-mediated thought, and suggests the need for future work seeking to uncover language-mediated influences on action perception.

More specifically, the preliminary work described below is concerned with uncovering differences in the perception between ‘plural’ actions and ‘singular’ actions, via subjects’ participation in a brief triad discrimination task. These subjects included native speakers of two unrelated languages, Brazilian Portuguese (BP henceforth) and Tupí-Karitiána (K henceforth). The latter language does not mark nominal number distinctions via common means such as verb agreement and noun inflections. Significantly, however, K distinguishes between ‘plural’ verbs and ‘singular’ verbs in the case of a number of frequently described actions, as described in 3. The goal of the study is to try to determine whether the categorization of certain verbs as ‘plural’ verbs in K leads speakers of the language to perceive certain actions differently (when contrasted with BP speakers’ perceptions), depending on the number of participants involved in a given action. In other words, for K subjects, are certain ‘plural’ actions conceptually discriminated, vis-à-vis non-‘plural’ actions, in a way that they are not by BP subjects?

I should note from the outset that the work described below represents the initial portion of an inchoative and ongoing investigation, and is taken to be representative of future work on the subject. While the results provided in 5 are highly suggestive of a particular form of linguistic relativity in the domain of event perception, they require replication. Furthermore, the methods described below are currently being refined and extended, as described in section 6, in order to provide a more complete delineation of the relevant sort of linguistic relativity.

2 Overview of ‘plural’ actions

Prior to discussing the relevant data collected in the field, it is worth providing background on the semantic domain of action number, since it is both rare and easily conflatable with another semantic domain, namely that of nominal number. Nominal number is a category that exists in most languages in one form or another, and is frequently indexed through a plural affix on nouns. However, it may also be indexed through plural/singular agreement marking inflected on a verb form. For example, consider the following BP clause:

- | | | | |
|----|-----------------|---------------|---|
| 1. | Os | jogador-es | morrer-am. |
| | Def.masc.plural | player-plural | die-Past.3 rd plural agreement |

‘The players died.’

In this case, we see that there is a plural subject. The plurality of this subject is indexed in a variety of different ways, on all three words in the clause. The article chosen reflects both gender and number, while the subject itself is inflected with a plural suffix. Finally, the verb agrees in number via a number/person suffix. Crucially, however, despite the fact that the verb inflects for number, it is the number of the noun that is being indexed. This sort of nominal number is of course common typologically.

As has been noted in the literature (Durie 1986, Corbett 2000), however, a number of languages also reveal a distinct semantic category of ‘verbal’ number. Verbal number is fairly widespread in North American languages (cf. Mithun 1988a), but is also found in Semitic, Khoisan, and Dravidian languages. It is also evident in a few Papuan and Amazonian languages.

Corbett (2000:243-264) posits a further distinction within the larger category of verbal number. Some languages, he notes, distinguish between verbs that are singular and others that are plural, and the latter forms are generally understood to represent repeated occurrences of a particular action. This sort of ‘event’ verbal number, or pluractionality, is evident in the following contrasted clauses from Chadic:

- | | | | |
|-----|-----|-------------|------|
| 2a. | naa | aikee | su |
| | I | send | them |
| 2b. | naa | a''aikee | su |
| | I | send.plural | them |

In 2a, only one event of sending is denoted, while in 2b the speaker implies that more than one event of sending occurred.

A second type of verbal number is evident in language, however, and it is this second type that we are concerned with here. This type is termed ‘participant’ verbal number by Corbett. In languages in which this distinction surfaces, two different verbs may be employed to describe an action that is denoted with one verb in most languages. In languages with participant verbal number, however, the choice of verb depends on whether one or more participants are involved in the given action. Superficially, this distinction may appear similar to the nominal number distinction indexed on certain irregular verb pairs in languages like English (e.g. *She is* vs. *they are*). However, there is a clear *verbal* semantic distinction in the relevant cases, so that the verb used with a number of participants is conceived of as a different action altogether, when contrasted with the verb used when only one participant is involved in the depicted action/event.

One clear illustration of such a distinction is evident in Klamath (Mithun 1988a:214-215). As an example of the participant verbal number distinction in this language, consider that there are four words for 'give'. These include *l'oy*, 'to give a round object,' *n^ooy*, 'to give a flat object,' and *k^ovoy*, 'to give a live object.' Crucially, however, they also include *s?ewan?*, 'to give several objects,' and this latter verb is employed whether the objects in question are live, inanimate, round, or flat. Corbett (2000:248) notes that the latter verb 'illustrates clearly that some verbs require objects of particular types, and that being numerous is just one of these possible types.' As Mithun (1988a) notes, the purpose of forms such as *s?ewan?* is not simply to enumerate entities, as in the case of verbal agreement with a plural argument, but to quantify in a more central way the effect of particular actions or events.

Cases of participant verbal plurality typically entail a completely different lexical root than their singular counterparts, and are *not* inflected forms of other verbs. This is evidenced by the fact that verbs with plural participant number may not even have a singular counterpart. For instance, consider the English verb *scatter*. This verb is employed when a number of participants are departing a particular scene with some alacrity. It is unclear what the singular variant of *scatter* might be. The same might be said for the verb form of *stampede*. In fact, such words are arguably instances of participant verbal number in English.

While participant verbal number is less common than event verbal number (i.e. pluractionality), it does surface in languages such as Huichol, Ainu, Karok, Mikasuki, and, as we will illustrate shortly, K. In most of these cases, however, participant verbal number surfaces for only a handful of verbs, since the distinction is not part of a broader number agreement paradigm, but reflects altogether different ways of categorizing particular events according to whether they necessarily involve one or many participants.

3 Lack of number inflection Karitiâna

K is spoken as a first language by approximately 300 people in the state of Rondônia, Brazil. It has been described in a number of recent works, including Storto (1999) and Everett (2006, 2008, forthcoming a). These studies have sought to describe a number of typologically-remarkable features of the language, most significantly the remarkable variety of surface nasal forms in the language. Everett (2006) also describes basic patterns of voice and grammatical relations in the split-ergative language. What we are concerned with here, however, is the status of number marking in the language. In general, nominal number marking is absent in the

language. For example, there is one third-person pronoun, which is ambiguous for number and gender:

3. i na-oki-t i
 3 NSAP¹-kill-NFUT 3
 ‘S/he/they killed him/her/them.’

First person and second person pronouns do evince a number distinction, as we see in the following example with a 2nd person plural pronoun:

4. a:tʃa na-oki-t i
 2PL NSAP-kill-NFUT him/her
 ‘You all killed him/her.’

Significantly, however, non-anaphoric NPs do not inflect for number. Furthermore, verbs do not agree in number with their argument NPs. These facts are evident in clauses such as the following, which allow for any of the four readings in the absence of discourse-contextual cues:

5. ɲõnso naka-mĩ:t taso
 woman NSAP-hit-NFUT man
 ‘The woman hit the man.’ ‘The woman hit the men.’
 ‘The women hit the man.’ ‘The women hit the men.’
6. õmbaki na-oki-t boroti
 jaguar NSAP-kill-NFUT paca
 ‘The jaguar killed the paca.’ ‘The jaguar killed the pacas.’
 ‘The jaguars killed the paca.’ ‘The jaguars killed the pacas.’
7. õmbaki naka-i:t epe o
 jaguar NSAP-eat-NFUT tree round.thing
 ‘The jaguar ate the fruit.’ ‘The jaguar ate the fruits.’
 ‘The jaguars ate the fruit.’ ‘The jaguars ate the fruits.’

K does have a robust set of numerals and quantifiers, however, and these may be used post-nominally to modify a given noun. However, as we see in 8 in such cases the head of the NP remains uninflected.

¹ Morpheme abbreviations: NSAP: Non-speech-act-participant, used when the absolutive argument of a verb is a 3rd person referent. NFUT: Nonfuture tense. INT: Intransitive verb root. PROG: Progressive aspect. PL: Plural. AL: Allative.

8. taso otadnamĩn na-ohi:t-Ø
 man four NSAP-fish-NFUT
 'Four men fished.'

Data such as these demonstrate that number marking is generally absent in the language. There are no singular, dual, or plural inflections on nouns, and verbs do not generally agree with nouns in terms of number. There are some unusual exceptions to this latter tendency, however, namely cases in which verb aspect suffixes must agree with the singular or plural status of an NP. Progressive aspect suffixes in K may be optionally attached to the verb. These aspect suffixes also reflect the posture and number of the absolutive argument of the verb. Consider the following example of a clause with a verb inflected for progressive aspect:

9. õmbakĩ i-pit?i-**tiso/tĩŋa/tika-t**
 jaguar INT-eat-PROG.SG-NFUT
 'The jaguar is eating.' (Standing, seated, or active, respectively)

Clause 9 is understood to denote a situation in which one and only one jaguar is eating an unspecified animal (for this reason an intransitive form of the verb 'eat' is used). If more than one jaguar is involved in the eating of a given animal, then the same verb is inflected with a different progressive marker, which also varies according to the posture of the jaguars:

- 10a. õmbakĩ i-pit?i-**tisip-Ø**
 jaguar INT-eat-PROG.PL-NFUT
 'The jaguars are eating.' (Supine, inactive)
- 10b. õmbakĩ i-pit?i-**ŋgi-t**
 jaguar INT-eat-PROG.PL-NFUT
 'The jaguars are eating.' (Standing, active)

In clauses 9-10b, we see that there is a weak form of number agreement in K. However, this agreement is non-obligatory, and in cases in which the progressive marking is absent the number of the absolutive argument is not retrievable apart from context.

11. õmbakĩ i-pit?i-t
 jaguar INT-eat- NFUT

‘The jaguar(s) is/are eating.’

This section has served to demonstrate that, with the exception of the non-obligatory number agreement conflated with aspectual and body-posture semantics, number inflection is generally absent in K morphology. Clauses with semantically singular NPs typically have the same form as clauses with semantically plural NPs. Despite the general absence of nominal number in K, however, there are several clear cases of ‘participant’ verbal number, as outlined in the following section.

4 ‘Plural’ verbs in K.

There are at least five very frequent verb pairs in K that reflect differences in participant verbal number. There is also evidence for event verbal number or pluractionality in the language, particularly in certain reduplicated forms (cf. Müller and Sanchez 2008), though such pluractionality is fairly limited in scope. Event verbal number lies outside the present locus of attention, however.

What we are interested in are verb pairs such as that evident in 12a and 12b, in which entirely different lexical roots are employed in order to describe the same basic event type (at least to English speakers), but differ in terms of the number of participants entailed.

12a. nōnso naka-tat-Ø o:pok akan pip
 woman NSAP-go-NFUT white.people village AL
 ‘The woman went to the city.’

12b. nōnso naka-hot-Ø o:pok akan pip
 woman NSAP-go.PL-NFUT white.people village AL
 ‘The women went to the city.’

While it may be tempting to analyze the verb form in 12b as an irregular plural version of the form in 12a, such an analysis seems specious in the light of the fact that there is no verb agreement for number in K, apart from the idiosyncratic progressive/body posture suffix set. The fact is that K grammar treats the events in 12a and 12b as different events altogether (a conclusion buttressed by the preliminary experimental data in 5). The same can be said of the verb pair in 13a and 13b, as well as 14a and 14b, respectively.

13a. òwã ìnã i-pikina-Ø hirinã
 child small/short INT-run-NFUT fast
 ‘The short child ran fast.’

- 13b. ōwā īnā i-piʔorot-Ø hirinā
 child short INT-run.PL-NFUT fast
 ‘The short children ran fast.’
- 14a. i-ta-irit-Ø īn
 1S.ABS-SAP-come-NFUT 1S
 ‘I came/arrived.’
- 14b. ij-ta-mbikit-Ø i:tʃa
 1PL.ABS-SAP-come.PL-NFUT 1PL
 ‘We came/arrived.’

In 13a and 13b, we see that entirely different verbs are used to denote scenes in which there is one participant, or in which there are multiple participants, running. (This might be analogous to a case in English in which we described one cow running, or cattle stampeding.) In 14a and 14b, we see once again that the English verb for ‘coming’ has more than one corresponding verb in K, depending on the number of participants involved in the depicted action.

There are at least two other frequent verb pairs in K that appear to reflect participant verbal number. There are two verbs for ‘flying’, *tām* and *tēŋ*. The former verb is used in those cases in which one event participant is flying, while the latter verb is used when there is more than one participant flying. Interestingly, however, the verb *tēŋ* also implies something akin to scattering, i.e. it is a verb that is used for instance if a number of bats disperse together from a cave. Such semantic connotations also support the conclusion that verb pairs such as *tām* and *tēŋ* do not simply differ according to number agreement. Instead, they have different semantic connotations, involving primarily (but not entirely) differences in participant verbal number.

The final verb pair that I have examined in depth, which appears to reflect a participant number distinction, involves two verbs glossed in English as ‘taking’, *o:t* and *pɪ:t*. The former verb is used in cases in which someone is taking one thing, while the latter verb is used in cases in which someone is taking several things. Crucially, the latter verb does not denote serial occurrences of taking. Instead, it is employed if one person takes for example an entire stalk of bananas. The former verb would be used if a person were taking only one banana. The semantic distinction involved in this pair is perhaps fairly intuitive, since there are many things that are often

taken in groups (e.g. grapes, papers, beads) while other things are typically taken individually (e.g. a bow, a pan, a pineapple).

In the following section I present some preliminary experimental data related to these verb pairs, towards the aim of demonstrating that actions and events denoted by such verbs are discriminated/perceived differently by K speakers, when contrasted to speakers of BP, even in non-linguistic contexts. The data focus on the verb pairs evident in 12-14, as well as the two verbs for flying mentioned above. The verb pair denoting events of taking is not considered further, since for the purposes of this initial study I restricted my attention to intransitive verbs.

Recall that the ultimate purpose of investigating the events denoted by the verb pairs described in this section is to learn whether any language-influences on event discrimination surface in non-linguistic tasks. The evidence of such influences would provide evidence for some sort of linguistic determinism in the domain of action perception. As was mentioned above, while there is growing evidence of linguistic relativity in the literature, only a fragment of this evidence impinges on the dynamic processes of action perception.

5 Pilot study: methods and results

In order to test whether the presence of participant verbal number in K affects the non-linguistic construal of relevant events, a series of abstract non-linguistic stimuli were designed. These stimuli consisted of four sets of three drawings each. Each set of drawings related to a particular event type that is clearly associated with a frequent verb pair in K instantiating the phenomenon of participant verbal number. The four relevant verb pairs in question are described in the preceding section, and correspond roughly to the English verbs ‘to go’, ‘to come/arrive’, ‘to fly’, and ‘to run’.

The stimuli were designed in order to fit the general methods of a triad-discrimination task. In other words, for each set of three drawings, two drawings differed according to two parameters. In this case, the two parameters were number of participants and type of participants. For example, as we see in figure 1, the drawing on the left depicts three human-like participants arriving at a building, while the drawing on the right depicts a situation in which a four-legged animal arrives at the building. These two drawings differ in terms of participant number and participant type, then. The middle drawing of the set differs from the drawing on the left according to participant number, and differs from the drawing on the right in terms of participant type. For this reason, this and the other three sets of drawings in figures 2-4 were utilized in the action discrimination task. In case of each set of drawings, participants could in principle group

the middle drawing with either of the two remaining drawings, depending on the discrimination strategy employed. The expectation was that, for these sets of stimuli, K speakers might group the drawings according to participant number more frequently than BP speakers. This expectation is plausibly motivated by our understanding of the specifically-relevant categories of participant verbal number in K. For example, in the case of the drawings in figure 1, the events with one participant but different participant types could potentially be described with the same verb (evident in 14a above), while a description of the scene with more than one participant would require a separate verb entirely (evident in 14b above). Analogous reasoning would apply to the drawings in figure 2 (see 12a and 12b above), figure 3 (see discussion of verbs for 'flying' in K above), and figure 4 (see 13a and 13b above).

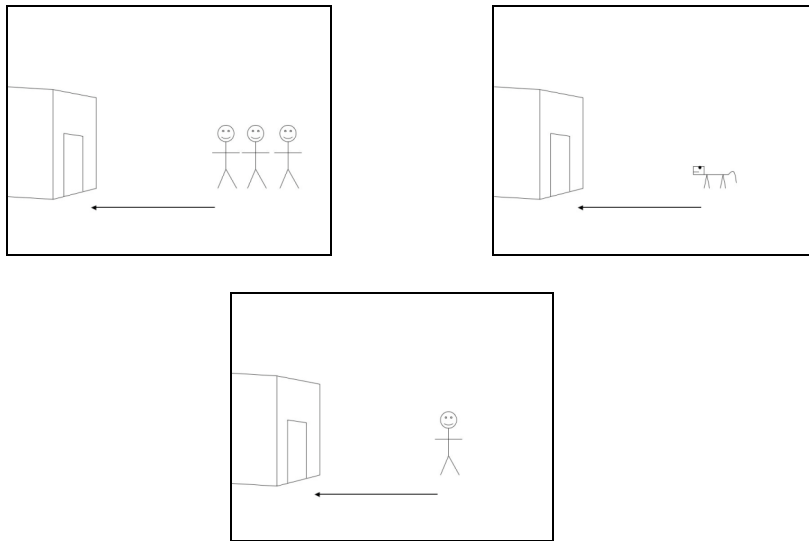


Figure 1. Stimuli for first triad discrimination task.

Fourteen native BP speakers and eight K speakers participated in this preliminary study. The study was undertaken in the city of Porto Velho, Brazil, in May of 2008. A number of other speakers have agreed to participate in a more extensive series of follow-up experiments in 2009.

The discrimination task proceeded as follows. Participants were tested individually with the four basic triads, which were presented in randomized order. For each triad, the subjects were presented with the three drawings, each of which was scaled to fit a normal printer-size paper. The drawings

were laid out on a desk in front of each subject, in the manner in which they are presented in figures 1-4 (though the order of the top two drawings was randomized). Participants were told that, while the drawings themselves were static, they represented scenes in which certain figures were moving in

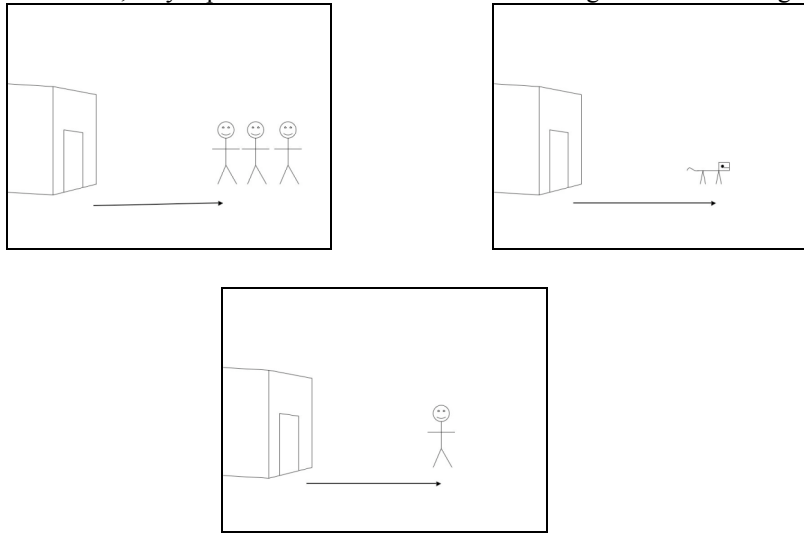


Figure 2. Stimuli for second triad discrimination task.

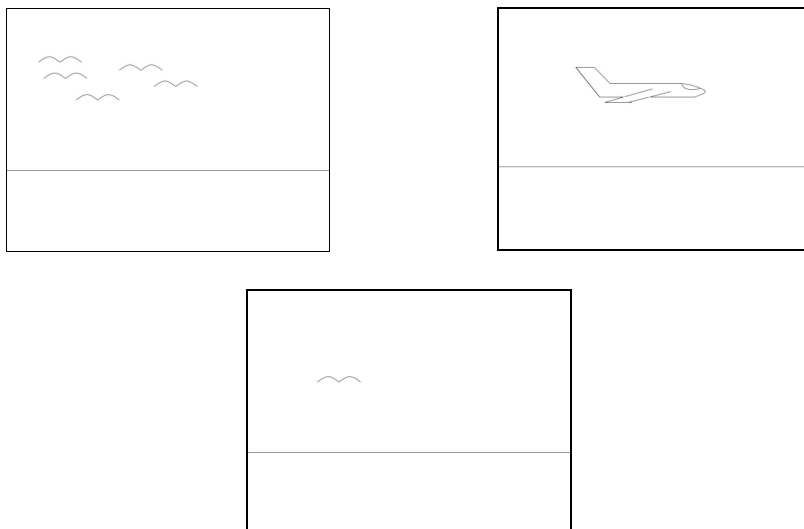


Figure 3. Stimuli for third triad discrimination task.

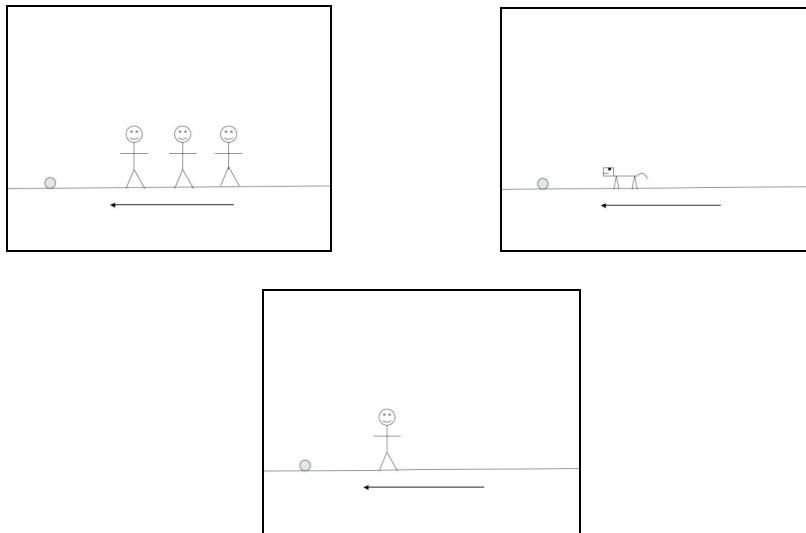


Figure 4. Stimuli for fourth triad discrimination task.

the direction of the arrow (if present). The participants were asked to take the middle drawing, which could be categorized with one of the other two drawings depending on discrimination strategy chosen, and place it with the drawing that most closely resembled the scene of the middle drawing. After the subjects made their decision, they were presented with the next set of three drawings. Subjects were asked to make their decisions silently and as rapidly as possible.

It is also worth noting that all subjects were instructed in BP. While all of the K-speaking participants spoke K natively as a first language, they were also able to communicate in BP, with varying degrees of fluency. The purpose of providing instructions in BP, and to asking subjects to carry out the task silently, was to avoid overt linguistic influences on the task. For example, if K speaking subjects described the drawings in Figure 1 out loud, they might quickly realize that there is a greater phonological resemblance between the verbs used to describe the middle drawings and the drawings on the right. This phonological resemblance could then be used in order to complete the task, but would tell us little about any more general perceptual discrimination patterns associated with action perception.

(See Boroditsky 2001 for similar comments.) Given that the tasks were not conducted in K, and that participants were asked to remain silent and perform each task quickly, we can be somewhat confident that any patterns in the data are the result of general discrimination strategies.

The participants generally required less than five seconds for each discrimination task, and this was true of both pools of participants. After providing the subjects with their brief instructions, the author performed a sample unrelated triad discrimination for the purposes of illustration, and when it was clear to the subjects that they were to group the two depictions that were most similar over all, the tasks were completed. It should also be noted that the tasks were conducted after the participants had assisted the author with a lengthier series of tasks for unrelated studies on acoustic phonetics (Everett 2008, Everett forthcoming b).

As we see in table 1, the overall results of this preliminary study of action perception in K are remarkably consistent with a deterministic sort of account. Specifically, we see that the eight K speakers generally employed the strategy in which they grouped event depictions according to the number of participants. The converse generally held for the fourteen BP speakers who participated in the study. The crosslinguistic differences were significant. The differences surfaced for all four sets of drawings.

Table 1. Response rates according to discrimination strategy.

	Participant number	Participant type
BP	18 (32%)	38 (68%)
K	26 (81%)	6 (19%)

Fisher's exact test, $p < 0.001$

To be clear, the data in table 1 suggest that K speakers tended to group the middle drawings in figures 1-4 with the drawings that depicted scenes with different participant types but with the same number (one) of participants. Put differently, K speakers tended to construe the actions depicted in the left-most drawings in figures 1-4 as though they were most distinct from the remaining two drawings. This is most likely due, I would argue, to the fact that the events depicted in these left-most drawings are in each case potentially represented with a completely distinct K verb that denotes a different participant verbal number. In other words, the events in these drawings are perceived as entirely different events, when contrasted with the other events. This conclusion is supported by the data from the BP speakers, who do not have distinct verbs denoting such 'plural' events, and also more frequently grouped the middle drawings in figures 1-4 with the

left-most drawings in these figures. (Recall however that in the actual stimuli the order of the top drawings was randomized.) The BP speakers typically rely on participant type to discriminate the three drawings, apparently since in BP the events depicted in the three drawings of each respective triad could be described via the same verb.

6 Discussion of follow-up study

The results of the task described in section 5, as well as the linguistic data for K described in 3 and 4, are generally consistent with an interpretation under which a certain typologically-unusual linguistic category, namely participant verbal number, affects the way in which K speakers construe particular actions. While the results in 5 are suggestive, however, they are of course very preliminary at this point. The study described above requires replication, extension, and methodological refinement before stronger conclusions on the matter can be made.

One way in which this study will be improved upon in a follow-up study, scheduled for June 2009, is via the implementation of more dynamic stimuli. The stimuli in figures 1-4 are obviously static in nature, and were designed in the field. A series of videos will be implemented in the follow-up studies. Participants will be presented with cartoon-like video depictions of particular actions, and will once again be asked to discriminate stimuli in order to see if perceptual patterns such as that described in section 5 surface in the perception of more dynamic data.

Furthermore, the follow-up study will include a wider assortment of static stimuli such as those in figures 1-4. Crucially, these will include depictions of actions that are unrelated to the four above actions described via 'plural' verbs in K. As Paul Kay (personal communication) notes, the relativistic interpretation of the data in section 5 would be further buttressed if there were evidence that K speakers group stimuli related to non-'plural' verbs in a different manner than the way in which they group the above stimuli related to 'plural' verbs. Future work will include stimuli related to a number of basic verb types.

Finally, the study will be improved by utilizing a second control population of English speakers, along with a pool of BP speakers. If the action discrimination patterns evident in the responses of K speakers differ significantly from those of the English and BP speakers, but the latter two groups do not differ significantly from each other, the relativistic interpretation will be further supported.

7 Conclusion

It is worth stressing that, while the findings presented in section 5 are admittedly tentative and will soon be investigated in greater detail, they are remarkably consistent with a relativistic interpretation.

Participant verbal number of the sort described above is interesting in and of itself. It is unusual typologically, and its presence in K is particularly interesting in the light of the fact that K grammar generally ignores nominal number, whether in verbal agreement or nominal inflection patterns. The participant verbal number is perhaps most interesting, however, because it is an area that allows us to test fairly specific predictions made by a relativistic approach to perceptual discrimination. As described above, recent crosslinguistic studies related to a wide variety of semantic domains have suggested strongly that the language one speaks affects their construal of the world around them in a variety of subliminal yet pervasive ways. Most of the recent literature, however, relates to speakers' discriminations and construal of relatively static facets of perception, i.e. non-actions. There is relatively little work on possible relativistic effects on the perceptions of actions. Furthermore, the general focus of this study, the perception of 'plural' actions in languages with participant event number, is unattested in the literature. Perhaps future work on K, as described in the preceding paragraphs, and future work on other languages with similar patterns of event number will provide us with a new inroad into the investigation of relativistic phenomena. Ultimately, the little-known linguistic phenomenon described in this paper may serve as a fecund source for novel inquiries into the role of language-mediated thought in the domain of action perception.

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