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Stephen C. Levinson and Asifa Majid

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Email us via library@mpi.nl
Max Planck Institute for Psycholinguistics
P.O. Box 310, 6500 AH, Nijmegen, The Netherlands

EVENT TRIADS

Jürgen Bohnemeyer, Sonja Eisenbeiss, Bhuvana Narasimhan
[in consultation with Melissa Bowerman, Sotaro Kita, Steve Levinson]

1.0 INTRODUCTION

- *For further discussion about the underpinnings of this enterprise, see Appendix II "Project Description" below.*

- **Relevant projects:** Event Representation, Space, Gesture.
- **Nature of the task:** Similarity judgement task followed by linguistic elicitation.
- **Priority:** This has high priority for people interested in subprojects on event descriptions and topological relations. It has no specific priority for other researchers.
- **Motivation:** The task is designed to investigate the salient dimensions along which events are classified by speakers of different languages in order to determine the nature of the relation between the non-linguistic classification of events and the way in which they are linguistically (and gesturally) encoded. Specifically, we investigate whether speakers judge two events to be similar on the basis of (a) the path versus manner of motion, (b) subevents versus larger complex events, (c) participant identity versus event identity, and (d) different participant roles.
- While the stimuli could be used as "pilots" for exploratory purposes, they are designed to obtain reportable results for a small but self-contained study on event encoding. We hope to use this task as the opening wedge for further crosslinguistic explorations into the relation between the structure of events and their linguistic encoding in adults and children.
- **Stimuli and the nature of the task:** The stimuli consist of a set of simple 2D animations, which systematically vary a number of parameters: E.g. manners of motion (spinning, rolling, jumping, sliding), path types (e.g. motion up or down an inclined ramp, horizontal motion going from a tree to a rock or out of a hut and into a cave), participant roles (e.g. instruments, agents, patients), whole vs. partial paths (e.g. ball rolling all the way versus part of the way from source to goal), and event types (hitting, breaking, throwing).
- The task involves watching a video clip of the **target scene** which consists of a motion event or an event where two participants interact. This is followed, after a fixed interval, by a video clip of two events presented side by side (split-screen). Each event resembles the event in the **target scene** in some ways, but differs from it in other ways. For instance, for the path-manner test items, the target scene will show a manner of motion event. Following this, on one side you will see motion in the same manner as in the target scene, but along a different path (**variant 1**); on the other side you will see motion in a different manner than in the target scene, but along the same path (**variant 2**). The consultant has to tell you which of the two variant scenes is most like the target scene. These scenes are broken up by other event scenes (e.g. hitting or breaking events) which test similarity judgements along a number of different dimensions. The set of core stimulus items will be placed in the Animation Archive.
- The second part of the task involves asking consultants to then provide linguistic descriptions (hopefully accompanied by gestures) of a subset of the relevant **target scenes only**. We will specify the set of movie clips whose target scenes are to be described.
- **Number of informants:** 12 (2 informants in each group)
- **How to run:** For the nonlinguistic task, we will have 6 directories each consisting of 50 test items and 5 training items. Each subdirectory is identified by a name (1A, 2A, 3A, 1B, 2B, 3B). The stimuli in each subdirectory are shown to one participant in *ascending* order and the other in *descending* order. The test items are numbered so that you can sort them in *Windows Explorer* in ascending or descending order using the option "sort by name". The stimuli for the **linguistic** task are placed in 2 separate subdirectories (e.g. *1A_lang1, 1A_lang2, 1B_lang1,*

etc.) within each of the 6 directories. Each of these "*lang*" subdirectories contains 9 movie clips. The participant who is shown the nonlinguistic stimuli in *ascending order* provides linguistic descriptions of the stimuli in the subdirectory with the suffix *lang1*. The participant who responds to the nonlinguistic stimuli shown in *descending order* provides linguistic descriptions of the stimuli in the subdirectory with the *lang2* suffix.

- **Technical requirements**: To run on a laptop, you will need a relatively new laptop (PC type). You need Windows Media-Player 6 (not version7), and MPG4 codec version II, which is what you should get on a TG-installed laptop. Use the following Player settings: (1) Click on VIEW, then OPTIONS, then PLAYBACK, and set 'Playback' to '1 time', and make sure that the box 'Rewind when done' is *NOT* checked. (2) Click VIEW- OPTIONS-PLAYER: make sure the box 'Use same player for each media file' has been selected. You should launch the movies from Windows Explorer, clicking the file names in numerical order after sorting the stimuli as described in the preceding paragraph.
- **Similarity questionnaire: Before running the task with the first participant, determine with a different set of consultants how the concept of graded similarity is expressed in your language using the questionnaire provided in Appendix II.**
- The basic procedure for the experiment is described below, and the detailed step-by-step set of instructions is provided in Appendix I. *Please read these carefully before embarking on the experiment.*
- For the nonlinguistic similarity judgements: Train your consultant with a short set of "training" stimulus items. To **load the films** click on the file in your file manager; to play, click on the player 'play' button. Show the target scene followed by the split-screen scene. Ask your informant to wait until the clips have finished playing, and then to point to the scene which is most like the target scene. Once your informant is familiar with the procedure, start running the trial scenes. Responses must be noted on the coding sheet (see Appendix I), and may in addition be videorecorded.
- For the linguistic elicitation: After you run *all* the test items for the nonlinguistic task, you can proceed to the linguistic task. *The linguistic task always follows the nonlinguistic task.* Show your consultant only the **target scenes** one after the other. To show only the target scene, run the clips as before, but stop the movie before the two events on the split-screen are shown. Ask your consultant for a **description** of the scene. Get the whole clause with adjuncts. Proceed to the next scene. Responses can be noted, audiotaped, or videorecorded (for gesture).
- **Comments:** If you have suggestions, please send a note to: bohnem@mpi.nl *or* bhuvana@mpi.nl *or* Sonja.Eisenbeiss@mpi.nl
- **Conclusions:** The procedures described in this section have been designed to allow for quantitative and qualitative analyses for comparative purposes, and hence we would appreciate it very much if you could conform to them as closely as possible.

APPENDIX I

SECTION I

INSTRUCTIONS TO THE EXPERIMENTER

Before starting the experiment, determine with a different set of consultants how the concept of graded similarity is expressed in the language spoken by the consultant. Use Steps 1 and 2 of the **similarity questionnaire** in Appendix II. After you have zeroed in on an expression of graded similarity that best captures the nature of the Event Triads task, you can introduce the task to your actual participants

(1) Stimuli for the non-linguistic task: There are 6 groups (corresponding to the 6 directories in the Event Triads folder on the computer). Each one contains 5 training items and 50 test items. The order of the training items is the same for all participants. For the test items, you have to create two orders:

- The stimuli in each group should be shown to two participants. For one participant, sort the clips in ascending order so they're numbered from 1-50.
- For the other participant, sort the clips in descending order so they're numbered from 50-1.
- In this way, you will show the clips to 12 participants in all.
- We have named the clips so that, if you sort them in ascending/descending order by name (using the "sort" function in Explorer), they will automatically be arranged in the order in which they should be shown to the participant.

(2) Stimuli for the linguistic task: In addition, within each of these 6 directories, there are two subdirectories (with the suffix *lang1* and *lang2*). E.g. the directory named *1A* will have two subdirectories with the names *1A_lang1* and *1A_lang2*. The participant who was shown stimuli in *1A* in ascending order for the nonlinguistic task will provide linguistic descriptions of the stimuli in *1A_lang1*, and the other participant will describe the stimuli in *1A_lang2*.

(3) Start the experiment in the following way:

- Give the participant the instructions for the nonlinguistic task (Section 2A below), allowing for questions.
- Show the training items and make the participant respond to each of them by pointing to the clip on either the left or the right. Start the first clip. Say 'I'm going to show you a film now that just contains a single picture. I want you to look at this carefully.' When the two variants come up and the clip stops, say 'Now you see two pictures, one on the left side of the screen and one on the right. They are both different from the first picture. But I can imagine people who would say that one of them is MORE LIKE the first picture THAN the other. And I want to know which of the two *you* find MORE LIKE the first picture. I think different people have different opinions on this, and no opinion is right or wrong. I would just like to know what your opinion is. If the answer is affirmative, ask the participant to explain his/her choice. You need to determine what is the source of the misunderstanding. Ultimately, regardless of whether the participant choose the picture on the right or didn't choose any picture, explain to the participant that you think the picture on the left is more similar, because it shows a blue square like the first picture, only that blue square is located at the top bar rather than at the lower bar. Ask whether the participant agrees that given these facts, the relationship between the first picture and the picture on the left can be expressed in terms of GREATER LIKEness. If the participant does not agree, ask how (s)he would frame the relationship between the first picture and the one on the left. If the participant doesn't offer a productive strategy that could be applied during the remainder of the task, move on to the next clip. This again shows

pictures of stative scenes. Repeat the same procedure. If you still don't find a way to get the participant to point to the clip that appears to be more similar, move on to the next participant. If, at any time during this procedure, participants ask whether their decisions were right or wrong, reassure them that there is no right or wrong response.

- After showing the training items, give the participant another chance for questions but try not to bias them in any way with your answers.
- Now start running the actual test items. Each item should be shown *once* only. As with the practice items, note down the participant's response (left or right point) by putting a cross (**X**) in the appropriate column on the coding sheet.
- After responses for 25 items have been noted, take a 10-minute break and resume the task until all the items are completed. You may take a break (of indefinite length) after this.
- Now, *from the same consultant*, elicit linguistic descriptions for the 9 stimulus items in the subdirectory (with the suffix *lang1*). Show each item once and ask the consultant to describe it. Write, audiotape, or videotape the responses.
- For the next participant, sort the same stimuli in *descending* order, and repeat the experiment. When the nonlinguistic task is done, show the consultant the stimuli in the second subdirectory (with the suffix *lang2*) in that directory, and elicit linguistic descriptions.

Two sample coding sheets with opposite orders are given below (you can xerox them for your use).

(4) BEFORE the experiment:

- On the coding sheet, indicate the name of the subdirectory containing the stimuli to be shown to the participant by circling the one of the choices provided (e.g. 1A, 2A, etc.).
- Note down general information: age, gender, education, literacy, knowledge of other languages, handedness, color blindness, vision impairment.
- General comments (response bias for left or right, attention problems, ...) can be noted on the back of the coding sheet.
- Indicate the name of the subdirectory containing the stimuli to be shown to the participant for the **linguistic** task (e.g. *1A_lang1*, *1B_lang1* etc.).

(5) DURING the experiment:

- Also, if you have comments on any item, write them down in the column provided for this purpose.

(6) AFTER the experiment:

- Ask the participant to tell you what s/he thinks the experiment is about and whether they used any strategies. Note all responses to this question on the coding sheet.

SECTION II

A. Instructions to give to the participants for the nonlinguistic task (please translate into the language spoken by the participant):

- I am going to show you many short animation clips one after the other. I want you to watch these clips very carefully because I will show them to you only once.

- Each clip consists of three scenes. First you will see one scene. Please watch this scene carefully, all the way to the end.

- After this, you will see two scenes side by side; one on the left side of the screen, and the other on the right side of the screen.

- These two scenes are not exactly the same as the first one and are a lot smaller, but they are similar to it.

- I want you to watch both of these two scenes very carefully all the way to the end, and then point to the one which is more similar to the first clip.

- Please respond **AS FAST AS POSSIBLE, WITHOUT THINKING TWICE ABOUT YOUR DECISION**. You will not get a chance to see the clips again.

- Let us practice with a few clips first.

B. Instructions to give to the participants for the linguistic task after completion of the nonlinguistic task (please translate into the language spoken by the participant):

- I am now going to show you 9 animations, one after the other.

- Each will consist only of one scene.

- Watch the scene all the way to the end, and then describe to me what you saw.

CODING SHEET [PAGE 1 of 2]

GROUP NO.: 1A / 2A / 3A / 1B / 2B / 3B (Ascending Order)

Participant's Name:_____Age:_____ Gender:_____

Colour blindness: _____Other vision impairment:
_____

Education and literacy level:_____
_____

Knowledge of other languages:
_____

Participant's Brief Comments on the Task:
_____
_____

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	point to LEFT clip ?	point to RIGHT clip ?	COMMENTS
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CODING SHEET [PAGE 1 of 2]

GROUP NO.: 1A / 2A / 3A / 1B / 2B / 3B (Descending Order)

Participant's Name:_____Age:_____ Gender:_____

Colour blindness: _____Other vision impairment:
_____

Education and literacy level:_____
_____

Knowledge of other languages:
_____

Participant's Brief Comments on the Task:
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	point to LEFT clip ?	point to RIGHT clip ?	COMMENTS
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APPENDIX II

SIMILARITY QUESTIONNAIRE

- The Event Representation Triads task is a controlled procedure for the elicitation of graded similarity judgements. It is indispensable to the success of this task that the participants understand its nature. But the nature of the task is rather abstract and not necessarily very natural for all participants. There are multiple concerns here. To begin with, how the question is phrased ('Which one is more similar?') may have subtle effects on how participants interpret the task, and hence on their performance. There may be ways in which this question can be interpreted that we don't want the participants to go for. For example, one of the constructions used to express similarity in Tiriyo involves pretence (Sergio Meira p.c.). This opens up at least a theoretical possibility that when somebody says 'B is more "LIKE" A than C' what she means is 'B is only pretending to be like A, but C is really like A'. Now if a person interprets the task in the sense of detecting pretenders, she might actually systematically identify the *less* similar items. Or suppose while framing the task for the consultant you inadvertently hit upon an expression that denotes exclusively or primarily resemblance among people. For example, Mandarin uses *xiàng* for resemblance among people and objects, but *zhèyàng* for similarity across events. There is no way of using one in the domain of the other (Chappell 1994). Using *xiàng* for explaining the task to Mandarin participants might bias them towards comparing exclusively the color, shape, etc. of the characters involved in the stimulus scenes, ignoring the features of the events that we're most interested in.
  We don't just want to rule out particular readings in particular languages. In order to ensure comparability, we in fact want to make sure that all participants understand the task in the exact same way, as far as that is possible. Because of these concerns, we strongly recommend following the three-step procedure detailed below to negotiate the interpretation of the task:

- Step one: **Before running the task** with the first participant, determine **with a different set of consultants,** how the concept of graded similarity is expressed in the following contexts:

  (a1) (It is plain to see that X and Y are twins.) X looks very much LIKE Y / RESEMBLES Y a lot.

  (a2) X looks MORE LIKE her mom THAN like her dad / RESEMBLEs her mom MORE THAN her dad.

  (b1) (How do you bide somebody farewell around here?) – You do (it) LIKE THIS [gesture].

  (b2) (Is this [gesture] how you bide someone farewell around here?) – No, you do it MORE LIKE THIS [gesture].

  (c1) (I found this knife on the road. Somebody must have lost it. Do you know whose it might be?) – I'm not sure, but it looks LIKE X's knife.

  (c2) (I found this knife on the road. I think X lost it. Do you think this is X's knife?) – I'm not sure, but it looks MORE LIKE Y's knife THAN like X's.

  (d1) (Look at how X has dressed up!) He looks LIKE a rich man, and he can't even afford to buy his kids books for school!

  (d2) (Look at how X has dressed up!) X looks MORE LIKE a rich man THAN Y, even though Y has a lot more money than X.

  (e1) (Today little X drew this picture at grammar school. What do you think is it [a picture of]?) – It looks LIKE a house.

  (e2) (Today little X had to draw a house at grammar school. She made these two attempts. Which one do you like better?) – This picture looks MORE LIKE a house THAN that one.

  (f1) Little X is talking LIKE a parrot.

(f2) (Listen to little X and little Y playing! They're talking LIKE parrots!) – I'd say little X sounds MORE LIKE a parrot THAN little Y.

The expression of similarity that would be the best candidate for the Event Triads task is one that features as the most natural choice in the (b) and (f) contexts, while it does NOT feature in the (d) contexts. Definitely all candidates should be excluded that are produced in response to the (a) and/or (d) contexts but not in response to the (b) and (f) contexts. In case there are multiple options that all cover the (b) and (f) contexts, such that either neither also captures the (a) and/or (d) contexts or all of them do (and there is no option that covers (b) and (f) but not (a) and/or (d)), the best candidate should be the most general expression of similarity, i.e. the one that captures most of the contexts (a)-(f). However, all candidates that don't allow for grading (the (2)-options) in the (b) and (f) contexts will have to be excluded, even if they look otherwise pretty strong as choices for (b) and (f).

- Step two: Once you have determined a set of likely candidates, test these with respect to the training items. Do NOT do this with consultants that you would also like to be participants in the actual task! The training items all show one variant that is obviously more similar to the target than the other variant, except possibly for the triad number four (see below). Omit number four from this part of your efforts, and you should be able to find out relatively easily whether a consultant understands the nature of the task. Negotiate with that consultant the applicability of your candidate expressions of similarity with the Event Triads (noting down any comments that may later shed light on the outcomes of the task) and find out which expressions works best.

APPENDIX III

PROJECT DESCRIPTIONS

We intend to use the Event-Triad task to examine how modifying the structure of events along different dimensions (by varying aspects of the stimuli) affects the classification of events and the way they are linguistically encoded. In the following paragraphs, we outline our specific questions and how they motivate the design of our stimuli.

(A) PATH MANNER

The path-manner variant of the Event Triad task is designed to test the hypothesis that speakers of languages which use manner of motion verbs to head clauses expressing directed motion with a "boundary-focus" (Slobin & Hoiting 1994) will judge two motion events to be similar if the manner of motion is the same in the two events even if the path of motion differs; and, conversely, that speakers of languages which characteristically use path verbs to head clauses expressing directed motion with a "boundary-focus" will judge two motion events to be similar if the path of motion is the same in the two events even if the manner of motion differs.

This issue is not unproblematic. Consider the following counterarguments and possible replies to them.

(1) Path bias: According to Talmy's (1991) account, the *core schema* of a (motion) event is the path, whether it is expressed as a satellite (verb particle in English), or as a main verb. It comprises the "upshot" of the event (Talmy 1985) regardless of its locus of encoding in the verb or the satellite; Talmy suggests this can be tested using negation: both the sentences, *John did not walk into the room* and *John did not enter the room* (spoken with neutral stress & intonation) negate the central proposition expressing path information. Hence we should expect that the path of motion should be a more important criterion for judging two events to be similar regardless of whether the speaker linguistically encodes the path in the verb versus the satellite.

Even if the path is the upshot in a satellite-framed language, the verb is the syntactic head of the construction and a prominent determiner of argument selection and event structure. Hence the ability of manner of motion verbs to occur as the syntactic head of a clause may give them special prominence which is not accorded to adjuncts.

(2) Manner bias owing to lexicalization: Even in languages which are verb-framed, it is not the case that manner of motion is not lexicalized at all. Even if certain manner distinctions may not be lexicalized (e.g. the distinction between *slither* and *slide* is not lexicalized in Hindi), languages such as Spanish (and Hindi) do have some manner of motion verbs in their lexicons. Hence, if lexicalization plays a role in influencing nonlinguistic judgements, then we should not find any differences between verb- and satellite-framed languages in their relative influence on cognition.

Verb-framed and satellite-framed languages might be similar in lexicalizing manner of motion verbs; however they still differ in the flexibility with which these verbs occur in the directed motion construction. That is, consistent differences in verb-construction mapping compatibilities might influence the salience of different aspects of the motion event.

(3) Manner bias owing to relative frequency of encoding manner: Further, it is not the case that manner of motion verbs cannot occur with path expressions at all. Both in Spanish and Hindi,

manner of motion verbs can occur with atelic or "path-focus" expressions (Slobin & Hoiting 1994). Although such path phrases may not be satellites in Talmy's sense, they nevertheless constitute cases where a manner of motion main verb can co-occur with a path expression in a single clause.

Even if verb-framed languages do not allow manner of motion verbs with "boundary-focus" path phrases, the manner can always be expressed by using adjuncts such as a gerundial phrase (*go into the room hobbling*) or an adpositional phrase (*go under the bridge on rollerblades*).

Özcaliskan & Slobin (1999) suggest that Spanish and English differ in the relative frequency with which manner information is mentioned in narrative discourse. While lexicalization and co-occurrence patterns at the sentential level might play a stronger role in influence non-linguistic cognition, there is nevertheless no a priori reason to assume that factors such as frequency of mention at the discourse level are not similarly influential.

(4) Subset-superset: The same event can be viewed in different ways: that is, an event in which John hobbles to the door could be viewed separately in terms of John hobbling and John reaching the door, and could be encoded with two separate clauses in *both* satellite-framed languages *and* verb-framed languages: *John hobbled and he reached the door.* More generally, there is a subset-superset relation between languages such that the same event can be described in similar ways by speakers of different types of languages. E.g. the option of encoding the event in 2 clauses is available to speakers of English, Yukatek, and Hindi; the option of encoding it in one clause (*John went from the house to the store*) is available only to speakers of English and Hindi; and the option of encoding the event in one clause with a manner verb is available only to the English speakers (*John hobbled to the door*).

Even though different perspectives can be taken on an event, it is nevertheless the case (as Talmy also points out) that languages follow one particular characteristic pattern of encoding (motion) events which is systematically excluded by the other language. That is, within the English language, the pattern of combining manner verbs with telic, boundary-focus path phrases in a single clause is unmarked, natural, frequent, and attested early in acquisition. In Hindi (if not in Spanish), it usually more natural to express manner--even in the atelic cases-- with a gerundial. Combining manner verbs with path phrases in non-boundary focus clausal constructions is attested, but not characteristic in the relevant sense. We can argue about whether the influence of such patterns is more or less subtle, but we cannot rule them out altogether.

Simplifying slightly, we can summarize these arguments in terms of the following hypotheses:

Cognition hypothesis: Linguistic encoding does not influence a cognitive task involving the classification of events on a nonlinguistic basis. Orientation to path vs. manner is the same everywhere, hence not systematically different for satellite- versus verb-framed languages. This outcome is probably most likely to reflect the relative "raw" cognitive salience of the two components for human beings, although conceivably universal design features of language or culture could influence everyone in the same way.

Whorfian hypothesis: Linguistic encoding does influence the classification of events on a nonlinguistic basis (although conceivably accidentally correlated cultural variables might be identified, at least if the language sample is relatively small). Speakers of verb-framed languages and satellite-framed languages will differ in the relative importance they give to path (versus manner) in judging two events to be similar. Within the particular subtypes of verb-framed and satellite-framed languages, there will be further distinctions in the relative prominence of the manner dimension, depending on factors like individual differences in the grammatical marking of manner elements and their use in discourse. Note that we only expect statistical tendencies for

path or for manner as a function of language type and not absolute results (e.g., 100% path or 100% manner).

The nonlinguistic version of the event-triad task only allows us to reject the null hypothesis that there are no differences across languages in nonlinguistic similarity judgements (that is, the ratio of path choices and manner choices is THE SAME across speakers of any language whatever the value of the ratio is). It does not allow us to distinguish between the case where we find an equal ratio of path-manner choices (50% manner & 50% path responses) across languages, versus the case where we find a bias in the ratio across all languages (e.g. 70% path & 30% manner). Whereas in the former scenario we can conclude that language does not really play any role in influencing cognition, we cannot do so if we find a bias of any sort (for path or for manner). In fact, we cannot draw *any* conclusions about where the bias originates since the bias might driven by cognition (the Cognition hypothesis) or by language (the Whorfian hypothesis). The latter hypothesis is compatible with the possibility that different languages exhibit a similar influence on cognition (owing to some universal design feature of "the language module" independent of cognition). Hence the nonlinguistic event-triads task by itself will not help us distinguish between the two hypotheses. In order to do so, we will have to perform additional experimental manipulations. Of course there's a third possible outcome: that speakers of particular languages show systematic differences from one another, but that these differences don't correlate with language type. this would suggest that influences on the relative salience of manner vs. path are cultural, but not linguistic--or at least not due to those aspects of language structure we have been looking at.

(B) PARTICIPANT IDENTITY VS. EVENT IDENTITY

Which plays a more prominant role in event categorization: the identity of the event itself or of its participants? This question has arisen as a follow up on the "part-whole" task described above. The hypothesis pursued in the part-whole task is that people who have a "macro-event concept" instantiated by the target event will be more likely to consider the target similar to another complex event differing from the target only in its participants (here: the moving figure or the ground objects), while people who lack a macro-event concept instiated by the target will be more likely to consider the target similar to a variant that shows only a subevent of the target, but with identical participants. However, this presupposes that people generally find two events that differ only in their participants more similar than two events that have the same participants but differ in the actions or changes these participants are involved in. If this is not borne out, than even "macro-event conceptualizers" might find a subevent with the same participants more similar to the complex target than another complex event with different participants. So in order to make sense of the responses to the part-whole task, we need to test whether people generally find an event of, say, A hitting B more similar to an event of A breaking B (different event type, same participants) or more similar to an event of C hitting B (same event type, but different participants).

There is no prediction at this point that language has any effect on participant prominence vs. event prominence, but the issue is obviously important in and of itself. To study this, a set of three-participant events is shown in this condition: hitting a goal with an instrument, breaking a patient with an instrument, giving a theme to a recipient, and throwing a theme to a recipient. Each triad matches one of these events with (a) a different event with the same three participants (red or green tomato man or triangle man in the roles of agent or patient/goal/recipient and a stick or mallet in the role of theme or instrument); e.g. red t-man hits greent t-man with stick vs. gives stick to green t-man) and (b) an event of the same type with one altered participant (e.g. red t-man gives stick to green t-man vs. to triangle man).

(C) PARTICIPANT ROLES

Are some participant roles more important for event identity than others? In this task, the target is compared to two variants that show events of the same type, but in each variant, a participant of a different role changes identity. So the task is now to determine whether e.g. two breaking events differing in the instrument that is used are more similar than two breaking events differing in the patient that is broken. In addition, there are items that address the same question with respect to the relative impact of the identity of ground object identity, ground object location, and direction on judgements of the similarity of motion events.