

### Agents and Events: An Exploration of Meaning in Object-Experiencer Psych Verbs

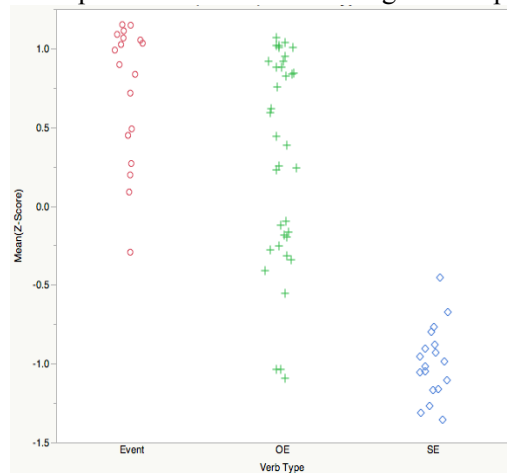
This paper proposes a classification of a particular sub-group of English psychological ('psych') verbs in terms of their potential for eventive and/or agentive readings. We discuss (i) the theoretical implications for theories of psych verbs and argument structure in general and (ii) the challenges that arise in experimentally establishing such a classification. Psych verbs describe the mental state of an Experiencer argument. They famously exhibit unusual variation in the position of this argument, which can be expressed as either the syntactic subject (*John loves bats*, Subject-Experiencer 'SE' verbs) or as the object (*The bats frightened John*, Object-Experiencer 'OE' verbs; cf. e.g., Belletti & Rizzi 1988, Pesetsky 1995). Importantly, the licensing of arguments has been argued to be correlated with templatic information; this information in turn determines the event structure of a predicate. In this respect, any proposal about the licensing of a predicate's arguments is likewise a proposal about the predicate's event structure. However, while the SE verbs are uniformly stative, OE verbs may give rise to both eventive and stative readings (*The bats frightened John* vs. *Bats frighten John*). A contested issue is the role of the subject in determining these aspectual values: while states do not allow agents, many OE verbs can appear with both agent subjects (*Mary deliberately frightened John*) and non-agent subjects (*The lightning (\*deliberately) frightened John*). Researchers further disagree regarding the precise aspectual value of eventive OE verbs and its possible connection to agentivity (achievements, e.g. van Voorst 1992; vs. achievements or accomplishments depending on agentivity, e.g., Landau 2010). Crucially, it has also been argued that the class of OE verbs does not behave uniformly with regard to these properties. Rather, some items (e.g., *depress*) seem to be restricted to stative (or non-agentive) readings (see Grafmiller 2013 for discussion and references). More recently, Grafmiller (2013) has claimed that *any* OE verb can be used to describe a dynamic event with an agent, and that no systematic classification can be made based on such restrictions.

In order to assess these claims, one must first investigate how individual OE verbs pattern with respect to their potential for agentivity/eventivity, and thereby ascertain whether this class might indeed be further subdivided on this basis. Our study therefore uses speaker judgments of the relative acceptability of these verbs in diagnostic contexts aimed at distinguishing between 1) agentive and non-agentive verbs and 2) stative and eventive verbs. Although numerous such contexts have been proposed for verbs of all types (e.g. agentivity: the imperative; eventivity: the progressive), much of the data concerning acceptability in these contexts has been based on introspective intuitions. This is particularly problematic within the psych domain, where intuitions are delicate – indeed, different researchers may even disagree regarding the same examples (Grafmiller 2013: 108-109). The choice of diagnostic may also have implications for how judgments can be interpreted, as some environments may be disallowed with certain verbs for other reasons (e.g., the progressive with achievements), or allowed under alternate or repair readings (e.g., the progressive with stage-level states, cf. Carlson 1977; the imperative with wishes, cf. Grafmiller 2013: 241).

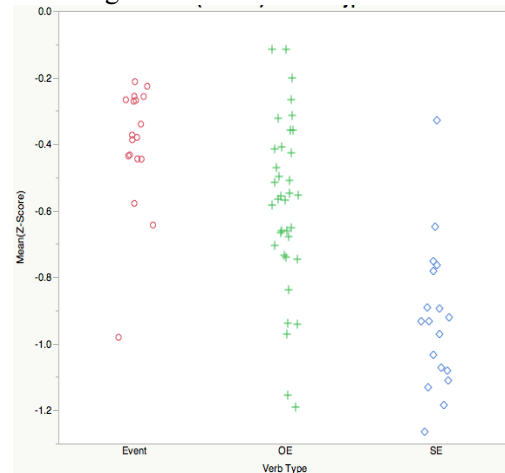
Recent work by Grafmiller (2013; cf. Verhoeven 2010) attempts to address these issues for agentivity. Based on speaker judgments, he concludes that the 20 OE verbs he examined do not form agentive and non-agentive sub-classes; instead, they fall along a continuum according to *relative* potential of being used with an agent. However, this study does not clarify how this continuous distribution compares to that of non-psych verbs – whose ability to take an agent should be clearer – nor does it provide any indication of the verbs' potential for eventivity. We thus set out to probe these issues further, by collecting judgments for a larger set of 36 OE verbs in particular diagnostic contexts. For agentivity, this context involved modification with adverbs like *deliberately*, which have been argued to "relate solely to degree of intent" (Grafmiller 2013: 223). The availability of an event reading was investigated via the frame *What happened was...* (e.g., *What happened was John scared the baby*), which should allow only (and any) events (Jackendoff 1983). This latter diagnostic was used with both animate and inanimate subjects, in order to further ascertain whether and where non-agent subjects allow an event reading (Alexiadou & Iordăchioaia 2014). In choosing these contexts, we attempted to target stronger intuitions, avoid alternate/repair readings, and minimize the effects of any non-relevant distinctions (e.g., the duration of the eventuality). The acceptability of the OE verbs in these contexts was further compared to that of 18 verbs which clearly allow eventive/agentive ('Event') uses (e.g., *hit*), as well as 18 stative/non-agentive SE verbs. The behavior of these groups provides us with an indication of the variation expected within more uniform verb classes, thereby giving us a basis for comparison with both individual OE verbs and the OE class as a whole. If OE

verbs do indeed fall into two different types according to their potential for agentivity or eventivity, then we would expect these two types to elicit patterns of intuitions resembling those of the two ‘control’ classes (Event vs. SE verbs). Furthermore, the inclusion of these more distinct groups may also serve as a means of evaluating the usefulness of our chosen diagnostics.

Across four counterbalanced questionnaires, each of the 72 verbs from these three groups was thus tested in each of three sentence contexts: 1) with an agentive adverb; 2) with an animate subject following *What happened was...*; and 3) with an inanimate subject following *What happened was...* (SE verbs, with obligatorily animate subjects, were excluded here). Each native speaker respondent ( $N = 152$ ) saw each verb (within a sentence) only once, and provided a rating of naturalness for each sentence on a continuous 7-point scale (normalized to z-scores by respondent; more positive scores indicate higher acceptability). Mean ratings for each verb are illustrated below.



**Fig. 1: With Agentive Adverb**



**Fig. 2: Animate subject + *What happened was...***

The data in Fig. 1 suggest that modification with an agentive adverb makes a relatively clear distinction between ‘Event’ verbs like *hit* which permit an agent, and SE verbs like *love* which do not. However, there is still some variation within each of these classes. These two patterns also seem to be generally reflected in the distribution of the OE verbs, with some of them (e.g., *frighten*) patterning more closely with agentive verbs like *hit*, and others (e.g., *interest*) with non-agentive verbs like *fear*. Interestingly, a number of others (e.g., *astonish*) also fall somewhere in between. A similar pattern obtains in the event frame, both with animate and inanimate subjects (the latter not pictured). This context elicited much lower acceptability overall as compared to one with an agentive adverb. This issue may be partially responsible for the fuzzier division between the Event and SE groups. Nevertheless, the distribution of the OE verbs again appears to be in line with the combined distributions of the Event and SE verbs, with certain verbs rated more like one or the other of these two verb types. These results suggest that there is indeed some distinction to be made between those OE verbs which allow eventive and/or agentive readings, and those which do not. Although the distinction is not completely categorical, the fact that some verbs elicit ‘intermediate’ ratings does not necessarily indicate that the distinction is not relevant, as such cases are possible even for less contentious verbs – e.g., *like* (SE), *prod* (Event), and *anger* (OE) elicited similar ratings in the eventive context.

Still, the complexity of this situation means that there are several issues left to be explored. Indeed, it could be the case that such diagnostics cannot provide clear-cut distinctions, especially given the subtlety of the judgments and the potential for alternative or repair readings. The particular distinctions investigated here also pose challenges for the interpretation of results, as it is possible that some verbs may have allowed aspectual coercion; similarly, it may be the case that some types of subjects are more easily (re-)interpreted as agents. However, despite – and because of – these difficulties, this study and its results raise interesting questions not only for an understanding of the aspectual and syntactic behavior of psych verbs, but also for the use of diagnostics and judgment data in the investigation of verb meaning more generally. We therefore propose that this area of research may further benefit from the combination of several different experimental methods (e.g., acceptability and truth-value questionnaires, online behavioral/neurological tasks), in order to allow a more nuanced understanding of the factors at play.