

Experience matters: A psycholinguistic investigation of subjectivity in adjective interpretation
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There exists a range of linguistic expressions that make reference to the subjective perspective of an individual, including *epithets* (e.g. *the idiot*) and *predicates of personal taste* (PPTs, e.g. *fun*, *tasty*). These expressions have been analyzed as making reference to a judge or evaluator (e.g. Lasersohn 2005, Potts 2007, Stephenson 2007, Patel-Grosz 2012, Harris 2012). Who thinks X is an idiot? Who thinks that Y is fun? Much of the current research builds on Lasersohn's (2005) judge parameter *j*, such that the truth of sentences containing predicates of personal taste is interpreted relative to the particular individual who is the judge (e.g. $[[\text{fun}]]^{c; w, t, j} = [\lambda x_e . x \text{ is fun for } j \text{ in } w \text{ at } t]$).

Another case of judge-dependence involves *multidimensional adjectives* (e.g. Sassoon 2013). Multidimensional adjectives can be viewed as a superset that includes predicates of personal taste (PPTs) as well as non-PPT multidimensional adjectives (e.g. *healthy*, *intelligent*). In essence, multidimensional adjectives involve multiple criteria for ordering individuals with the property (e.g. for *healthy*, the cardiovascular system and the immune system). McNally and Stojanovic (2014) note that people can disagree regarding the weight/significance of each dimension, which results in judge dependence (see also Bylinina 2014).

Prior theoretical work has argued for a **fundamental difference in the kind of perspective-taking triggered by these two adjective types**: The claim is that predicates of personal taste crucially involve an *experiencer* argument, whereas multidimensional adjectives that are not PPTs do *not* have an experiencer argument (e.g. Bylinina 2014, McNally & Stojanovic 2014). In essence, for something to be 'tasty', someone must have the experience of tasting it – but for someone to be 'healthy', no such experiencing is necessary (e.g. McNally & Stojanovic 2014).

This claim points to a **crucial semantic and cognitive difference between these two classes of adjectives**: Although both involve subjectivity and perspective-taking (interpretation from the judge's perspective), with PPTs comprehension is hypothesized to also involve identification/cognitive retrieval of the individual with the personal experience that provides the basis for judging. This predicts that PPT processing involves consideration of others' *experience*, in addition to *perspective/opinions*. However, intuitions regarding the role/contribution/presence of experiencers are often murky, and existing tests that have been suggested as means of identifying adjectives with experiencers – e.g. evaluative use of the *find*-construction – are controversial and do not always provide a reliable diagnostic (e.g. McNally & Stojanovic 2014, Sæbø 2009, Kennedy 2013, Bylinina 2014 for discussion).

We conducted a **psycholinguistic experiment** that aims to directly test the hypothesis that *processing PPTs entails activating an experiencer whereas processing non-PPT multidimensional adjectives does not*. To test the claim that PPTs entail experiencers whereas merely multidimensional adjectives do not, we manipulated verb argument structure – in particular, we compared contexts containing verbs that introduce experiencer arguments vs. verbs that do not. When comprehenders encounter a PPT, we predict that a recently-mentioned experiencer argument would be an ideal judge candidate. McNally and Stojanovic (2014) note that a number of PPTs are derived from experiencer verbs (e.g. *to disgust: disgusting, to irritate: irritating*). Thus, we hypothesize that an experiencer verb is well-suited for providing an

experiencer judge for a PPT. The experiencer argument is predicted to be more likely to be chosen as the judge of a PPT than is a non-experiencer argument of another verb. Crucially, if regular (non-PPT) multidimensional adjectives (e.g. *intelligent*) do not have experiencer judges, they are not predicted to show this asymmetry.

Experimental method and design: Native English speaking adults (n=60) were asked to read excerpts (ex.1-2) that they were told are from narratives. For each item, people were asked questions, e.g. (ex.3) which essentially asks ‘who is the judge/evaluator?’ from whose perspective the adjective is interpreted. (Participants chose one of the three answer choices.) We manipulated **(i)** the nature of the adjective in the second sentence (either PPT or a non-PPT multidimensional adjective, ex.2) and **(ii)** the verb in the first sentence (Experiencer-Theme or Agent-Patient, ex.1).

Experiencer-Theme verbs like *see/hear/look at* are analyzed as having an experiencer subject (e.g. Ambridge et al. 2015), unlike Agent-Patient verbs. Thus, whether the verb is Experiencer-Theme or Agent-Patient allows us to manipulate whether the context contains an experiencer argument that can fulfill the role of judge. We compare PPTs – whose judge is hypothesized to be an experiencer – to multidimensional adjectives which are hypothesized to not be sensitive to the notion of experiencer. (We also tested non-judge-dependent nongradable adjectives, but omit them here for space reasons). The PPTs and non-PPT multidimensional adjectives were selected on the basis of prior published papers. Similarly, the Experiencer-Theme and Agent-Patient verbs were selected based on Ambridge et al. 2015 and other published papers. This yielded 24 targets.

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| (1a) <i>First sentence</i> (Experiencer-Theme verb): | Lisa looked at Kate. OR |
| (1b) <i>First sentence</i> (Agent-Patient verb): | Lisa nudged Kate. |
| (2a) <i>Second sentence</i> (predicate of personal taste): | She was irritating. OR |
| (2b) <i>Second sentence</i> (non-PPT multidimensional adjective): | She was intelligent. |
| (3) Whose opinion is it that the other person is {irritating/intelligent}? | |
| Lisa / Kate / Narrator | |

For each narrative, participants were asked the question shown in (3), which is essentially asking ‘who is the judge’ for the PPT or multidimensional adjective.

Predictions: We assume that Experiencer-Theme verbs provide an easily-available experiencer argument – the subject, e.g. Lisa – whereas Agent-Patient verbs do not. Thus, if PPTs entail an experiencer judge and ‘regular’ (non-PPT) multidimensional adjectives do not, we predict that people’s interpretations of who the judge is should show sensitivity to verb type in the case of PPTs but *not* in the case of regular non-PPT multidimensional adjectives:

Specifically, if the presence of an experiencer verb in the preceding sentence renders its experiencer argument (the subject) especially well-suited for being the judge of a subsequent PPT, the rate of subject-opinion responses to question (3) should be higher with verbs like ‘look at’ (Experiencer-Theme verb) than with verbs like ‘nudge’ (Agent-Patient verb). In other words, with PPTs, the rate of subject-opinion answers should be higher in the ExpTheme_PPT condition than in the AgentPatient_PPT condition.

Crucially, we do *not* expect to find this asymmetry with non-experencer-entailing non-PPT multidimensional adjectives: If these adjectives do not involve experencer judges, then people’s answers to the judge question (3) should *not* depend on whether or not the preceding subject is an experencer. Thus, the ExpTheme_Multidimensional condition and the AgentPatient_Multidimensional condition are predicted to yield similar proportions of subject-opinion responses.

Results: As shown in the figure (below), the rate of subject-opinion responses is highest in the ExpTheme_PPT condition. Statistical analyses (lmer, using R) reveal a main effect of verb type ($p < .03$; more subject-opinion responses with Experencer-Theme verbs than Agent-Patient verbs), no main effect of adjective type, and crucially a significant verb-type by adjective-type interaction ($p < .001$). Indeed, planned comparisons confirm that (i) with **PPTs**, Experencer-Theme verbs result in a significantly higher rate of subject-opinion responses than Agent-Patient verbs ($p < .001$), but (ii) with non-PPT **multidimensional adjectives**, both verb types yield comparable rates of subject-opinion responses ($p > .6$, i.e. no significant difference).

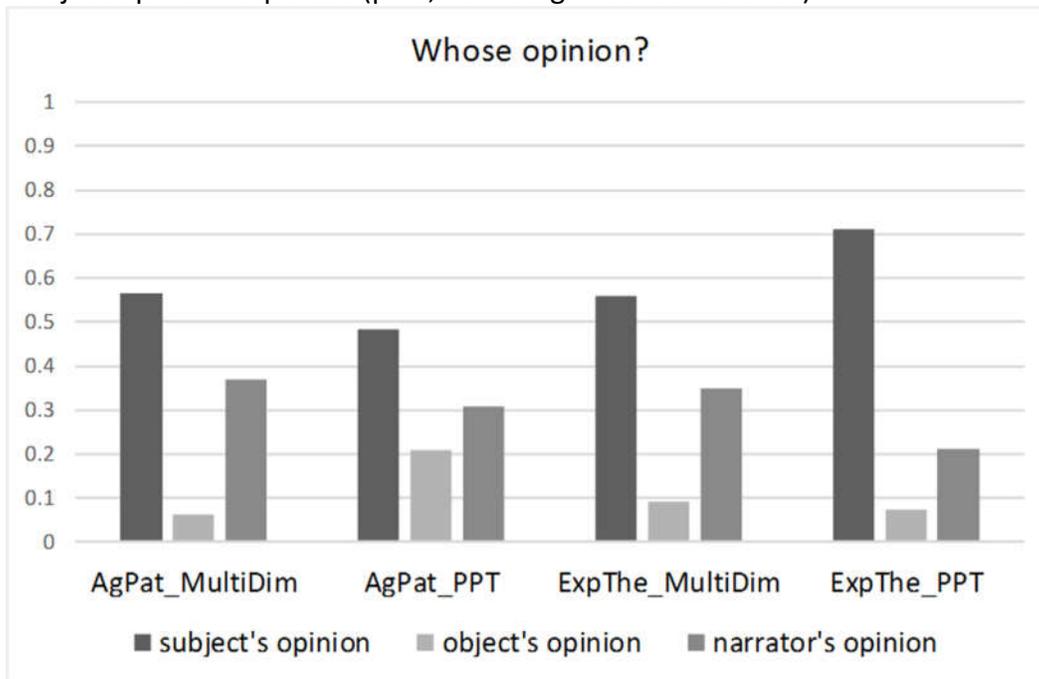


Figure 1. Proportion of subject, object and narrator responses to the ‘whose opinion’ question

Thus, the patterns with Experencer-Theme verbs show that in contexts where an experencer is available, it is indeed a highly preferred choice as the judge of PPTs (ExpThe_PPT condition in the figure). Additional analyses show that in conditions with Experience-Theme verbs, rate of subject-opinion responses is significantly lower with multidimensional adjectives than with PPTs (ExpThe_MultiDim vs. ExpThe_PPT, $p < .001$), indicating that multidimensional adjectives do not ‘seek out’ experencer judges as strongly as PPTs.

In sum, our results provide experimental support for the hypothesis that a key property of PPTs – but not regular multidimensional adjectives – is that they involve experencer judges. Although both involve consideration of a judge/evaluator from whose perspective the adjective is interpreted, our results suggest that comprehension of PPTs is additionally sensitive to the experencer dimension.

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