Deriving direct experience effects from adjectival lexical semantics

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Direct experience effects and taste predicates

- Adjectival predicates of personal taste (PPTs) \[\text{tasty, fun}\] give rise to implications of direct experience:

- modified by \textit{dativus iudicantis} PPs (DI PPs);

\(1\) The soup is tasty \{to / ?for\} Alfonse.

- embedded in small clauses beneath the subjective attitude verb \textit{find}.

\(2\) Alfonse finds the soup tasty.

\[\rightarrow \text{Alfonse has tasted the soup.}\]
Direct experience effects and taste predicates

- These implications are presuppositional (Pearson 2013, Hirvonen 2014):
  - they escape classical holes,

(3) Alfonse doesn’t find the soup tasty.

(4) Alfonse probably finds the soup tasty.

→ Alfonse has tasted the soup.

- but are cancellable beneath external negation and locally accommodable.

(5) Alfonse doesn’t find the soup tasty, because he hasn’t tried it.

→ Alfonse has tasted the soup.

(6) If Alfonse finds the soup tasty, he’ll have some in the fridge.

→ If Alfonse has tasted the soup and finds it tasty…
Direct experience effects and taste predicates

- This distinguishes direct experience effects from speaker-oriented ‘acquaintance inferences:’

(7) **ALFONSE:** The soup is tasty.

→ Alfonse has tasted the soup.

- which e.g. are voided by predictive expressions (Klecha 2014), and can’t be cancelled (Ninan 2014).

(8) **ALFONSE:** The soup will be tasty. (Too bad I’ll never get to try it.)

→ Alfonse has {has tasted / will taste} the soup.

(9) **ALFONSE:** ?The soup isn’t tasty, because I haven’t tried it.
Direct experience effects and taste predicates

• These effects therefore arise from the interaction of the DI PP / find with the PPT, not from the PPT alone.

• The lexical semantics of the PPT also determine what sort of direct experience is relevant, as it can be sensitive to sensory modality (for tasty, taste).

• **The goal:** Derive the occurrence of direct experience effects from independently plausible accounts of the lexical semantics of adjectival PPTs and of find / DI PPs.
Previous attempts: direct stipulation of effects

• Stephenson (2007: 61, ex. 101) [cf. Hirvonen 2014]:

\[(10) \ [[\text{find}]^w = \lambda \ p. \ \lambda \ x. \ \forall w' \in \text{Dox}[x,w][p(w') = 1], \text{ and this is caused by } x \text{ having direct experience of } p \text{ in } w\]

• Pearson (2013: 122, ex. 45):

\[(11) \ [[\text{tasty}]^w = \lambda \ x. \ \lambda \ y: x \text{ has direct perceptual experience of the relevant kind of } y \text{ in } w. \ y \text{ is tasty to } x \text{ in } w\]
Previous attempts: direct stipulation of effects

• Hardwiring the presupposition into the PPT overgenerates presuppositions (as in bare assertions).

• Placing the presupposition in the attitude verb misses a generalization: the experience effects are due to the experiential semantics of the PPT (which must be related to find’s ‘selectional restrictions:’ Sæbø 2009).

• The analysis is unenlightening: we can instead show how experiential effects emerge with conservative, independently motivated lexical entries, and extend the effects to a wider range of cases.
A detour through deverbal -ing adjectives

• English has a robust class of adjectives formed by the suffix -ing from object-experiencer psych verbs, which are semantically close kin to classic PPTs:

(12) frightening, interesting, saddening, astonishing…

• They have a similar pragmatic profile, giving rise to ‘faultless disagreement’ (Kölbel 2004), and for apparently the same reasons (differing experiences among individuals).
A detour through deverbal -ing adjectives

• Further, they occur with DI PPs and beneath find, and in these contexts give rise to the same sorts of direct experience effects:

(13) Halloween is frightening to Alfonse.

(14) Alfonse finds Halloween frightening.

→ Alfonse has experienced Halloween.

• Their verbal counterparts also give rise to these effects with their internal arguments:

(15) Halloween frightens Alfonse.

• Note also that (13)-(15) seem to be synonymous.
A detour through deverbal -ing adjectives

- But -ing adjectives are more promising than classic PPTs for decompositional analysis, since they exist in a richer morphological environment, relating them both to object-experiencer psych verbs and nominals denoting ‘experiential kinds:’

<table>
<thead>
<tr>
<th>frightening</th>
<th>interesting</th>
<th>saddening</th>
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<td>fright</td>
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A detour through deverbal *-ing* adjectives

• This makes the move back from *-ing* adjectives to classic PPTs promising: the semantics of the former can be mapped to the latter.

• Further, the semantics of PPTs can be given their ‘experiential character,’ including the fact that they are a source of direct experience effects, by being explicitly tied to experiential kinds.
Compositional preliminaries

- Adopting the framework of Lasersohn (2005), all extensions are evaluated relative to a judge intensional parameter \( j \in D_e \).
- Adapting Kennedy (2007), extensions are evaluated relative to a ‘standard’ parameter \( s \), which decides cutoffs for vague predicates including relative adjectives via the introduction of the silent degree morpheme POS.

\[(16) \ [\alpha]_{j,s} = \ldots\]
Compositional preliminaries

- Dummy denotations for frightening, tasty, of type ed, application of POS resulting in a property:

\[(17) \quad \llbracket \text{frightening} \rrbracket_{j,s} = \lambda x. \delta_{\text{frightening}}(j)(x)\]

\[(18) \quad \llbracket \text{tasty} \rrbracket_{j,s} = \lambda x. \delta_{\text{tasty}}(j)(x)\]

\[(19) \quad \llbracket \text{POS} \rrbracket_{j,s} = \lambda G[_{\text{ed}}]. \lambda x. G(x) \geq S(G)\]

\[(20) \quad \llbracket \text{POS \ tasty} \rrbracket_{j,s} = \lambda x. \delta_{\text{tasty}}(j)(x) \geq S(\delta_{\text{tasty}}(j))\]
Experiential kind expressions

- Experiential kind nominals (*fright*) seem to be kind-denoting mass expressions. They participate in the classical Carlson (1977) generic vs. existential interpretations, with individual- and stage-level predicates:

  (21) Fright paralyzes a person.

  (22) Fright is paralyzing Alfonse.

- Ontological assumptions: (i) As with other mass-denoting kind nominals (*water*), there are subparts or ‘amounts’ of the kind; (ii) Amounts of experiential kinds can be ‘in’ experiencers.
Experiential kind expressions

- For any $x, y, k$: $x$ and $y$ have equivalent amounts of $k$ in them iff $x$ and $y$ are undergoing experiential episodes of the phenomenological character uniquely associated with $k$ of indistinguishable felt intensity.

(23) $[\text{fright}]_{j,s} = \text{FRIGHT}$
Object-experiencer psych verbs

- Object-experiencer psych verbs morphologically related to these experiential kind expressions (*frighten*) are gradable: they occur with degree morphology and in comparative constructions, and their degree can be *how much*-questioned:

(24) Halloween frightens Alfonse {a lot / more than it frightens Bethany}.

(25) How much does Halloween frighten Alfonse?

- On the present approach they should therefore denote transitive measure functions, type *e, ed*. 
Object-experiencer psych verbs

• The verbalizing suffix -en should then apply to fright, resulting in a transitive measure function mapping an experiencer and a source to a degree corresponding to the amount of the experiential kind FRIGHT that the latter ‘puts into’ the former.

• Where $\delta_k$ is the relevant function (type $e, ed$) as it relates to experiential kind $k$ (for simplicity, using $k$ as the type of experiential kinds):

(26) $\llbracket -\text{en} \rrbracket_{j,s} = \lambda k. \lambda x. \lambda y. \delta_k(x)(y)$

(27) $\llbracket \text{fright -en} \rrbracket_{j,s} = \lambda x. \lambda y. \delta_{\text{FRIGHT}}(x)(y)$
Object-experiencer psych verbs

(28) \[\text{[[fright -en] Alfonse]}_{j,s} = \lambda y. \delta_{\text{Fright}}(a)(y)\]

- (28) denotes a function from individuals to the degree of fright that individual ‘puts into’ Alfonse – where these degrees are ordered along a dimension so as to respect the ordering among ‘amounts’ of experiential kinds [a higher degree corresponds to a larger amount put into Alfonse].

- What it means to ‘put’ an amount of a kind ‘into’ an individual, crudely: to cause it to come about that that amount of that kind is in that individual, in a certain ‘direct’ way – most bluntly, by contact with its sense-receptors.
(Non-)existence of experiential degrees

• These denotations make crucial reference to model-theoretic objects like $\delta_{\text{FRIGHT}}(a)(x)$, for some $x$.

• But for any $x$, unless the above-outlined conditions are met (viz., $x$ puts some amount of fright into Alfonse), there will be no such degree: and if those conditions are met only when $x$ ‘directly’ puts the experiential kind into Alfonse, it follows that unless such ‘direct’ experiential contact is made, ‘$\delta_{\text{FRIGHT}}(a)(x)$’ will denote nothing.

• Semantic derivations referencing such non-existent objects will crash, resulting in presupposition failure in the classical Strawsonian sense (we can think of sensory contact between $x$ and Alfonse that doesn’t frighten Alfonse at all as imparting a ‘zero-degree’ of fright into him).
Composing deverbal -ing adjectives

• The adjectivalizing suffix -ing productively combines with object-experiencer psych verbs, intransitivizing them, and turning them into PPT-like expressions relating in some sense to matters of ‘experiential opinion.’

• Both these functions are achieved if -ing simply saturates the first individual argument of the verb with the judge:

\[(29) \quad [-\text{ing}]_{j,s} = \lambda \ H_{[e,ed]} \cdot \lambda \ x. H(j)(x)\]

\[(30) \quad [[[\text{fright} -\text{en}] -\text{ing}]]_{j,s} = \lambda \ x. \delta_{\text{fright}}(j)(x)\]
Composing deverbal -ing adjectives

- **frightening** thus denotes a function from individuals to the degree corresponding to the amount of fright that individual puts into the judge. It therefore will behave as a Lasersohnian PPT, and faultless disagreement effects et al. follow in whatever way the theory predicts them for PPTs.

- This also predicts that when an individual has not had the relevant direct experience of $x$, s/he will typically refuse to evaluate propositions expressed by sentences such as $x$ is frightening auto-centrically, to avoid presupposition failure.
Deriving the direct experience effects

- Direct experience effects now follow straightforwardly for object-experiencer psych verb constructions, which will presuppose experiential contact of the relevant sort between source and experiencer-object: here, this is due to the presence of $\delta_{\text{FRIGHT}}(a)(h)$.

\[(31) \ [\text{POS } [[\text{fright -en} \ Alfonse]]]^{j,s} = \]
\[\lambda x. \delta_{\text{FRIGHT}}(a)(x) \geq s(\delta_{\text{FRIGHT}}(a))\]

\[(32) \ [\text{Halloween [POS } [[\text{fright -en} \ Alfonse]]]]^{j,s} = \]
\[\delta_{\text{FRIGHT}}(a)(h) \geq s(\delta_{\text{FRIGHT}}(a))\]
Deriving the direct experience effects

- These presuppositions will be preserved under holes like negation, as desired, since polarity doesn’t affect reference to the possibly non-existent degree:

\[(33) \quad \left[ \text{NEG} \left[ \text{Halloween} \left[ \text{POS} \left[ \text{[fright -en] Alfonse}] \right] \right] \right] \right]_{i,s} = \]

\[\delta_{\text{FRIGHT}}(a)(h) \nleq s(\delta_{\text{FRIGHT}}(a))\]
Deriving the direct experience effects

- The effects can now be derived for the DI PP and **find** constructions by adopting conservative proposals for the involved expressions already proposed in the literature (Lasersohn 2005, Sæbø 2009, MacFarlane 2014):

\[(34) \text{[[to]]}^{j,s} = \lambda x. \lambda P_{[j,et]}. \lambda y. P(x)(y)\]

\[(35) \text{[[find]]}^{j,s} = \lambda p_{[jt]}. \lambda x. p(x)\]

- Thus, to and find are both ‘judge-shifters’ that cause a property or a proposition, respectively, to be evaluated relative to the object of the preposition or the subject of the attitude, respectively, as judge (for perspicuity, where there is an intensional argument, \(j\) is written for the type of the variable, to signify the judge, though this is just type \(e\)).
Deriving the direct experience effects

- For the DI PPs:

\[(36) \ \langle \text{to Alfonse} \rangle_{j,s} = \lambda \ P_{[j,\text{et}]} \cdot \lambda \ y. \ P(a)(y) \]

\[(37) \ \langle \text{POS [fright -en] -ing} \rangle_{j,s} = \lambda \ x. \ \delta_{\text{FRIGHT}}(j)(x) \geq \ s(\delta_{\text{FRIGHT}}(j)) \]

\[(38) \ \langle \text{^[POS [fright -en] -ing] [to Alfonse]} \rangle_{j,s} = \lambda \ y. \ \delta_{\text{FRIGHT}}(a)(y) \geq \ s(\delta_{\text{FRIGHT}}(a)) \]

\[(39) \ \langle \text{Halloween [^[POS [fright -en] -ing] [to Alfonse]} \rangle_{j,s} = \delta_{\text{FRIGHT}}(a)(h) \geq \ s(\delta_{\text{FRIGHT}}(a)) \]
Deriving the direct experience effects

• For **find**:

\[
(40) \quad \left[\text{Halloween [POS [fright -en] -ing]}\right]_j^s = \\
\delta_{\text{FRIGHT}}(j)(h) \geq s(\delta_{\text{FRIGHT}}(j))
\]

\[
(41) \quad \left[\text{find } ^{\text{Halloween [POS [fright -en] -ing]}}\right]_j^s = \\
\lambda x. \delta_{\text{FRIGHT}}(x)(h) \geq s(\delta_{\text{FRIGHT}}(x))
\]

\[
(42) \quad \left[\text{Alfonse } ^{\text{find } ^{\text{Halloween [POS [fright -en] -ing]}}}\right]_j^s = \\
\delta_{\text{FRIGHT}}(a)(h) \geq s(\delta_{\text{FRIGHT}}(a))
\]
Deriving the direct experience effects

- Two things worth noting: (i) as desired, the object-experiencer psych verb, DI PP, and **find** constructions all turn out synonymous, and enforce direct experience presuppositions in the same way.

- (ii) Because the circumstances under which experiential kinds can be placed into individuals may differ depending on both the kind and the source, the present approach in principle allows for extremely fine-grained distinctions in what sorts of ‘direct experience’ are relevant to satisfy the presupposition (sensitive to sensory modality, etc.)
Revisiting the classic PPTs

• Recasting the semantics of PPTs more generally, the account applies straightforwardly to \texttt{fun} (\texttt{FUN} being an experiential kind denoted by the nominal \texttt{fun}): 

\begin{equation}
\lambda \, x. \delta_{\texttt{FUN}(j)}(x)
\end{equation}

(43) \[ \llbracket \texttt{fun} \rrbracket_{j,s} = \lambda \, x. \delta_{\texttt{FUN}(j)}(x) \]

• The conditions under which fun can be put into \( j \) (‘had by \( j \)’) will presumably involve participation in \( x \) (where \texttt{fun} is a predicate of events).
Revisiting the classic PPTs

• The modality-sensitivity of *tasty* can be understood if it is understood to predicate of tastes, in the sense of the relational noun *taste*:

\[(44) \text{Alfonse likes \{the soup's taste / the taste of the soup\}}\]

\[(45) [[\text{taste}]]_{j,s} = \lambda x. \lambda y. \text{taste'}(x)(y)\]

• The relevant experiential kind might then be, e.g. PLEASURE.
Revisiting the classic PPTs

(46) \([-y\)]_{j,s} = \lambda \ R_{[e,et]}. \lambda \times. \delta_{\text{PLEASURE}}(j)(1y[R(x)(y)])

(47) \([\text{taste} -y\)]_{j,s} = \lambda \times. \delta_{\text{PLEASURE}}(j)(1y[\text{taste}'(x)(y)])

• Plausibly, the only way for an individual’s taste to impart pleasure into an experiencer is for the experiencer to taste said object, yielding the correct presupposition.
Some closing thoughts

- This dependence of the nature of the direct experience effect on the semantics of the adjective allows in principle for a wider accommodation of find-embeddable adjectives, some of which may not presuppose direct experience in the same ‘gross’ way (being implanted with an amount of some experiential kind).

(48) Alfonse finds it unlikely that the soup will be tasty.

(49) Alfonse finds keeping the soup down easy.

- There seems to be no experiential kind, or one sort of direct experience at all, that Alfonse is presupposed to have to meet the presuppositional requirements of these sentences.

- Nonetheless, there is some sort of ‘experiential’ requirement: in (48), Alfonse must have considered the proposition and ‘felt’ it unlikely as a result, and in (49), Alfonse must have tried to keep the soup down.

- We have a path forward to explain these fine-grained differences, if judge-dependence requires consideration or interaction of some sort generally, but only adjectives making reference to experiential kinds in their denotations behave as tasty, etc.
References


