1 Experiential semantics I: deverbal psych predicates and experiential kinds

Chapter 1 offered a treatment of experiential predicates according to which their denotations are not relativized to an experiencer. Nevertheless, experiential predicates do have denotations that make reference to experiences in a way that distinguishes them from non-experiential predicates. The present chapter, and Chapter 3, provide an account of the semantics of experiential predicates, spell out what exactly makes them experiential, and elucidate what their relationship to experiencers is.

Experiential predicates form a semantic natural kind: roughly, they are those predicates that denote a property true of an individual just in case that individual is disposed to produce an experience of the relevant sort – simpliciter, and not in any particular experiencer or other. There are a host of lexical and phrasal compositional processes that make it perfectly predictable whether certain predicates are experiential, and in what way.

The subject of this chapter is a large group of adjectives in English, termed here ‘deverbal psych predicates,’ which are formed regularly when the suffix -ing composes with object-experiencer psych verbs. Adjectives in this category include e.g. stunning, frightening, interesting, confusing, and horrifying. Providing a compositional account of these results in a templatic semantics for experiential predicates generally, which can be retrojected onto other apparently experiential predicates that exist simplex in the lexicon.

That deverbal psych predicates ought rightly to be considered experiential is shown by the fact that they have all the crucial features of experiential predicates outlined in Chapter 1, and the interested reader can run them through all the arguments presented there to confirm that they apply equally to them in all cases. To illustrate and recap, using the exemplar frightening: deverbal psych predicates occur with to-headed PPs acting as overt experiencers (1-a), and in predicate position embedded beneath find (1-b), and in each case a presupposition of direct experience relevant to the predicate is enforced.

(1)  
   a. The movie is frightening to Alfonse.
   b. Alfonse finds the movie frightening.
   ↪ Alfonse has experienced fear of the movie.
They further exhibit no implications of direct experience when embedded in a wide variety of intensional contexts (cf. §??; see fn. ?? on addressee-directed presuppositions involved in direct questions like (2-c), and read (2-e) as said of a movie still in production).

(2)  a. The movie must be frightening.
    b. If the movie is frightening, he shouldn’t watch it.
    c. Is the movie frightening?
    d. I wonder whether the movie is frightening.
    e. The movie will be frightening.
    f. Alfonse believes that the movie is frightening.

They also give rise to exocentric readings, evaluated with respect to a contextually anchored experiencer ((3-a)-(3-b), reading (3-b) as being uttered while the speaker is looking at Alfonse, who is clearly terrified, watching a movie), and these experiencers can be bound by local quantifiers ((3-c), whose interpretation is, ‘Every $x$ saw a movie frightening to $x$’).

(3)  a. Alfonse saw a movie in the theater. It was frightening.
    b. The movie is frightening.
    c. Everyone saw a frightening movie.

And they give rise (when read non-exocentrically) to speaker-oriented acquaintance inferences (cf. §??), which enforce non-presuppositional constraints on what experiences the speaker has had of the subject of predication, which mirror the content of the direct experience presuppositions illustrated above.

(4)  The movie is frightening.

$\rightarrow$ The speaker has experienced fear of the movie.

Finally, speakers tend to evaluate these predicates using their own experiential reactions, or dispositions to react, as outlined in §??, and so evaluate them by default autocentrically (again, where they are not read exocentrically), and the assessment of the truth of experiential propositions based on one’s own experiences is tracked as expected by the behavior of truth-sensitive and belief-sensitive lexical items, like factives and verbs of agreement (cf. §§??-??).

What makes English deverbal psych predicates especially worth studying is that they exist in a rich morphological domain, where they interact with object-experiencer psych verbs (e.g. *frighten*), nouns denoting ‘experiential kinds’ (e.g. *fright*), adjectival passives (e.g. *be frightened*), and various other nominals (e.g. *a fright*). The way these predicates are treated is therefore constrained by the way these related expressions are treated, and the compositional relations that hold between all of them.

Most important for present purposes is the relationship between experiential kind terms, object-experiencer psych verbs, and deverbal psych adjectives. The morphological relatedness of these expressions is obvious, and comes in various superficial forms.
Some deverbal psych predicates have no corresponding experiential kind term (Type I); others are associated with an object-experiencer psych verb that relates morphologically to a corresponding kind term, with either the verb being apparently more complex (Type II), the verb and noun being identical (Type III), the noun being apparently more complex (Type IV), or the verb and the noun apparently sharing a root (Type V). The behavior of -ing is highly regular, and virtually every object-experiencer psych verb in English can take it as a suffix, with the same semantic effect.\(^1\)

What follows in this chapter examines this regular route to experiential predicates, beginning with experiential kind terms in §1.1, moving on to object-experiencer psych verbs in §1.2, and ending with the treatment of deverbal psych predicates, and so experiential predicates generally in §1.3.

### 1.1 Experiential kind terms

By ‘experiential kind term’ is meant a noun that denotes a ‘kind’ of experience that it is possible for an experiencer to undergo. The class of these expressions is enormous, with little morphological homogeneity. Below a sample of twenty-five of these nouns, to which the present treatment is taken to apply.

(6) **Experiential kind terms:**

amazement, anger, astonishment, bewilderment, cold, concern, confusion, consternation, delight, displeasure, fear, fright, hate, horror, hunger, interest, love, pain, pleasure, puzzlement, resentment, satisfaction, shock, stupor, terror

Some of these are signaled by abstract nominalizers like -ment and -or; others are diagnosed by their relation to a psych verb, either subject-experiencer (e.g. hate / hate) or object-experiencer (e.g. pleasure / please). Still others (e.g. consternation) participate in no relevant morphological relations to other expressions. For present purposes, the most crucial of these terms are those that have a corresponding object-experiencer psych verb.

§1.1.1 explores the formal properties of experiential kind terms, treating them as abstract mass nouns that denote portions of experience. §1.1.2 then establishes how these relate to experiential states pertaining to a kind, and how these in turn relate to experiential episodes of the phenomenological character associated with that kind.

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\(^1\)Where there are apparent exceptions to this pattern, there is always an adjective of distinct form with a meaning identical to that which -ing would have produced: thus, *delighting* is preempted by *delightful*, *scaring* by *scary*, *awing* by *awesome*. It can thus either be maintained that -ing is regular in the domain of object-experiencer psych verbs except where lexically blocked by an irregular deverbal form, or that it is indeed perfectly regular, but the suffix has an idiosyncratic morphophonological realization on these verbs.
1.1.1 Formal properties

Experiential kind terms have three core properties that any treatment of them must take account of. First, they can be associated with stimuli, or individuals ‘at whom’ experience is directed. Many kind terms are inherently capable of such direction, and encode this by idiosyncratically selecting for PPs denoting a stimulus.

(7) a. fear of spiders
    b. displeasure with the proceedings
    c. interest in mathematics
    d. shock at the news

Whether such a PP is available, and which preposition must head it, is apparently lexically idiosyncratic, and preserved in morphologically related constructions. Thus the appearance of the stimulus-phrase is apparently not semantically-governed (compare (8) with (7-a); some kind terms allow multiple prepositional heads (9); and adjectival passives tend to preserve the lexical properties of their associated kind terms (compare (10) with (8)).

(8) *fright of spiders
(9) anger {with / at} Alfonse
(10) angry {with / at} Alfonse

The stimulus relation can be described using the term ‘stim’; which is dyadic relative to worlds: ‘stim*(w)(x)(y)’ is to be read, ‘x is the stimulus of y at w,’ where the term is defined only if y is an experience.

Second, experiential kind terms can be associated with experiencers, or whose individuals ‘in whom’ they reside, and who undergo experiences as a result of this. Experiencers are encoded by the genitive relation, e.g. via the Saxon genitive.

(11) a. Alfonse anger (at Bethany)
    b. Bethany’s fear (of spiders)

The experiencer relation can be described using the term ‘exp’; also dyadic relative to worlds: ‘exp*(w)(x)(y)’ is to be read, ‘x is the experiencer of y at w,’ where again the term is defined only if y is an experience.

What these two relations amount to will be elucidated in what follows. One crucial feature must hold between them: where an experience has a stimulus, it must also have an experiencer, as it is impossible for an experience to be stimulated but not experienced.\(^2\)

(12) If stim*(w)(x)(y), then there is a z such that exp*(w)(z)(y).

\(^2\)Other possible restrictions on these relations are not enforced. For instance, there is no guarantee that an experience is stimulated or experienced at any given world: this is because counterfactual reasoning may pertain to experiences that are not actually being experienced or stimulated. Further, it may be possible that an experience has an experiencer at a world, but no stimulus at that same world: this allows for coherent denotations for one reading of phrases like anger at nothing, and leave open the possibility of experiential kinds that are not inherently directable, i.e. those that are classically thought to be able to occur ‘non-intentionally,’ like that denoted by pain (as opposed to displeasure: cf. (7-b)).
The third crucial feature of experiential kind terms is that they are mass nouns, as diagnosed by the usual tests. Unlike (uncoerced) count nouns, they occur with mass-sensitive determiners (13); with partitives (14); and with quantity questions (15).

(13) a. \{little / much / no\} \{anger / pleasure / shock\}
   b. ?\{little / much / no\} \{dog / phone / building\}

(14) a. a \{lot / bit / ton\} of \{terror / pain / satisfaction\}
   b. ?a \{lot / bit / ton\} of \{party / dream / book\}

(15) a. How much \{interest / awe / bewilderment\} did Alfonse experience?
   b. ?How much \{horse / car / cloud\} did Alfonse see?

They are also typically strange with atomic-sensitive determiners, like \(a(n)\) and \(\text{every}\). In (16), the only felicitous interpretation is that the noun refers to a certain kind of anger.

(16) a. ?angers
   b. ?an anger
   c. ?every anger

Where there are apparent exceptions to this generalization, the experiential kind term tends to take on an alternate denotation. Thus the nouns in (17-a) refer to individuals that tend to produce horror, not to horror itself (and so these nouns are experiential predicates in their own right). And those in (17-b) (as in, \(\text{Alfonse received a shock}\)) have an eventive interpretation, and refer to countable experiential episodes of shock, not the experiential kind (cf. §1.1.2).

(17) a. horrors, a horror, every horror
   b. shocks, a shock, every shock

As with other mass nouns, experiential kind terms can thus be taken to denote the property of being a ‘portion’ of a certain kind: just as \(\text{water}\) denotes the property of being a portion water, \(\text{interest}\) denotes the property of being a portion of interest, and so on.

So let there be a range of experiential kinds \(k\), denoted in the metalanguage by terms in small caps, including \(\text{FEAR, CONFUSION, INTEREST, SHOCK, etc.}\) The denotations of experiential kind terms are then schematic, as below, where e.g. \(\text{fear}'(x)\) iff \(x\) is a portion of fear, the kind denoted in the metalanguage by ‘\(\text{FEAR}‘^3\).

\[
\begin{align*}
(18) \quad \text{a. } & \text{fright}^w = \lambda x_e. \text{fear}'(x) \\
      \text{b. } & \text{shock}^w = \lambda x_e. \text{shock}'(x) \\
      \text{c. } & \text{interest}^w = \lambda x_e. \text{interest}'(x)
\end{align*}
\]

For simplicity, these terms are taken to lack internal arguments, of the sort that might be encoded by e.g. of \(\text{spiders}\): a full treatment ought to incorporate these as well, to account

\[\text{For simplicity, this ‘portion-of’ property is taken to be world-invariant: thus, a portion of } k \text{ is necessarily such a portion. As with many mass nouns, experiential kind terms in argument position with a null determiner seem to denote the kind itself, rather than the property of being a portion of this kind: thus, } \text{Fear is a powerful emotion}, \text{ where } [\emptyset \text{fear}]^w = \text{FEAR}, \text{ or some such. The text won’t address these constructions, but presumably the treatment of mass nouns denoting kinds should generalize here.}\]
for their lexical idiosyncrasy and to describe how they are preserved in other constructions, e.g. with adjectival passives (afraid of spiders).

Experiences can then be construed as individuals, of type $e$, that are mereologically structured like the individuals to which the denotations of typical mass nouns apply. Following Link (1983: 130), let the domain of individuals $D_e$ be closed under the binary operation $\oplus$, where '$x \oplus y$' is to be read, 'the individual sum of $x$ and $y$,' and denotes that individual comprised of $x$ and $y$, and only these, as mereological parts. $\oplus$ has the usual properties of commutativity, associativity, and idempotence, and forms a complete join-subsemilattice of the set of atomic individuals (those without mereological parts) of $D_e$.

A binary 'individual part' relation $\sqsubseteq$ can then be defined as follows (cf. ibid. 130-131), where '$x \sqsubseteq y$' is to be read, '$x$ is a mereological part of $y$'.

\[(19)\quad x \sqsubseteq y \iff \text{def} \quad x \oplus y = y.\]

The predicates in (18) can then allow for cumulative and divisive reference with respect to experiential kinds: for any two individuals that are a portion of an experiential kind, their mereological sum is a portion of that kind; and for any individual that is a portion of an experiential kind, all of its mereological parts are portions of that kind as well.

\[(20)\quad \text{Where } P(x) \text{ iff } x \text{ is a portion of experiential kind } k,
\begin{itemize}
  \item a. \quad P(y) \text{ and } P(z) \text{ iff } P(y \oplus z).
\end{itemize}\]

For convenience, it can also be stipulated that experiential kinds are disjoint, such that for any distinct $P, P'$ that denote the property of being portions of distinct experiential kinds $k, k'$, there is no $x$ such that $P(x)$ and $P'(x)$.

Finally, a mereological maximal operator $\sigma$ can be introduced (cf. ibid. 131, ex. 17), that picks out the maximal individual according to some condition. It is defined as follows, where $\phi$ is a metavariable over formulae, and '$\phi[y \to x]$' denotes the value of $\phi$ on an assignment of the individual $y$ to all free occurrences of the individual variable 'x.'

\[(21)\quad \sigma x[\phi] := \text{that unique individual } y \text{ such that:}
\begin{itemize}
  \item a. \quad \phi[y \to x];
  \item b. \quad \text{For no } z \sqsubseteq y, \phi[z \to x].
\end{itemize}\]

In other words, $\sigma x[\phi]$ is the unique mereologically maximal individual such that $\phi$. With this machinery in place, experiences that are portions of certain kinds, and which have certain stimuli and experiencers, can be denoted using type-$e$ expressions. For example, the composition of Alfonse's fear of spiders runs as follows, for simplicity taking of spiders to be a modifier, in line with the caveat above, and taking the genitive to act as a maximizing definite descriptor.

\[(22)\quad \begin{align*}
  \text{a. } [\text{of}]^w &= \lambda x.e. \lambda P.e. \lambda y.e. P(y) \land \text{stim}''(w)(x)(y) \\
  \text{b. } [\text{of spiders}]^w &= [\text{of}]^w([\text{spiders}]^w) \\
  &= \lambda P.e. \lambda y.e. P(y) \land \text{stim}''(w)(\text{SPIDER})(y) \\
  \text{c. } [\text{fear of spiders}]^w &= [\text{of spiders}]^w([\text{fear}]^w) \\
  &= \lambda y.e. \text{fear}'(y) \land \text{stim}''(w)(\text{SPIDER})(y) \\
  \text{d. } [-'s]^w &= \lambda x.e. \lambda P.e. \sigma y[P(y) \land \text{exp}''(w)(x)(y)]
\end{align*}\]
Thus, _Alfonse’s fear of spiders_ denotes the mereologically maximal individual that is a portion of the kind \textit{FEAR}, which is stimulated by the kind \textit{SPIDER}, and which is experienced by Alfonse.

Experiential kind terms further denote portions of ‘qualities,’ in the sense of Francez & Koontz-Garboden (2017). This can be seen from the fact that they occur in a range of constructions that other abstract mass nouns denoting qualities do, but that concrete mass nouns do not (cf. \textit{ibid.} §6.2 for these and related diagnostics). They occur with \textit{what}-questions, both exclamatives and questions, that target the size of a portion (23); with modifiers targeting an upper end of a size ordering (24); with modifiers of large size, like \textit{great} (25); and with verbs of changing size, like \textit{grow} (26).

(23) a. What \{excitement / amazement\} Alfonse felt!
   b. I didn’t realize what \{excitement / amazement\} Alfonse felt.
   c. ?What \{snow / water\} Alfonse saw!
   d. ?I didn’t realize what \{snow / water\} Alfonse saw.

(24) a. \{utter / complete / absolute / outright\} \{horror / astonishment\}
   b. ?\{utter / complete / absolute / outright\} \{sand / chalk\}

(25) a. great \{puzzlement / confusion\}
   b. ?great \{iron / gold\}

(26) a. Alfonse’s \{anger / grief\} grew.
   b. ?Alfonse’s \{tea / sauce\} grew.

Francez & Koontz-Garboden propose that it is distinctive of nouns denoting abstract qualities, as opposed to concrete mass nouns, that their lexical entries encode an inherent size ordering, which these expressions are capable of targeting. Experiential kind terms apparently fall into this category.

To capture this, a ‘size’ ranking on qualities relative to a kind \( k \), \( \preceq_k \), is introduced, where \( x \preceq_k y \) is to be read, ‘\( x \) is at least as small as \( y \) with respect to \( k \).’ This ranking preorders individuals according to how ‘big’ of an experience of a certain kind they comprise. The lack of antisymmetry on the preordering allows ‘ties’ among individuals, which are distinct but nevertheless of the exact same size, e.g. when Alfonse’s fear is just as much as Bethany’s, but nonetheless \textit{Alfonse’s fear} and \textit{Bethany’s fear} are not coreferential.

(27) \( \preceq_k \) is a total preorder on \( D_k \) such that:
   (i) If for no \( y \subseteq x \), \( y \) is a portion of \( k \): \( x \) is a minimal element according to \( \preceq_k \);
   (ii) \( \preceq_k \) preserves \( \subseteq \): if \( x \subseteq y \), then \( x \preceq_k y \).

The preorder on qualities is constrained in two ways. (i) says that any individual that is composed of no part that is a portion of kind \( k \) (that is, which has no such part as a mereological constituent) is minimally ranked by the preorder. And so an individual that contains no portion of a kind at all is as small as possible with respect to the ‘size’ of that kind – it follows trivially that any individual that is not an experience, or has no experience
as a mereological part, is so minimally ranked. (ii) says that an individual is always at least as big according to the size preorder as all of its mereological parts (cf. Francez & Koontz-Garboden *ibid.*: 39, B).

These two conditions do not determine a unique total preorder on the domain of individuals. This is as it should be, since such a preorder cannot be deduced from the formal properties of experiences alone. Further decisions must be made as to how to ‘rank’ individuals according to ‘how big’ a portion of experience is. This might have to do, among other things, with the intensity of experiential episodes produced in an experiencer, their frequency, the effort required in triggering them, the extent to which they approximate ‘canonical’ experiences of the kind phenomenologically, and so on. These matters are likely not linguistically encoded at all, and different speakers will have different opinions as to how exactly the preorder functions – and in many cases, it may be left indeterminate or even inconsistent according to changing communicative needs.

This allows for a way to capture truth conditions comparing sizes of experiences, as with *Alfonse’s fear of spiders is greater than Bethany’s*. But an incorporation of these kinds of comparative and degree constructions requires a treatment of degrees constructed out of this preorder: cf. §1.2.2.

There are two extant metaphors that receive a lot of use cross-linguistically in encoding the relation between experiencers and experiences, using experiential kind terms. The first is locative: portions of these kinds are said to be located ‘in/on/at’ individuals, as in Irish (28). The second is possessive: individuals are said to ‘have’ portions of these kinds, as in the familiar range of limited Romance and Germanic examples, e.g. in Spanish (29).

(28) Tá eagla orm.
*is fear on-me*
‘I am afraid.’ [lit. ‘Fear is on me.’]
[Irish. McCloskey & Sells (1988: 182, ex. 78a)]

(29) Tengo miedo.
*have.1SG.PRES fear*
‘I am afraid.’ [lit. ‘I have fear.’]
[Spanish.]

These metaphors can be employed more or less grammatically: where not grammaticized, they often appear in a number of unsystematic periphrastic constructions. The present treatment will assume that both encode the very same relation, and that this is the same relation encoded by *exp''. Thus ‘*exp''*(w)(x)(y)’ can also equally be read, ‘y is in x at w’ or ‘x has y at w,’ where its definedness conditions require that x be an experience. The genitive

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4 For Landau (2010a), these locative constructions are telling, and he takes many experiencers acting as objects of psych verbs also to be syntactically locative: they are oblique, and undergo locative inversion. The invocation of these spatial metaphors in the text shouldn’t be taken to endorse these stronger syntactic claims. A second, rarer sort of locative metaphor, discussed e.g. in Arad (1998: 228), has the experiencer located in a portion of the experiential kind, rather than vice-versa: thus, *Alfonse is in (love / shock).* The text won’t address this, or whether it’s semantically important, but it ultimately ought not to be ignored.

5 Given that experiential kinds are qualities in Francez & Koontz-Garboden (2017)’s sense, these possessive metaphors ought not to be surprising, since they demonstrate that cross-linguistically, relation of individuals to their qualities is often encoded using possessive morphology.
relation therefore defaults to \( \text{exp}'' \) where experiences are concerned, as in (22-d).

As to the relations between stimuli and experiences, these are typically encoded using some directional metaphor (30) or relational marker (31).

(30) \[ Tá \text{ eagla roimh Y ar X.} \]

\textit{is fear before Y on X.}

‘X is afraid of Y.’ [lit. ‘There is fear before Y on X.’]

[Irish. McCloskey & Sells (1988: 181, ex. 77a)]

(31) \[ Tengo \text{ miedo de morir.} \]

\textit{have.1sg.pres fear of die}

‘I am afraid of dying.’ [lit. ‘I have fear of dying.’]

[Spanish.]

While the directional metaphors vary, they often pertain to a portion of an experiential kind being ‘aimed at’ its stimulus (cf. the other examples in McCloskey & Sells 1988: 181 ff.). As such, \( \text{stim}''(w)(x)(y) \) can also equally be read, ‘\( y \) is directed at \( x \) at \( w \)’ or ‘\( y \) pertains to \( x \) at \( w \).’

With the core notions of experiences as individuals that (i) are possibly portions of experiential kinds, (ii) are pre-ordered according to size relative to these kinds, (iii) are possibly associated with experiencers, and (iv) are possibly associated with stimuli, with this entailing association with an experiencer, a working ontology is in place that can be used to describe the existence of experiences in experiencers. The relations \( \text{exp}'' \) and \( \text{stim}'' \), which describe the properties of these experiences, may be thought of as encoding eventualities, and in particular experiential states. Thus, to say that \( \text{stim}''(w)(x)(y) \) and \( \text{exp}''(w)(z)(y) \), where \( \text{fear}''(y) \), is to say that there is an eventuality, which is a spatial state, and it consists of \( y \), which is a portion of fear, being located in \( z \) and directed at \( x \).

§1.1.2 clarifies what the existence of such a state entails.

1.1.2 Experiential states and episodes

In the following, much hinges on how being in an experiential state, as described in §[]], is characterized, and in particular on how being in such a state relates to undergoing ‘experiential episodes.’ These latter are events during which the experiencer actually feels something with the phenomenological character of the relevant kind: the conscious (or at least sentient) undergoing of fear, shock, confusion, etc.

The most obvious way to relate experiential states and episodes is to equate them. Where

\[ \text{These directional metaphors seem to be reflected in directional modifiers that nouns denoting experiences can take, unlike nouns denoting entities with no inherent direction: thus, anger towards Alfonse may denote anger stimulated by Alfonse, while ‘dog towards Alfonse is strange. The relation denoted by towards may therefore default to stim’' in the case of experiencers. Nouns denting some experiential kinds, like pain, apparently are degraded with such modifiers, suggesting again that not all experiencers require a stimulus.} \]

\[ \text{The text takes for granted that the crucial feature of these episodes is phenomenological, and does not touch on broader issues about whether and to what extent experiential episodes are to be characterized in terms of their functional role, or by some other criterion. The semantics will be the same, regardless of how the distinction between ‘being in an experiential state’ and ‘having an experiential episode’ is cashed out precisely: what matters is that the distinction preserves at least the properties described in the text.} \]
there is an $x$ such that $\text{stim}''(w)(y)(x)$ and $\text{exp}''(w)(z)(x)$, this means that $x$ is that experience stimulated by $y$ and experienced by $z$ at $w$, and this can be taken to mean the same as that $z$ is actually undergoing the relevant felt experience at $w$. But this isn’t right, since none of the expressions morphologically related to an experiential kind term enforce this requirement. All of the sentences in (32) assert, or presuppose, that Alfonse is in an experiential state of interest, directed at linguistics.

(32) a. Bethany knows about Alfonse’s interest in linguistics.
    b. Linguistics is an interest of Alfonse’s.
    c. Alfonse is interested in linguistics.
    d. Linguistics interests Alfonse.
    e. Linguistics is interesting to Alfonse.

But none of them, either with a genitive denoting his experience (32-a), an experiential nominal (32-b), an adjectival passive (32-c), an object-experiencer psych verb (32-d), or a deverbal psych adjective (32-e), require for their truth or definedness conditions that Alfonse actually be undergoing the experience associated with his interest as the time of utterance. They can all be truthful reports, for example, even while Alfonse is asleep, and not consciously directing his interest at anything.

But Alfonse must be disposed in the right way to have experiential episodes of the phenomenological character associated with INTEREST, and directed at linguistics, for these reports to be true. What conditions must occasion these episodes is difficult to articulate, but roughly they must be those in which Alfonse’s experiential faculties are suitably focused on linguistics – if Alfonse generally feels interest whose phenomenological ‘target’ is linguistics in such conditions, then the reports come out true.\(^8\)

It is irrelevant to the truth of a report of an experiential state whether this generic disposition (which will be subject to the usual constraints on genericity: cf. §1.3.1) is actualized at the time of the report. In this sense, the linguistic encoding of experiential states is much like that of other psychological states: e.g., Alfonse has a belief in a proposition just in case he is disposed to treat that proposition as true, regardless of whether he is presently actualizing that disposition (again, reports of Alfonse’s beliefs can be true even while he is asleep).

Nevertheless, this generic disposition is not sufficient for an experiential state to obtain: it must also be occasioned by an actual experiential episode. Thus, none of the reports in (32) can be true where Alfonse has never actually felt interest in linguistics: it does not suffice that he would feel such interest, if he considered it. This point can be made vividly by the definedness conditions of genitives denoting experiences as in §[2]: Alfonse’s fear of heights denotes nothing unless Alfonse has actually experienced heights (at least in his imagination), and this has resulted in an experiential episode of fear. Prior to having such an episode, this

\(^8\)For an experiencer’s ‘experiential faculties’ to be ‘focused’ on an individual does not entail that the experiencer is presented with the individual ‘in the flesh,’ or in causal contact with it: imagination of it, remembrance of it, etc. often suffices. This is especially important with abstract objects like ‘linguistics,’ as well as non-existent things, which one may nonetheless fear, etc. (cf. §1.2.1). Of course, being in causal contact with something may be a perfect occasion for having these faculties directed at it: if Alfonse is frightened by a movie, then showing that movie to him is likely to make him focus on the movie, and so under the right conditions to feel fear of it.
phrase denotes nothing, because then Alfonse does not have a fear of heights.\textsuperscript{9}

Experiential states are thus characterized as follows. These notions might be formalized using modal machinery modeling dispositions, but as their formal properties are not relevant for the following, they are left paraphrased.

\begin{equation}
\text{stim}''(w)(z)(x) \text{ and } \text{exp}''(w)(u)(x) \text{ only if at } w, u \text{ has undergone an experiential episode of the phenomenological character associated with } k \text{ and directed at } z, \text{ in virtue of which } u \text{ is generically disposed to undergo experiential episodes with that same phenomenological character and direction, when its experiential faculties are focused on } z.\textsuperscript{10}
\end{equation}

How these experiences are ranked according to the preroder on qualities (cf. §1.1.1) will then depend on what sorts of experiential episodes occasioned the experiential state, and what sorts of experiences the individual is generically disposed to have towards the stimulus. This will be determined, in a way not linguistically encoded, by the considerations mentioned in §1.1.1.

This characterization is important, because it follows that attribution of an experiential state to an individual entails having had a certain sort of experience of its stimulus, where there is one. From this it follows that certain constructions enforce, or fail to enforce, direct experience presuppositions.

\subsection*{1.2 Object-experiencer psych verbs}

The target of this section is a group of psych verbs included in the ‘preocupare-class’ of the tripartite division in Belletti & Rizzi (1988) (Landau 2010a’s ‘Class II’ verbs), which have a nominative subject and accusative object: these include, per §1.1, \textit{stun}, \textit{frighten}, \textit{interest}, \textit{confuse}, and \textit{horrify}. These verbs are of interest for the reference to experiential kinds that their denotations make, which is often made apparent by their morphological relation to an experiential kind term. Further, since they occur productively with the -\textit{ing} suffix to form experiential adjectives, their analysis is helpful in demonstrating how the semantics of experiential predicates (de)composes.

As noted in §1.1, where five superficial morphological classes of object-experiencer psych verbs were identified in English, these verbs have an inconsistent surface relationship with their experiential kind term counterparts, if they have any. Given this, a number of options

\textsuperscript{9}There are some possible exceptions to this observation: a deity that creates a human \textit{ex nihilo} and knows all of its faculties down to the last detail might truly boast, ‘I made this one with a fear of heights,’ even prior to its having experienced any heights. These won’t be addressed in the text.

\textsuperscript{10}If desired, the extension to experiential states with no stimulus (cf. fn. [ ]) is easy to describe, by removing the language addressing the stimulus and the ‘direction’ of the experience. The ‘in virtue of which’ language is meant to enforce a link between the initial experiential episode and the generic disposition. There may be some cognitive reason that experiential states are encoded in this way, with an initial experiential episode being what ‘plants’ the portion of an experiential kind in the experiencer, and this portion then being able to ‘activate’ once the experiencer possesses it. It may also be that the natural language metaphysics, in Bach (1986)’s sense, is committed to such individuals, that ‘appear’ in experiencers in virtue of an initial experiential episode, and ‘remain’ dormant in them for as long as the disposition to undergo further such episodes remains.
present themselves as to how to analyze the composition of each class. In particular, if the surface morphology is taken at face value, then one might e.g. take *confuse* to be verbal in the lexicon, and give a special entry for a nominalizer *-ion*, while taking *fright* to be nominal in the lexicon, and give a special entry for a verbalizer *-en*. However, given the semantic machinery to be provided in what follows, the ability to move between the appropriate nominal and verbal denotations in any direction will be trivially granted, and since all the psych verbs will end up with analogous denotations (relative to the experiential kind associated with them), these morphological questions will not matter at present.

The following therefore adopts the simplifying, unifying assumption that each object-experiencer psych verb is the result of composing a verbalizer with a root, and that each nominal experiential kind term is the result of composing a nominalizer with that same root. The verbalizer and nominalizer will then have a distinct morphophonological realization depending on the superficial class of the psych verb. Thus each verb is treated on the model of the surface behavior of *horrify*, which looks to be the result of composing the verbalizer *-ify* with some root $\sqrt{\text{HORROR}}$, while *horror* is the result of the nominalizer *-or* composing with this same root. This is meant only as an expository convenience, awaiting a more serious morphological analysis, which may or may not be unified this way.

<table>
<thead>
<tr>
<th>Root</th>
<th>Nominalizer</th>
<th>Verbalizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\sqrt{\text{STUN}}$: stun</td>
<td>n/a</td>
<td>-∅</td>
</tr>
<tr>
<td>$\sqrt{\text{FRIGHT}}$: fright</td>
<td>-∅</td>
<td>-en</td>
</tr>
<tr>
<td>$\sqrt{\text{INTEREST}}$: interest</td>
<td>-∅</td>
<td>-∅</td>
</tr>
<tr>
<td>$\sqrt{\text{CONFUSION}}$: confuse</td>
<td>-ion</td>
<td>-∅</td>
</tr>
<tr>
<td>$\sqrt{\text{HORROR}}$: horr</td>
<td>-or</td>
<td>-ify</td>
</tr>
</tbody>
</table>

The roots can be taken to denote the property of being a portion of the relevant kind, and the nominalizers can be taken to be vacuous, preserving the denotations from §[].

The following section offers a semantics for the verbalizers, and hence the psych verbs. §1.2.1 isolates the class of object-experiencer psych verbs to which this analysis is meant to apply, separating their stative occurrences with genuine stimuli subjects from their related eventive readings with causer subjects. §1.2.2 then provides the analysis of the verbalizers themselves.

### 1.2.1 Causers versus stimuli

The majority of object-experiencer psych verbs in many languages have two recognizably distinct readings, and it is important for what follows to focus on the reading relevant to the composition of experiential predicates. The distinction can be seen in English with the example of *frighten* in the present tense.

(36) Alfonse frightens Bethany.

(36) can be read either as aspectually stative, or eventive. On the former reading, the verb
is construed non-habitually, and what’s asserted is that Bethany is in an experiential state of fear directed at Alfonse, of the sort described in §1.1.2. On the latter reading, the verb is eventive, and so due to the present tense habitually: it asserts that Alfonse habitually causes Bethany to experience fear. Aside from this non-habitual/habitual distinction, the classical tests for stativity e.g. in Dowty (1979) can be applied to such sentences, to verify that both stative and eventive readings are allowed. The subject of a stative object-experiencer psych verb is a ‘stimulus,’ while the subject of its eventive counterpart is a ‘causer.’

A syntactic distinction between stimulus-stative and causative-eventive readings has long been recognized, in that the former, but not the latter, license certain ‘psych-effects,’ unusual syntactic behaviors pertaining to psych verbs. For example, Anagnostopoulou (1999) shows that in modern Greek, object-experiencer psych verbs embedded in relative clauses sometimes require resumptive pronouns to appear; this effect disappears where the subject is read as the agent-causer of the verb, rather than its stimulus.

Landau (2010a: chs. 3, 5) includes an extensive catalogue of these psych-effects, and demonstrates that in case after case, certain causal-eventive readings of the verbs do not give rise to them (cf. ibid. §9.3). On this basis, Landau holds that these two readings of object-experiencer psych verbs have distinct structures: causal-eventive readings are transitive, and include a v-projection and external argument, while stimulus-stative readings are unaccusative, with oblique objects (cf. ibid. 7-8, esp. fn. 4 & ex. 12a). Of interest at present are not these syntactic distinctions, but the semantic ones that accompany them. Four of these are salient: a habitual reading in the present tense (and hence an eventive reading) tracks the behavior of a causer as opposed to a stimulus according to each of these criteria.

The first difference relates to an observation made by Pesetsky (1995: 56ff.), that causers of experiences need not have the caused experiences directed at them, while stimuli (what he calls ‘themes’ or ‘subject matters’) must be the target of experiences that they stimulate. Pesetsky claims that subjects of object-experiencer psych verbs always occupy the causer role, but this is apparently mistaken.

Where (36) is read statively and non-habitually, Bethany’s fear must be directed at Alfonse. Where it is read eventively and thus habitually, the interpretation is just that Alfonse habitually causes fear to be in Bethany – but he might do this e.g. by playing scary movies for her, and it is these movies, and not Alfonse, towards which Bethany’s fear is directed. Thus, Alfonse frightens Bethany entails Bethany is frightened of Alfonse only on the first reading. It is possible to be a causer of experience, without being its stimulus, and the latter role is tracked only by the stative readings.

The second observation moves in the opposite direction: a stimulus of an experience need not be its cause, and the latter is tracked by the subject of the psych verb only in the eventive reading. This is demonstrated most vividly in cases where there is a stimulus of

11Landau’s (cf. ibid. 87-88, exx. 168a-b) typology is actually slightly more complicated than this: he splits the category of causative (non-unaccusative) object-experiencer psych verbs into an agentive category and a non-agentive category. It is the agentive psych verbs which lack the characteristic psych effects and oblique object. This finer difference won’t matter for present purposes.

12And so Pesetsky (ibid.)’s treatment of object-experiencer psych verbs generally using a null morpheme CAUS, as well as related comments made e.g. by Jackendoff (1990: 262, fn. 4), may conflate the role of causer and stimulus in these constructions.
experience that does not exist, and which *a fortiori* doesn’t have the causal powers necessary for causing that experience.

(37) Bigfoot frightens Alfonse.

Assuming that Bigfoot does not exist, a stative and non-habitual reading of (37) is fine, so long as Alfonse imagines or otherwise has his attention directed towards Bigfoot, which generally makes him feel fear toward this imagined object. An eventive and habitual reading, however, says that Bigfoot habitually causes fear in Alfonse, which attributes various causal powers, and so existence, to Bigfoot.  

Third, causal-eventive readings of object-experiencer psych verbs do not imply the existence of a corresponding experiential state in the sense of §

13 Stimuli only need to have an experiencer’s experiential faculties directed towards them (cf. fn. []), and stimulation does not imply causation.

Fourth and finally, stimulus-stative readings of these verbs are gradable, while causal-eventive readings are not: this will be addressed in §1.2.2. The contrast between these readings is brought out sharply by the fact that certain object-experiencer psych verbs simply lack a causative-eventive reading: (38-a) cannot be read eventively and habitually, and the above four features characteristic of the stimulus-stative reading always hold of it. There are further cases in which the verb in its causal-eventive reading overtly encodes the distinction between causer and stimulus, in virtue of maintaining a stimulus argument alongside the causer: (38-b) must be read with Alfonse as the causer, the project as the stimulus, and Bethany as the experiencer.

(38) a. Alfonse concerns Bethany.

b. Alfonse interested Bethany in the project.

→ Bethany was interested in the project.

\[ \not \rightarrow \] Bethany was interested in Alfonse.

The exact relation between stimulus-stative and causal-eventive object-experiencer psych verbs will not be addressed here: it may be that the latter are derived via causative morphology of some sort.  

14 What is important is to recognize that the stimulus-stative readings are the ones important for the semantics of experiential predicates. This can be seen from

13 The imagined scenario is one in which Alfonse is frightened by the thought of Bigfoot, and not e.g. by some fictional depiction of him, which might itself be said to exist and have various causal powers.  

14 This is suggested by the fact that in many languages, formation of psych verbs occurs using overt causative morphology attached to predicates that relate their subjects to experiential episodes: Akatsuka (1976) demonstrates this for Japanese, and suggests the retrojection of this pattern onto languages like English that show no such overt morphology in these constructions. An account of these facts require figuring out whether constructions with overt causative morphemes only allow for the causal-eventive readings explained in the text: if so, then causative morphology is likely the culprit behind this distinction. If they allow for both sorts of readings, however, then a more nuanced view must be taken of the causative morphology, allowing it to express both stimulus and causer roles in the above sense, and some other source of the difference must be found.
the fact that where these predicates are composed from psych verbs using the suffix -ing, all the semantic effects of the stative readings are preserved, as the reader can confirm.

(39) The movie is frightening to Alfonse.

Thus (39) can only be aspectually stative; it requires that Alfonse’s fear be directed at the movie; it does not require that the movie be the cause of Alfonse’s fear (say, if the movie is not real, but Alfonse is frightened at the thought of it); it requires that an experiential state of fear hold with Alfonse as experiencer; and the associated construction must be gradable. Deverbal psych predicates are thus composed out of stimulus-stative readings of psych verbs, and the relation of experiential predicates to experiential kinds generally mirrors that enforced by these readings of psych verbs.

1.2.2 Composition with psych verbs: stimulus, experiencer, and gradability

With the appropriate target of analysis clarified, a denotation can be given for stative object-experiencer psych verbs. The core idea is simple: these verbs compose with two arguments, an experiencer and a stimulus, and place them in the role of experiencer and stimulus as characterized in §1.1.1.

There are a few key features of these verbs that an analysis in terms of experiential kinds must capture. First, they are gradable, as shown by the fact that they can take degree modifiers like really and a lot (40), and occur in the comparative, using more than and less than (41).

(40) a. Mathematics really interests Bethany.
    b. The news worries Alfonse a lot.

(41) a. The teacher’s behavior shocks us more than the students’ does.
    b. His opinions confuse Bethany less than they confuse Alfonse.

When read statively, these sentences all receive the appropriate degree interpretation: (40-a) means that mathematics interests Bethany to a high degree, (41-a) means that the degree to which the teacher’s behavior worries the group including the speaker exceeds the degree to which the students’ behavior does, etc. Where these verbs are read causally and eventively, these interpretations are unavailable, and the modifiers pertain instead to the frequency of an event: an eventive reading of (40-b) means instead that the news causes worry to be in Alfonse frequently, an eventive reading of (41-b) means that the referent’s opinions cause confusion to be in Bethany less often than they do in Alfonse, etc.

And so there needs to be a way of formalizing the degree to which an individual can be the stimulus of an experience of a certain experiential kind in an experiencer. Using a simplification of the machinery in Kennedy (1999), each experiential kind can be associated with an ordered set of degrees (of type $d$), which the verbs will ultimately map experiences to.

(42) For each experiential kind $k$, there is:
    a. a set of degrees $\Delta_k$, where for all $k', k''$ such that $k' \neq k'': \Delta_k'$ and $\Delta_k''$ are disjoint;
b. a total order $\leq_k$ on $\Delta_k$.

Adapting the Kennedian degree semantics to verbs with two arguments, a psych verb takes an experiencer and a stimulus, and returns the degree to which the stimulus stimulates an experience of the associated experiential kind in the experiencer. That is, psych verbs denote transitive measure functions, from individuals to individuals to degrees (and so are of extensional type $\langle e, \langle e, d \rangle \rangle$).

Experiences can then be ‘ranked’ according to the orderings on degrees described in (42). These rankings should preserve the preorders on portions of qualities described in §1.1.1: to instantiate an experiential kind ‘to a higher degree’ is just to be composed of a greater portion of that kind. To formalize this, let $\delta_k$ denote a function that operates on an individual (in all interesting cases, an experience), and returns the degree of the experiential kind $k$ that this individual instantiates. This function is defined as follows.

\[(43) \quad \delta_k \text{ is a function } D_e \to \Delta_k \text{ such that for all } x, y:\]
\[\delta_k(x) \leq_k \delta_k(y) \text{ iff } x \leq_k y.\]

In other words, $\delta_k(x)$ is the degree of $k$ that $x$ instantiates, and the ranking among degrees tracks exactly the rankings among portions of experiential kinds: the greater the portion, the higher the degree. However, since $\leq_k$, unlike $\preceq_k$, is a total order, this means that distinct experiences that are ‘tied’ according to the size preordering on portions will instantiate the exact same degree.

One last bit of notation will be useful in giving a denotation for object-experiencer psych verbs. Let $\kappa'$ be a function defined as follows.

\[(44) \quad \text{If for all } w, x: P(w)(x) \text{ iff } x \text{ is a portion of } k, \]
\[\text{then } \kappa'(P) = k; \]
\[\text{else undefined.}\]

$\kappa'$ is thus a function that ‘fishes out’ an experiential kind from its corresponding property: where $P$ is the denotation of fright, $\kappa'(P) = \text{FEAR}$, where $P$ is the denotation of confusion, $\kappa'(P) = \text{CONFUSION}$, and so on.\(^{15}\)

With this machinery in place, a denotation for the verbalizer that produces an object-experiencer psych verb can be given. The example used here is $\text{-en}$, which attaches to $\sqrt{\text{FRIGHT}}$ to form $\text{frighten}$: an exactly analogous denotation will be available for every such psych verbalizer, subject to the morphophonological caveats in §[] above.

\[(45) \quad [\text{-en}]^w = \lambda Ps.e.t. \lambda x.e. \lambda y.e. \kappa'(P)(\sigma z[stim''(w)(y)(z) \land exp''(w)(x)(z)])\]

$\text{-en}$ composes with a term denoting the property of being a portion of an experiential kind ($P$), and returns a transitive measure function. This function itself takes two arguments, an experiencer ($x$) and a stimulus ($y$), and finally returns a degree, viz. the degree of the kind associated with $P (\kappa'(P))$ that the maximal individual (which due to the definition of ‘$\text{exp''}$’ must be an experience) stimulated by $y$ and experienced by $x$ instantiates. $\text{-en}$ composes as follows with the root.

\(^{15}\)The uniqueness of $k$ here, which allows $\kappa'$ to be a function, is guaranteed by the disjointness of qualities: cf. §1.1.1.
Since the experiential kind associated with fright is FEAR, the result is a transitive measure function that takes an experiencer and a stimulus, and returns the degree of fear instantiated by the maximal individual stimulated by the stimulus in the experiencer. In other words, frighten relates a stimulus and an experiencer to the degree of fear produced by the stimulus in the experiencer.

This denotation must be accompanied by some treatment of degree constructions, and for this to happen, one further feature of these verbs needs to be illustrated. Stative object-experiencer psych verbs impose orderings on their associated sets of degrees with a certain formal property. Adopting an analogy with gradable adjectives, and using Yoon (1996)’s terminology, these verbs, on composing with their experiencer object, produce ‘partial’ predicates. In the terminology of Kennedy & McNally (2005), these are ‘absolute’ gradable predicates, and further they are so in virtue of their associated orderings encoding a ‘lower-closed’ scalar structure.

This means that in their positive forms (without any overt degree morphology or modifiers), these verbs denote relations that hold between a stimulus and an experiencer just in case the stimulus stimulates some non-minimal degree of the relevant experiential kind in the experiencer. They do not, as they would if they were relative predicates, denote relations that hold between a stimulus and experiencer just in case the former stimulates a degree above some standard or threshold relative to a comparison class in the experiencer. This occurs in virtue of the fact that each ordering on the set of degrees associated with an experiential kind contains a least element, i.e. a unique ‘lowest’ or ‘minimal’ degree.

This is shown by the fact that these verbs occur with modifiers like slightly / a bit and hardly / barely, and when they do, the interpretation is not that the experience is stimulated to some degree just above a contextually relevant threshold, but rather that the experience is stimulated to some degree just above ‘zero.’

(48) a. The movie frightens Alfonse {slightly / a bit}.

b. The movie {hardly / barely} frightens Alfonse.

\[ \leftrightarrow \text{The movie stimulates fear in Alfonse to a slight degree.} \]

\[ \not\leftrightarrow \text{The movie stimulates fear in Alfonse to a degree slightly surpassing some non-zero standard.} \]

This is not how relative predicates like the adjective tall work (49), but it is how absolute lower-closed predicates like open work (50).

(49) Alfonse is {slightly / barely / a bit} tall.

\[ \not\leftrightarrow \text{Alfonse has height to a slight degree.} \]

\[ \leftrightarrow \text{Alfonse has height to a degree slightly surpassing some non-zero standard.} \]

(50) The door is {slightly / barely / hardly} open.

\[ \leftrightarrow \text{The door is open to a slight degree.} \]

\[ \not\leftrightarrow \text{The door is open to a degree slightly surpassing some non-zero standard.} \]
Further, sentential negation with these verbs creates the interpretation that the experience is produced to a ‘zero-degree,’ i.e. not at all, in the experiencer, not that the experience is produced in a degree below some standard (cf. Kennedy & McNally 2005: 359, ex. 36, and ff. for some further relevant tests).  

(51) The movie doesn’t frighten Alfonse.  
↔ The movie stimulates no fear in Alfonse.  
↛ The movie stimulates fear in Alfonse to a degree below some standard.

Again, relative predicates do not function this way, but absolute lower-closed predicates do.

(52) Alfonse isn’t tall.  
↛ Alfonse has no height.  
↔ Alfonse has height to a degree below some non-zero standard.

(53) The door isn’t open.  
↔ The door is open to no degree.  
↛ The door is open to a degree below some non-zero standard.

The deverbal counterparts of these psych verbs preserve these properties: in §1.3.1, this will be accounted for by having them preserve the scalar structure pertaining to experiential kinds.  

(54) a. The movie is {slightly / a bit / barely} frightening (to Alfonse).  
b. The movie isn’t frightening (to Alfonse).

To capture these facts, let there be a minimal degree of each experiential kind $k$, symbolized by ‘0$_k$,’ to be read ‘the zero-degree of $k$.’

(55) For every experiential kind $k$, there is a least element of $\Delta_k$ according to $\leq_k$, such that if $x$ is a minimal element according to $\preceq_k$, then $\delta_k(x) = 0_k$.

---

16 This test with negation is also meant to make follow-ups that explicitly assert that some non-zero degree associated with the predicate is present infelicitous. It is difficult to construct plausible sentences like this using psych verbs, but they would be something like: ?The movie doesn’t frighten Alfonse, but he has some fear of it. To the extent that this is fine English, the result indeed is semantically anomalous. Of course, there will be borderline cases where what experiential state counts as a non-zero degree e.g. of fear is open to question, and so Alfonse might be reported as not being frightened despite experiencing some negligible experience of fear. This is taken to be either a matter of pragmatic imprecision, or of the granularity of the scale being indeterminate (i.e., there is indeterminacy as to what experience of fear is required in order to have experienced a non-zero degree of it).

17 Insofar as e.g. Glanzberg (2007: 14), Fleischer (2013), and perhaps Lasersohn (2008: 308-309) take for granted that experiential predicates are relative, they appear to be mistaken. The standard tests can be run to the same effect also with deverbal psych adjectives, and their favored adjectives, like tasty.

18 It is a further question whether the orderings on these sets of degrees have maximal elements. If they did, this would make the positive form of the verb composed with the adjective (e.g. frighten(s) Alfonse) a ‘closed predicate.’ These are meant to occur with proportional modifiers like partially (cf. Kennedy & McNally 2005: 352), which doesn’t look to be the case: ?The movie partially frightens Alfonse. The text makes no commitment as to the existence of maximal degrees of experiential kinds, but it can be assumed for convenience that they are lacking, making the scales that experiential kinds impose solely lower-closed.
From what has been said above, it follows that any individual who instantiates the zero-degree of \( k \) is an individual that is composed of no portion of \( k \) at all, and vice-versa. To see this, recall from §1.1.1 (cf. []) that the minimal individuals according to the preorder on qualities \( \preceq_k \) are those that are composed of no sub-parts that are a portion of \( k \). But according to (55), precisely these individuals instantiate the zero-degree of \( k \).

With all this said, degree morphology, and the resulting truth-evaluable sentences containing object-experiencer psych verbs, can be composed. First, let the psych verb form an ordinary gradable predicate, denoting a measure function of type \( \langle e, d \rangle \), by composing with an experiencer.

\[
(56) \quad [\text{frightens Alfonse}]^w = [\text{frighten}]^w([\text{Alfonse}]^w) = \lambda y.e.\delta_{\text{fear}}(\sigma z[\text{stim}''(w)(y)(z) \land e x p''(w)(a)(z)])
\]

The result is a function from an individual to the degree of fear stimulated by that individual in Alfonse.

Now the degree morphology operates on the measure function to yield a property. Following Kennedy & McNally (2005: 361), let a lower-closed predicate, i.e. a gradable predicate whose ordering on degrees enforces a least element, make use of this least element as the proper standard of comparison that the degree morphology targets.

This will allow for a standard treatment of degree morphology and comparatives. Relevant for present purposes is the positive form of the predicate, where no overt degree morphology appears: let this be treated, again following Kennedy (1999), by composition with the silent morpheme \( \text{pos} \). When composing with a lower-closed absolute predicate, \( \text{pos} \) takes a measure function \( G \) and returns a property, viz. that property true of an individual just in case it instantiates a non-zero (i.e. greater-than-zero) degree according to \( G \).

\[
(57) \quad [\text{pos}]^w = \lambda G.s,ed.\lambda x.e.0G <_G G(w)(x)
\]

In the case of an object-experiencer psych verb and its experiencer argument, \( 0_G \) is the zero-degree of the experiential kind \( k \) associated with the verb, and \( <_G \) is \( <_k \). The resulting positive form of \( \text{frightens Alfonse} \) is then as follows.

\[
(58) \quad [\text{pos} [\text{frightens Alfonse}]^w = [\text{pos}]^w(\lambda w.s,[\text{frightens Alfonse}]^w)
\]

---

19 Why this happens with lower-closed predicates will not be addressed here, but is taken to be an independently established observation, at least for most cases. The denotations for degree morphology can be generalized, to make reference to a variable standard of comparison that depends on the lexical properties of the predicate it composes with, where this will default to the least degree on the scale for lower-closed predicates. For convenience, the lexical entry for \( \text{pos} \) in the text makes reference to the least degree \( \text{simpliciter} \), since only lower-closed predicates are presently relevant.

20 More explicitly: for any object \( G \) of type \( \langle s, \langle e, d \rangle \rangle \) that is denoted by some gradable predicate \( \alpha \), let \( \Delta_G \) be the range of \( G \) relative to any world (i.e., \( \Delta_G := \{d : \exists w, x(G(w)(x) = d)\} \)), and let there be a unique privileged total ordering on every \( \Delta_G, \leq_G \), according to the scalar properties of \( \alpha \). Then \( 0_G := \) the least element of \( \Delta_G \) according to \( \leq_G \). For the case of psych verbs associated with experiential kind \( k \), the result will be as in (65) so long as the privileged ordering is \( \leq_k \), and likewise for every other verb, swapping out for the relevant experiential kind. This machinery suffices for the present, but would have to be complicated to accommodate different predicates that enforce distinct orderings on the same set of degrees, like cross-polar antonyms (\( \text{tall} / \text{short} \)) (in which case there is no unique privileged ordering on said set of degrees, e.g. height degrees).
\[
= \lambda x. \text{0}_{\text{FEAR}} <_{\text{FEAR}} \delta_{\text{FEAR}}(\sigma z[stim''(w)(x)(z) \land exp''(w)(a)(z)])
\]

It denotes a property true of individuals that stimulate a non-zero degree of fear in Alfonse. And finally, composing with the stimulus subject, to yield \textit{The movie frightens Alfonse}:

(59) \[
[[\text{the movie}] [\text{POS} [\text{frightens Alfonse}]]''^w = \text{POS} [\text{frightens Alfonse}]]''^w(\text{the movie}'')^w
\]

\[
= \text{0}_{\text{FEAR}} <_{\text{FEAR}} \delta_{\text{FEAR}}(\sigma z[stim''(w)(z)(\text{movie}'(w)(y)) \land exp''(w)(a)(z)])
\]

The result is true just in case the movie stimulates a non-zero degree of fear in Alfonse. Given what has been said above, this means that there is some portion of fear in Alfonse directed at the movie, which in turn, given §1.1.2, means that Alfonse has had an experiential episode of fear of the movie, in virtue of which he is relevantly disposed to do so when directing his experiential faculties toward it. This is the correct result, and it generalizes to other stative object-experiencer psych verbs, swapping out for the relevant experiential kind.

The above machinery yields a welcome result with respect to how stative object-experiencer psych verbs encode presuppositions of direct experience. Sentences of this form presuppose that the experiencer has had an experience stimulated by the stimulus, at least of the sort relevant to the production of the kind associated with the verb. In the case of a movie stimulating fear, as a shorthand the relevant experience may be taken to be having watched the movie.\(^{21}\)

(60) The movie frightens Alfonse.
\[\leftrightarrow \text{Alfonse has watched the movie.}\]

This presupposition projects out of negation (61), can be targeted by the usual discourse moves (62), and is locally accommodated in the usual intensional environments (63).

(61) The movie doesn’t frighten Alfonse.
\[\leftrightarrow \text{Alfonse has watched the movie.}\]

(62) A: The movie frightens Alfonse.
B: Wait a minute – Alfonse hasn’t watched the movie.

(63) The movie will frighten Alfonse.
\[\leftrightarrow \text{Alfonse will watch the movie.}\]

This presupposition is already encoded in the semantics provided above, by means of how experiential states were defined. (59) contains the term ‘\(\sigma z[stim''(w)(z)(\text{movie}'(w)(y)) \land exp''(w)(a)(z)]\)’, which is defined only if there is a unique maximal individual meeting the condition in the brackets over which ‘\(\sigma z\)’ scopes. But this is so only if there is some individual of which the movie is the stimulus, and Alfonse is the experiencer, i.e. only if an experience

\(^{21}\)This limiting of experience to having watched the movie is only to aid the exposition: it isn’t reflected in the semantics, as it shouldn’t be, since one may report that the movie frightens Alfonse if, e.g. he is scared of its title, or its packaging, even having never watched it. The semantics itself only refers to whether the movie has stimulated experience in Alfonse \textit{simpliciter}, and this looks to be correct, given the wide construal these reports can be given of what kind of experience is necessary (in principle, any whatsoever). In cases where interlocutors seem to make restriction to a certain kind of experience part of the presupposed content, it can be presumed that this happens either due to pragmatic imprecision, or due to domain restriction on the reference to an experience, i.e. on ‘\(\sigma\)’.
is located in him and directed at the movie (supposing that all experiences are of some kind or other). And per §1.1.2, this happens only if Alfonse has undergone an experiential episode directed at the movie.

It follows that these psych verbs cannot have merely dispositional readings, but enforce actual experiences: in (59), the \( \sigma \)-term is undefined where there is no such experience, hence \( \delta_{\text{fear}} \) operates on no value, and the denotation as a whole is undefined, resulting in presupposition failure. That this presupposition projects out of non-external sentential negation is easy enough to see, for simplicity taking \( \text{doesn't} \) to be a predicate negator.

\[
\begin{align*}
\text{(64)} & \quad [\text{doesn't}]^w = \lambda P_e. \lambda x_e. \neg P(x) \\
\text{(65)} & \quad [[\text{the movie} \ [\text{doesn't} \ [\text{POS} \ [\text{frighten Alfonse}]]]]^w \\
& \quad \quad = [[\text{doesn't}]^w([\text{POS} \ [\text{frighten Alfonse}]]^w)([\text{the movie}]^w) \\
& \quad \quad \quad = \neg [0_{\text{fear}} <_{\text{fear}} \delta_{\text{fear}}(\sigma z[\text{stim}''(w)(z)(\mu y[\text{movie}''(w)(y)]) \wedge \text{exp}''(w)(z)(a))])] \\
& \quad \quad \quad = 0_{\text{fear}} =_{\text{fear}} \delta_{\text{fear}}(\sigma z[\text{stim}''(w)(z)(\mu y[\text{movie}''(w)(y)]) \wedge \text{exp}''(w)(z)(a))] \\
\end{align*}
\]

The resulting denotation again presupposes that the movie has stimulated experience in Alfonse, by the definedness conditions on the \( \sigma \)-term, and where defined it is true just in case the degree of fear stimulated in Alfonse by the movie is the zero-degree. This is so just in case said experience contains no portion of fear, i.e. just in case Alfonse did not have an experiential episode of fear directed at the movie, in virtue of which he is disposed to have such episodes under the relevant conditions. This is right: the sentence doesn’t just report that Alfonse lacks fear of the movie, but further reports that it fails to stimulate fear in him.

The language thus draws a three-way distinction using psych verbs with respect to the experience stimulated: there is (i) stimulation of experience of a certain kind (as when watching the movie instills fear), (ii) stimulation of an experience that is not of a certain kind (as when watching the movie fails to instill fear), and (iii) a lack of stimulation of experience (as when one hasn’t watched the movie to begin with). This follows from the above treatment of experiential states, combined with the treatment of stative object-experiencer psych verbs as lower-closed predicates, which in particular allows for the distinction between the stimulus of a zero-degree of a kind, and a lack of stimulus altogether.

### 1.3 Deverbal psych adjectives

With the semantics for object-experiencer psych verbs in place, a denotation for -ing, and the resulting experiential predicates, can be provided. Echoing the bare denotation given for tasty in §?? (cf. ??), the denotation for a deverbal psych predicate like frightening will be an instantiation of the following schema.

\[
\text{(66)} \quad [\text{frightening}]^w = \lambda x_e. \text{frightening}''(w)(x)
\]

Where ‘frightening’ is read ‘disquotationally,’ such that \( \text{frightening}''(w)(x) \) iff \( x \) is frightening at \( w \), and so on for every such adjective. The following section will flesh out this schematic denotation. The denotation for tasty, being sensitive not only to the experiential kinds examined in this chapter, but also to the sensory modality of taste, will have to wait until Chapter 3, where sensory verbs and related constructions are discussed.
§1.3.1 provides a semantics for -ing itself, and discusses how it interacts with genericity, such that deverbal psych predicates are true of individuals that are disposed, under the appropriate circumstances, to produce experience of a certain kind. §1.3.2 discusses the treatment of exocentricity in experiential predicates, where said predicates are read as anchored to a contextually relevant experiencer, and shows how the present semantics offers a promising way of incorporating it. Finally, §1.3.3 discusses the treatment of overt experiencers in the form of to-headed PP phrases, and summarizes the results of the present chapter for the semantics of experiential predicates generally.

1.3.1 Adjectival -ing and genericity

An experiential predicate is completed by composing the suffix -ing with an object-experiencer psych verb. Roughly, the resulting predicate is one true of an individual just in case it is disposed to be the stimulus of a non-zero degree of the experiential kind associated with the verb in question. Thus, frightening is true of an individual just in case it is disposed to be the stimulus of fear, i.e. just in case it is disposed to frighten.

There are two caveats to keep in mind in providing a denotation for -ing that gives this result. First, as concluded in Chapter 1, the relevant sense of being disposed to be a stimulus includes no intrinsic reference to an experiencer: e.g., to be frightening is not to be disposed to produce fear in any particular experiencer, or even just some experiencer or other, but simpliciter: what this means will be elucidated in part immediately below, and in part in Chapter 5. Second, the actualization of a disposition requires that certain conditions be met, and since there is no guarantee that they ever are, there is no guarantee that the disposition is ever actualized (as reflected in ??: experiential predicates don’t inherently encode any presuppositions of direct experience).

To get a handle on both these points, note that the use of -ing to compose experiential predicates relates to a broader use of this form in English to produce dispositional adjectives. A large class of verbs take a homophonous suffix, resulting in a predicate that is true of an individual roughly just in case that individual is disposed to perform the role indicated by the verb’s subject in an eventuality. Thus, with wash and sing:

(67)  a. washing machine
      b. singing bird

A washing machine is a machine that is disposed to be the causer of washing events; a singing bird that is disposed to be the agent of singing events. Where the verb is transitive, as with wash, and thus encodes reference to arguments besides the external (here, the washer), the result of composing with -ing makes no reference to those other arguments (here, the washed thing): a washing machine is disposed to wash simpliciter, and the adjective itself doesn’t specify what is washed, just as frightening makes no reference to what is frightened.22 This is so even if the washing events in which the machine takes part must involve some washed thing or other.

22Of course, culturally it might be apparent that a washing machine typically washes clothes, or some other stereotypical thing. The point is just that this isn’t lexically encoded by the adjectival modifier – a machine that washes dogs can still be called a washing machine.
These adjectives are also applicable where the disposition isn’t actualized: thus, a machine can already be a washing machine straight out of the factory, even though it hasn’t yet washed anything, and a bird can be a singing bird even when newborn. The same is true of the psych predicate, substituting the role of stimulus for agent or causer: all that is required is that where such-and-such conditions are met, the predicated individual is the stimulus of fear.

What follows won’t address whether this general occurrence of -ing can be equated with the one attaching regularly to object-experiencer psych verbs, but will just apply the above lessons to the specific case of deverbal psych predicates, and offer a denotation specific to these.

The role of -ing when composing with object-experiencer psych verbs is to ‘desaturate’ the experiencer, and the relevant dispositional condition then somehow needs to be enforced. This can be done by having -ing operate on a transitive measure function, and return an intransitive measure function that preserves the relevant experiential kind and scale structure, while referencing only the stimulus.

\[ [-\text{ing}]^w = \lambda R_s, (e, x, \lambda x_\text{e}, \delta \kappa''(R)) (\sigma y [\text{stim}''(w)(y)(x)]) \]

(68) \( \kappa'' \) is the transitive counterpart to \( \kappa' \): it applies to the intension of a transitive measure function, and ‘fishes out’ the relevant experiential kind. It can be defined as follows.

\[ \text{If for all } w, x, y \text{ such that } R(w)(x)(y) \text{ is defined, } R(w)(x)(y) \in \Delta_k, \text{ then } \kappa''(R) = k; \text{ else } \kappa''(R) \text{ is undefined.} \]

Thus where \( R \) is the intension of \( \text{frighten} \), \( \kappa''(R) = \text{FEAR} \), and where \( R \) is the intension of \( \text{confuse} \), \( \kappa''(R) = \text{CONFUSION} \), and so on.

The result of composing -ing with \( \text{frighten} \) is then as follows, by intensional function application, repeating the denotation for \( \text{frighten} \) from ?? as (70).

\[ [\text{frighten}]^w = \lambda x_\text{e}, \lambda y_\text{e}, \delta \text{FEAR} (\sigma z [\text{exp}''(w)(z)(x) \land \text{stim}''(w)(z)(y)]) \]

(70) \[ [\text{frightening}]^w = [-\text{ing}]^w (\lambda w_\text{s}, [\text{frighten}]^w) \]

(71) \[ = \lambda x_\text{e}, \delta \text{FEAR} (\sigma y [\text{stim}''(w)(y)(x)]) \]

The result is that \( \text{frightening} \) denotes a measure function mapping an individual to the degree of the maximal portion of fright of which that individual is the stimulus. The scalarity of the psych verb is preserved, as is the lower-closed scale structure, allowing for comparative and degree morphology, and triggering an absolute reading of the positive form. POS then

---

23There are asymmetries problematic for such an equation. When used with most verbs, dispositional -ing is disallowed in predicate position: *The machine is washing* and *The bird is singing* have only progressive readings (meaning that *wash* remains verbal and retains its transitivity). Cf. *The movie is frightening*. This may be related to the non-stativity of the verbs: by contrast, *The parents are understanding* is fine where *understanding* encodes a disposition to understand in the (stative) sense of empathizing. If this were true, then the behavior of stative (cf. §1.2.1) object-experiencer psych verbs would be in line with the generalization (though it is imperfect: cf. *The parents are forgiving*, where *forgive* is eventive, yet the dispositional reading nonetheless survives in predicative position). Most subject-experiencer psych verbs are at least highly degraded with -ing, as with *the enjoying customers*, suggesting that -ing is sensitive to which role in the eventual property the disposition pertains to (where stimuli are allowed, and experiencers are not). This has to be taken into account in providing a semantics for subject-experiencer psych verbs.
converts the adjective into a property-denoting expression as usual, repeating the denotation for POS from (72) as (72).

\[(72) \quad [\text{POS}]^w = \lambda G_{s,ed} \ldots \lambda x.e.0G < G(x)\]

\[(73) \quad [\text{POS frightening}]^w = [\text{POS}]^w(\lambda w_s.[\text{frightening}]^w) = \lambda x.e.0 \text{FEAR} < \text{FEAR}(\sigma y[\text{stim}^\prime\prime(w)(y)(x)])\]

And so frightening in its positive form is true of an individual just in case the degree of the maximal portion of fear that it stimulates is non-zero.

As it stands, this denotation is incomplete: while it makes no explicit reference to a particular experiencer, as desired, it does ensure that there is some experiencer or other when its truth conditions are met, since where there is a stimulus of an experience, there is also an experiencer (cf. §1.1.2). The psych predicate is therefore true of an individual just in case it stimulates some non-zero degree of fear or other, in any experiencer: and so frightening turns out to mean roughly frightening to something.

Similar proposals for arguably experiential predicates, including beautiful (Lakoff 1970: 127) and fun (Chierchia 1984: 405, ex. 3) have been made in passing, but this semantics is both too strong and too weak.\(^{24}\) Too strong, because as shown in §??, experiential predicates do not enforce direct experience effects on their own, and so generally do not require for their application that any experiencer be stimulated by the predicated individual. Too weak, because as Lasersohn (2005: 653) notes, it is possible without semantic incompetence to evaluate such predications as false even where some experiencer or other has the relevant experience: The movie isn’t (actually) frightening, even though it’s frightening to Alfonse is not contradictory, while #The movie isn’t (actually) frightening to anyone, even though it’s frightening to Alfonse is.

What’s missing is the dispositional component of the predicate mentioned above: experiential predications typically have a generic flavor, such that they hold of the predicated individual just in case that individual becomes a stimulus of the experiential kind ‘in the appropriate circumstances.’ And so in order for experiential dispositions to be actualized, what Chierchia (1995: 195-196) calls their ‘felicity conditions’ have to be met. For experiential predicates, these conditions involve a number of uncontroversial but only vaguely defined prerequisites: the individual in question must be positioned to make ‘experiential contact’ with an experiencer, the experiencer must have working sensory or imaginative faculties, the individual and the experiencer must not be defective in any way that relevantly obscures the properties of the potential stimulus (e.g., the movie must be played at the right volume, and not obscured from view, and the potential experiencer must have the relevant knowledge of what’s being portrayed), and so on. A typical predication using an experiential predicate is true where the establishment of all these felicity conditions guarantees that the individual is

\(^{24}\)Chierchia’s treatment is more complicated than this: the existential quantification over experiencers that fun introduces when its internal argument is desaturated interacts with a generic operator, contributed by tense/aspect, such that generic predications of fun in the present tense roughly state that in general, there is an experiencer for which the predicated individual is fun, where the generic operator must do the work of specifying the relevant conditions under which there is such an experiencer. Episodic predications don’t have this generic reading, leaving the plain existential quantification intact. As will be seen in §1.3.2, this approach is ultimately quite resonant with what will be offered here: cf. Chierchia (1984: 404-406).
a stimulus of the relevant experiential kind.

The need to interpret experiential predicates generically has been stressed by Snyder (2013) and Pearson (2013), and both independently develop accounts that introduce genericity by means of an operator that scopes over the predicate. However, they both assume that this genericity involves generic quantification over experiencers, and so roughly interpret experiential predicates as being true of an individual just in case that individual is the stimulus of a certain kind of experience ‘for experiencers generally.’

They begin with the observation that experiential predicates are individual-level, as diagnosed by the classic tests in Milsark (1979) and Carlson (1980): for instance, like other individual-level predicates, experiential predicates are degraded in the coda of existential there-constructions (74), and in predicate position of a small clause beneath a verb of perception (75); they also produce generic, rather than existential, readings when predicated of kinds (76). These observations extend to the deverbal psych predicates discussed here.

(74) a. ?There were people annoying.
   b. ?There were people tall.
   c. There were people sick.

(75) a. ?I’ve seen Alfonse frustrating.
   b. ?I’ve seen Alfonse smart.
   c. I’ve seen Alfonse drunk.

(76) a. Hitchcock movies are frightening.
   b. Hitchcock movies are well-directed.
   c. Hitchcock movies are in the den.

Next, following Chierchia (1995), they propose that individual-level predicates must be licensed by an operator GEN that scopes over them. However, both Snyder and Pearson (cf. Pearson 2013: 122, ex. 45) assume a contextualist denotation for the adjective, which takes an internal experencer argument. The result is that where this argument is implicit, it enters the composition as a variable which can then be bound by GEN, and the denotation of the resulting predicate is true of an individual just in case it produces the relevant experience in experiencers generally (where the felicity conditions of the generic are met). And so the structure of The movie is frightening looks something like the following (reconstructing in part from Pearson 2013: 127, ex. 65b, ignoring the movement of the subject).

25On Chierchia’s analysis, GEN is actually licensed by a null habitual aspectual morpheme Hab, which requires a generic operator in its specifier due to spec-head agreement: cf. Cherchia (1995: 197-198, esp. ex. 53). He ultimately decides that individual-level predicates, including individual-level adjectives like those examined here, carry a habitual morpheme in the lexicon, and so always require GEN to appear for local licensing (cf. ibid. §3.4.2). This creates the result that experiential predicates, insofar as they are individual-level, cannot appear absent GEN – this appears to be problematic, as §1.3.2 will address. In the above this is temporarily ignored, and it is taken for granted that GEN appears only when needed, regardless of how this happens.
Adopting a standard contextualist denotation for *frightening* as in (78), where *(w)(x)(y) is true just in case y frightens x at w, and ‘’ is the generic quantifier, the resulting truth conditions are roughly as in (79).

(78) \[ \text{frightening}^\prime\prime(w)(x)(y) \]

(79) \[ \mathcal{G}[x,w][\text{frightening}^\prime\prime(w)(x)(\iota y[\text{movie}^\prime(w)(y)])] \]

(79) is to be read as ‘generally, given a world w and experiencer x, the movie at w frightens x at w.’ The quantification over both worlds and experiencers can be read as enforcing the relevant felicity conditions: thus, the denotation is concerned with all worlds and individuals within some relevantly constrained set. This truth condition is then meant to be that expressed by a non-exocentric predication using the experiential predicate.

The issue with quantifying over experiencers in this way is that it does not describe the truth conditions of the predication correctly. There is no plausible way to construe a generic quantification amounting to ‘the movie is frightening to experiencers generally’ that matches how speakers competently evaluate the non-exocentric denotation of *frightening*. Typically, as noted in Chapter 1 and stressed by Lasersohn (2005: 670) and MacFarlane (2014: 4), speakers tend to evaluate an experiential predicate as true of an individual just in case that individual is disposed to produce the relevant experience in themselves. There are two major exceptions to this tendency: exocentric readings, to be addressed in §1.3.2, and evaluation when taking one’s own experience to be defective, to be addressed in §???. But these are not what the proposed reading in (79) is intended to model, and so speakers’ behavior in typically evaluating these predicates relative to themselves, and not to experiencers generally, is mysterious.

Snyder (2013: 297), in addressing an objection in this vein from Lasersohn (2005: 653-654), responds that the worry comes from an insufficiently nuanced understanding of genericity. If one adopts a modal notion of generic quantification in the vein Krifka et al. (1995: 52, ex. 86), the truth conditions are meant to come out correctly. What Snyder ends up with is as follows (cf. *ibid.* 2013: 304, ex. 59), where \( B_w \) is a modal base determined by w, and \( \leq_w \) is an ordering on \( B_w \) fixed by an ordering source, where \( w' \leq_w w'' \) just in case \( w' \) is ‘at least as normal’ according to the generic ordering on \( B_w \) as \( w'' \).

(80) \[ \text{GEN}_x \text{ the movie is frightening } x \] \[ = \forall x, w' \in B_w [\exists w'' \in B_w [w'' \leq_w w' \land \forall w''' \in B_w [w''' \leq_w w'' \rightarrow \text{frightening}^\prime\prime(w''')(x)(\iota y[\text{movie}^\prime(w)(y)])]] \]

The rough idea is as follows. Supposing there is a modal base \( B_w \), and an ordering on \( B_w \) that ranks worlds according to how ‘normal’ they are, to say the movie is frightening is to say that for any experiencer x, the movie frightens x at all worlds within \( B_w \) that approach
ideal normality. It therefore doesn’t follow that every experiencer, or any particular amount
of experiencers, are actually frightened by the movie, because ideal conditions may not hold;
but experiencers generally do have the relevant experiences insofar as those conditions do
hold.

It’s isn’t clear how this gloss on generic truth conditions helps – conditions on ideal
normality across experiencers are also irrelevant to the usual evaluation of the experiential
predicate, if this normality is anything like what’s usually tracked by generics. Where Al-
fonse is frightened by a movie, and admits that he is an abnormal experiencer with strange
tastes, he is still free to evaluate whether the movie is frightening based solely on his own
experiences.\textsuperscript{26} Conditions enforced by the generic on experiencers are irrelevant to truth
conditions, \textit{except} insofar as those conditions are defined in terms of oneself as experiencer,
i.e. unless speakers for some reason conventionally take themselves to be ideally normal
experiencers in ideally normal circumstances.

This latter option, which would make ideal normality and one’s own experiential reactions
coincide, perhaps for some pragmatic reason, is implementable in theory, and Snyder (\textit{ibid.}
§6.4) in fact briefly entertains relativizing modal bases and ordering sources to experiencers in
a way that might suggest just such a treatment. But in that case, the generic quantification
over experiencers does no work: \textit{either} the generic quantification can fail to reflect auto-centric
evaluation, in which case the truth conditions are wrong, \textit{or} it can reflect it, in which case the
result of generic quantification is identical to a relativist treatment, on which the predicate
is evaluated purely with respect to oneself, and generic quantification doesn’t perform its
ordinary function due to some sort of pragmatic interference, so there is no clear motivation
for positing the quantification to begin with.

This issue becomes clearer in Pearson (2013)’s treatment. Impressed by the data suggesting
that speakers evaluate experiential predicates with respect to their own experiences, she
posits that the covert variable over which $\text{GEN}$ quantifies ranges only over those individuals
with which the speaker\textsuperscript{27} ‘identifies.’ The resulting denotation for \textit{The movie is frightening}
then turns out to be as follows (cf. Pearson \textit{ibid.} 127, ex. 65), where $I''(w)(x)(y)$ is true iff $x$
‘identifies with’ $y$ at $w$.\textsuperscript{28} $c$ is a context of utterance, $s_c$ the speaker in $c$, $R$ is an accessibility
relation on worlds, and $C(x)(y)(w)$ is true iff $w$ is a world at which $x$ and $y$ are ‘contextually
relevant.’\textsuperscript{29}

\begin{equation}
\left[ \text{GEN}_x \ \text{the movie is frightening } x \right]^{c,w} = \\
\forall x, w' [ wRW' \land C(x[movie'(w)(y)](x)(w') \land I''(w')(s_c)(x) ] \rightarrow \\
\end{equation}

\textsuperscript{26}Of course, he might in some cases be free not to as well, if his abnormality causes him to think of
himself as a defective experiencer (cf. §??). The point, however, is that there is not only nothing \textit{wrong}
with his evaluating the predicate based on his own experiences, it represents the usual, competent use of the
predicate. A speaker is not semantically incompetent for having an odd opinion.

\textsuperscript{27}This apparently won’t work – presumably, what’s wanted is for the variable to range over the individuals
with whom the assessor or evaluator of the predicate identifies, not the speaker. Otherwise, all the old
contextualist problems addressed in Chapter 1 resurface, as the predicate is anchored to the speaker for its
content.

\textsuperscript{28}Pearson does not relativize the identify-relation to worlds, but it seems that it must be so relativized; it
isn’t clear what it means for one individual to identify with another \textit{simpliciter}, and presumably identification
conditions change counterfactually (as they must if they’re to track the speaker’s experiences).

\textsuperscript{29}This notion of contextual relevance looks to be an implementation of felicity conditions by another name.
Thus, \textit{the movie is frightening} is true just in case at all accessible worlds subject to various contextual conditions set by \(C\), the movie frightens all individuals with which the speaker identifies. The sensitivity of generic quantification to the speaker’s experiences is thus ‘baked in:’ the only experiencers that ‘count’ are those that, in addition to meeting the normal felicity conditions on generic quantification, match the speaker in some relevant way.

But now the superfluity of the quantification over experiencers is obvious: for if the truth conditions are correct, the ‘identify-with’ relation must track the experiential reactions of the speaker insofar as they relate to fear engendered by the movie. But in this case, the identification relation can simply be done away with: it is the same just to say that the speaker is frightened by the movie where the felicity conditions enforced by \(C\) are met.\(^{30}\)

With the above said, it’s important to understand that the present treatment will implement genericity in a way that does not generically quantify over experiencers. This is reflected in the denotation already given in (73): there is no variable representing an experiencer for a generic operator to bind. In adding genericity to this denotation, the result will be a predicate simply true of an individual just in case it is the stimulus of a certain kind of experience whenever the relevant felicity conditions are met.

The revised denotation for \(-ing\) that implements genericity in this experiencer-independent way then works as follows. \(-ing\) composes with a transitive measure function \(R\), denoted by a psych verb, and invokes an accessibility relation \(\rho_{\kappa''(R)}\), which can be thought of as an accessibility relation on worlds as they pertain to the felicity conditions for the production of \(\kappa''(R)\). Thus, where \(R\) is the intension of \textit{frighten}, \(\rho_{\kappa''(R)}\) is \(\rho_{\text{FEAR}}\), and \(w\rho_{\text{FEAR}}w'\) just in case \(w'\) is accessible from \(w\) according to the fear-production accessibility relation. This relation is in turn constrained as follows.

\begin{equation}
(82) \quad w\rho_k w' \text{ iff:}
\begin{enumerate}
  \item \(w'\) preserves all intrinsic properties holding at \(w\) of potential stimuli relevant for their production of \(k\);
  \item \(w'\)’s conditions, given these properties, are ideal for the production of \(k\) by potential stimuli.
\end{enumerate}
\end{equation}

If one likes, one can think of these two clauses as reflecting the operation of a modal base and an ordering source respectively, which work to determine a set of accessible worlds \(w'\) from each world of evaluation \(w\). (82-a) sets the modal base, as containing all worlds \(w'\) that are compatible with the intrinsic properties of stimuli at \(w\) relevant to the production of a kind. This would mean, in the case of movies and how frightening they are, that in all such worlds the movies themselves do not change their content across these worlds – they are, in whatever relevant respect, the ‘same movies.’\(^{31}\)

\(^{30}\)For Pearson, this is actually not quite true: this is because she allows that the speaker may sometimes be excluded from the relevance conditions, which leads to exocentric readings of experiential predicates. See Pearson (2013: 142-143).

\(^{31}\)The restrictions of the modal base and ordering source are necessary to enforce a distinction between two types of counterfactual reasoning: first, that regarding what experiences an individual is disposed to produce given that only surrounding conditions are different (this is the type of reasoning tracked by the application of the psych predicate relative to the world of evaluation), and second, that regarding what experiences an
(82-b) then reflects an ordering source, such that the worlds in this modal base that are quantified over are those that are ideal, given the intrinsic properties of the stimuli, for the production of the experiential kind. With respect to the movies again, this will mean that given that they are the ‘same’ movies, the appropriate conditions for viewing those movies to produce fear have been actualized, as described above with respect to felicity conditions. The worlds that are quantified over in expressing the generic flavor of -ing are thus those worlds in which the felicity conditions for experiencing an experiential kind from stimuli, such as they actually are, are met.32

One final stipulation: it is taken for granted that there is some one degree of the relevant experiential kind that is produced under ideal conditions. To speak in terms of the ordering source, those worlds ranked highest with respect to the felicity conditions for the production of the kind converge on how much of that kind is produced. With that said, -ing composes with the psych verb to return a measure function, which takes an individual and returns that very degree \( d \) produced under said ideal conditions.

\[
(83) \quad [-\text{ing}]^w = \lambda R_{s,(e,ed)} \lambda x.e.td[\forall w' : wRw'[d = \delta_{\text{fear}}(\sigma y[\text{stim}''(w')(y)(x))]]
\]

And the denotation for frightening, and its positive form, is as follows.

\[
(84) \quad [\text{frightening}]^w = [-\text{ing}]^w(\lambda w_s. [\text{frighten}]^w) \\
= \lambda x.e.td[\forall w' : wRw'[d = \delta_{\text{fear}}(\sigma y[\text{stim}''(w')(y)(x))]]
\]

\[
(85) \quad [\text{POS frightening}]^w = [\text{POS}]^w(\lambda w_s. [\text{frightening}]^w) \\
= \lambda x.e_0 < \text{id}[\forall w' : wRw'[d = \delta_{\text{fear}}(\sigma y[\text{stim}''(w')(y)(x))]]
\]

The positive form of frightening is therefore true of an individual just in case in all worlds relevantly similar to the world of evaluation in which the felicity conditions relevant to causing fear are met, that individual is the stimulus of a non-zero degree of fear (which is by definition fear in some experiencer or other). In short: a frightening individual is one that is disposed to produce fear \( \text{simply} \) – and so on for every deverbal psych predicate, swapping out for the relevant experiential kind.

This treatment anchors the genericity involved in the predicate intrinsically to the adjective, so that all uses of experiential predicates encode this genericity. §1.3.2 will give some reasons to believe this is a simplification, and suggest that genericity is in fact contributed by a distinct element, as Snyder and Pearson maintain.

Since the denotation in (85) appeals to a quantification over worlds in which some felicity conditions are met, and there is no guarantee that those conditions are met in the individual would be disposed to produce if it changed in the relevant intrinsic way, like a movie changing its directing, or a food changing its flavor (this is the type of reasoning tracked by counterfactual assessments of experiential predicates, like \( \text{If the movie were frightening.} \)).

32More formally, and using the language of Kratzer (1986): Let \( f_{w,k} \), \( g_{w,k} \) be conversational backgrounds, i.e. sets of propositions (objects of type \( \langle s,t \rangle \)) determined at \( w \). \( f_{w,k} \) is the set of propositions true at \( w \) pertaining the the properties true of potential stimuli relevant to their production of \( k \). Then where \( f_{w,k,S} \) is the set of characteristic sets of elements of \( f_{w,k} \), \( B_{w,k,S} = \bigcap f_{w,k,S} \) is the modal base relevant to \( k \) at \( w \). \( g_{w,k} \) is the set of propositions true at \( w \) pertaining to the conditions relevant for the production of \( k \) by stimuli at \( w \) given \( f_{w,k} \). \( \preceq_{g_{w,k}} \) is that partial order on \( B_{w,k} \) determined by \( g_{w,k} \) such that for any \( w', w'' \): \( w'' \preceq_{g_{w,k}} w' \) iff \( \forall p \in g_{w,k}[p(w') \rightarrow p(w'')] \). Adopting the limit assumption, \( \text{BEST}_{B_{w,k}} := \{ w' : \exists w''[w'' \preceq_{g_{w,k}} w'] \} \). Then \( wRw' \iff w' \in \text{BEST}_{B_{w,k}} \).
world of evaluation, it follows that the truth of the predicate does not hinge on the predicted individual actually stimulating the relevant experience in that world. Nor, even when that experience is stimulated, does a predication using *frightening* merely report this actual stimulation. The reading is both weaker and stronger than this: weaker, because the predicate can hold of an individual even where it has never stimulated any experience at all, and stronger, because it holds of an individual not just when it happens to produce the relevant experience, but where it counterfactually would produce that experience whenever the felicity conditions are met.

This means that, as noted in § ??, positive forms of experiential predicates do not give rise to presuppositions of direct experience, unlike psych verbs. To illustrate briefly, the interpretation of (86-a) is as in (87), taking an interpretation of *wonder* as in (86-b), where ‘?’ is a polar question operator.

(86)  
\[
a. \text{Alfonse wonders whether the movie is frightening.} \\
b. \left[ \text{wonder}\right] \lambda p \cdot \lambda x. \text{wonder}(\left( ? p \right) (x))
\]

(87)  
\[
\left[ \text{Alfonse wonders [whether [the movie] [is [POS [frightening]]]]]} \right] ^{w} = \text{wonder''}(\left( ? \lambda w' . \text{FEAR} < d \forall w'' : w' R w'' [d = \delta \text{FEAR}(\sigma y [\text{stim}''(w'')(y)(x)])])}(a)
\]

Thus, what Alfonse wonders about is the truth of the proposition that the movie is disposed, under the relevant felicity conditions, to be the stimulus of a non-zero degree of fear. He is not reported as wondering whether the movie is frightening to any experiencer, and so he can coherently wonder whether the movie is frightening while committed to thinking either that no one has ever seen the movie, or that someone has. The same will hold of all the relevant intensional contexts that give rise to no direct experience presuppositions. In fact, even the unembedded *The movie is frightening* gives rise to no such presupposition, although it triggers a speaker-oriented acquaintance inference, for reasons to be explored in § ??.

What are the felicity conditions relevant to the production of an experiential kind? Since they are only loosely defined, the linguistic conventions don’t settle exactly what they are. Speakers thus have diverging opinions about them, which result in diverging evaluations of the generic predicate, even where there is agreement on the state of the world. And so even where Alfonse and Bethany are fully informed about the same horror movie, and take it to produce fear only at night when the viewer is alone, Alfonse might take the movie not to be frightening, since he takes the felicity conditions for being frightening to be met in other circumstances as well, where no fear is produced (e.g., when not alone). But Bethany might then take it to be frightening, since she takes the relevant felicity conditions for the movie producing fear to involve the viewer being alone at night.

Most of these felicity conditions pertain to any sort of genericity, and so are orthogonal to the present concern with experiential semantics, but there is one crucial exception: these conditions are also sensitive to which *experiencers* are stimulated by the individual in the relevant conditions, and so part of the felicity conditions being met will be that the stimulus comes into contact with the ‘right’ sort of experiencer. Chapter 5 deals with this issue, and shows that the interaction of experiential predicates with direct evidentiality causes speakers to treat their own experiences as those tracking the felicity conditions of the predicate, resulting in autocentric evaluation.
1.3.2 Exocentricity, aspect, and definiteness

Exocentric readings of experiential predicates are those that are contextually anchored to some relevant experiencer, despite not occurring with any overt marker of this experiencer.\(^{33}\) They do not create the sorts of evaluative, merely dispositional readings accounted for in §1.3.1. Rather, they simply report that the experiencer in question has the relevant experience, directed toward the relevant stimulus.

Exocentric readings occur with deverbal psych predicates, in all the environments expected of experiential predicates generally. Sometimes, strong contextual cues are needed to make an exocentric reading felicitous, as with (88-a), which might be anchored to Alfonse's experiences if uttered while looking at him watching a horror movie, clearly frightened. In other contexts, such as (88-b) and (88-c), an exocentric reading is more easily accessible, and may even be the default.

\begin{align*}
\text{(88) a. The movie is frightening.} & \quad \leftrightarrow \quad \text{Alfonse has experienced fear of the movie.} \\
\text{b. Alfonse went to a funeral service. It was distressing.} & \quad \leftrightarrow \quad \text{Alfonse has experienced distress at the funeral service.} \\
\text{c. Alfonse's boss gave him a boring speech.} & \quad \leftrightarrow \quad \text{Alfonse has experienced boredom at his boss' speech.}
\end{align*}

Exocentric readings also give rise to the presuppositions of direct experience indicated by the hooked arrows in (88); these are the same that arise where an experiencer is overtly marked, as with the objects of object-experiencer psych verbs (cf. §1.2.2).

These presuppositions also display the normal projective and accommodative behavior. Thus for instance, (89) on its exocentric reading, where the speaker wonders only about how the movie affected Alfonse, locally accommodates the presupposition that Alfonse experienced the movie in a way appropriate to engendering fear; what the speaker wonders must include whether Alfonse actually saw the movie and was frightened by it, and not just whether the movie would have frightened him, had he seen it.

\begin{align*}
\text{(89) Alfonse went to see a movie. I wonder if it was frightening.}
\end{align*}

The same is true for any of the various intensional contexts reviewed in §??: the behavior of the experiential presupposition is as expected where reference to an experiencer is made by the embedded content. Exocentric readings therefore behave 'as if' an overt experiencer were present: they are not evaluated autocentrically, but rather relative to the experiences of

\[^{33}\text{Some confusion has arisen surrounding the terms 'autocentric' and 'exocentric' since their introduction to the relativist literature in Lasersohn (2005). A number of researchers have taken autocentric uses of experiential predicates to be anchored to the speaker for evaluation of truth, and this in turn has led to some misguided criticisms of the pragmatics of relativism (e.g. Wolf 2016: §2.2.1). Autocentricity has nothing to do with the speaker: it refers to the evaluation of predicates with oneself as the relevant experiencer, whether one is the speaker or not. Exocentricity is then contra-defined by Lasersohn as evaluation of the predicate relative to someone other than oneself (or at a time other than the assessment time: cf. Lasersohn 2017: 140-141), and has nothing to do with the speaker either. In the present text, autocentric evaluation is taken as the default way to evaluate 'bare' uses of experiential predicates, while exocentric uses of experiential predicates are those that anchor to a contextually relevant experiencer for evaluation, whether this is the speaker or not.}\]
the contextually relevant individual; they do not give rise to acquaintance inferences; and they report an actualized experiential state, rather than reporting the experience a stimulus would engender under the right felicity conditions.

The naïve contextualism criticized in §? can be summarized as the position that all occurrences of experiential predicates with no overt experiencer are exocentric. Chapter 1 showed that this is not correct, and that a solely exocentric account of experiential predicates lacks the expressive power to capture all of their readings. Among those views, like the present, that allow for non-exocentric readings, the systematic relation between readings in which exocentricity is present and absent needs to be explicated.

Here there is a fundamental choice point as to how exocentricity should be treated. The above suggests that exocentricity is a matter of semantic content, and therefore that the content of experiential predicates differs between exocentric and non-exocentric readings: this is the view espoused by Stephenson (2007: §7.2) and MacFarlane (2014: §7.2.6), both of whom suggest roughly that an exocentric occurrence e.g. of frightening is equivalent in content to frightening to x, for some contextually salient x.

But Lasersohn (2005: §6.1; 2017: ch. 7) offers an alternative view, according to which exocentricity is not a matter of semantic content, but rather pertains to the pragmatics of truth assessment. According to Lasersohn, the semantic content of a sentence like (88-a) is invariant across exocentric and non-exocentric readings: both state that the movie is frightening simpliciter, which according to a relativist semantics (cf. §??) requires that an experiencer be supplied during truth assessment in order for the content in question to yield a truth value. It is then a pragmatic matter which experiencer is provided; and while autocentric evaluation, for which assessors take themselves to be the relevant experiencers, is a robust default, under certain circumstances another contextually relevant experiencer might be supplied as well, and this yields the exocentric interpretation.

Thus the predicate frightening has the denotation in (90-a) for all its occurrences, where the value for the experiencer intensional parameter x is to be supplied during truth assessment, and the extension of (88-a) is as in (90-b). A supplementary pragmatic norm as in (91) then allows for the value of the experiencer to shift depending on the pragmatic purposes of assessment (and mutatis mutandis for falsity).

(90)  
\begin{align*}
\text{a. } & \llbracket \text{frightening}\rrbracket^{w,x} = \lambda y.\delta_{\text{fear}}(w)(x)(y) \\
\text{b. } & \llbracket [\text{the movie}] \text{ is} [\text{POS frightening}] \rrbracket^{w,x} \\
& = 0_{\text{fear}} < \delta_{\text{fear}}(w)(x)(\text{movie}'(w)(y))
\end{align*}

(91)  
\begin{align*}
\text{a. } & \phi \text{ is properly assessed as true in } c' \text{ iff } \phi(w_{c'})(\epsilon_{c'}), \text{ where } \epsilon_{c'} \text{ is the experiencer relevant for truth assessment in } c'. \\
& \text{ (and is improperly assessed as true otherwise).}
\text{b. } & \text{In the absence of explicit contextual cues, } \epsilon_{c'} = a_{c'}.
\end{align*}

The result is that (88-a) expresses a constant proposition, which will be assessed properly as true or false depending on who the contextually relevant experiencer is: where it is Alfonse’s

---

Footnote: It is of course possible that an exocentric reading be anchored to the speaker, where the speaker’s experiences are for some reason the topic of discussion. In such a case, a presupposition of direct experience anchored to the speaker, similar to that seen in frightening to me, arises, rather than an acquaintance inference.
experiences under discussion, the truth or falsity of the expressed proposition will track whether or not the movie frightens Alfonse.

This pragmatic treatment of exocentricity ought to be rejected, for three reasons: the first is a theoretical concern, and the other two are empirical. The first problem has to do with the fact that exocentricity survives embedding in intensional contexts, including attitude reports, as shown by (89). A belief report such as (92) can also be read exocentrically, where Alfonse is reported as interested only in Bethany’s reaction to the movie, and so what he thinks is roughly that the movie was frightening to Bethany.

(92) Alfonse thinks that the movie was frightening.

The issue is that whether (92) is true does not depend on the value supplied by the experiencer parameter: this is because think, being an intensional verb, operates on the content of its embedded clause. The sentence is thus true when Alfonse believes that content, and false when he doesn’t believe it, and the experiencer parameter is idle in the evaluation of the truth of (92). This is as it should be, since the truth of the belief ascription is not experiencer-sensitive, but depends only on the non-experiential matter of what Alfonse believes.

But if the embedded clause the movie was frightening has the same content regardless of whether its use is exocentric or not, then what Alfonse is reported as believing in both the exocentric and non-exocentric case must be the same, and so the truth value of the belief ascription cannot change across the two cases. In other words, the pragmatic treatment of exocentricity, so long as think takes a propositional argument as normal, predicts that exocentricity ought not to appear in attitude reports at all, contrary to fact.

Aware of this problem, Lasersohn (2005: §6.2) alters the semantics of attitude verbs, effectively to include an extra argument for an experiencer. Thus, an individual does not believe a proposition simpliciter, but only a proposition relative to an experiencer. He later updates the denotation to simply existentially quantify over experiencers, so that think would be as follows, where ‘believe’ denotes a triadic relation relative to worlds, such that believe"(w)(p)(x)(y) is true iff y believes p at w relative to experiencer x (adapted from Lasersohn 2017: 158, ex. 188).35

(93) [think]^{w,x} = λp.e.λy.e.∃z[believe"(w)(p)(z)(y)]

The idea is therefore that when (92) has a reading relevant to Bethany’s experiences, this is encoded in the content of the belief report: Alfonse believes the proposition denoted by the movie was frightening, relative to Bethany as experiencer, even if he doesn’t believe it relative to some other experiencer, or simpliciter as in the default de se case.

As shown in §6.2, however, this cannot work as a generalized account of attitude reports, because it does not track factivity and (dis)agreement involving non-exocentric belief, where belief tracks individuals’ own experiences in a way that allows them to take the believed propositions to be true simpliciter. To remedy this, a de se denotation that tracks the

35This denotation would appear to make Alfonse thinks that the movie is frightening mean that Alfonse thinks the movie is frightening to some experiencer or other. Presumably, some domain restriction on the existential quantification is meant to narrow down the options so that the report is anchored to the contextually relevant experiencer.
notion of belief *simpliciter* was introduced (cf. §??). The denotation in (93) cannot perform this function, since it only allows reports as to whether an agent believes that individuals are frightening, etc. to some experiencer or other, reviving all the old contextualist problems (cf. fn. ??).

The *de se* notion of belief for non-exocentric belief reports is thus needed as well. Lasersohn recognizes this (cf. Lasersohn 2017: §8.6), and so offers a notion of properly ‘autocentric’ belief, which corresponds to what has been referred to in the present work as belief *simpliciter*. But this notion of belief, insofar as it is tracked by attitude reports, would have to be introduced by a separate lexical item that lacks an experiencer argument, or has no existential quantification over experiencers (as entertained in Lasersohn 2009: 366-367). The result is the multiplication of attitude expressions, and the effective positing of a special lexical item like (93) meant specifically to take care of exocentric think-reports, alongside the ordinary non-exocentric item. The same move would have to be made for every sort of attitude predicate that embeds exocentric reports, and so there is an explosion of homophonous attitude predicates.

Further, this doubling of attitude predicates doesn’t increase the expressive power of the semantics. This is because Lasersohn defines belief in a proposition relative to an experiencer as identical to autocentric (*simpliciter*) belief in a proposition where the content of the experiential predicate is itself relativized to an experiencer. Thus, to believe *simpliciter* that the movie is frightening *to Alfonse* is exactly the same as to believe, relative to Alfonse as experiencer, that the movie is frightening *simpliciter*. If implicit relativizations of the predicate to an experiencer were allowed, then the single notion of belief *simpliciter* would therefore suffice. The refusal to encode exocentricity in the content of the predicate thus results in a purposeless proliferation of attitude predicates.

Second, a semantic concern: as noted above, exocentric occurrences of predicates give rise to direct experience presuppositions, while non-exocentric occurrences do not. If an identical proposition were to be assessed in both cases, and the only difference between the two assessments is the value contextually supplied for the experiencer parameter, this difference is inexplicable. But it will be made sense of in what’s to come, where exocentricity is cast in terms of content.

Third, a pragmatic concern: this account predicts that where a speaker utters a sentence like (88-a), intending an exocentric use of the predicate, that speaker ought to be competently taken to have the truth value of what they said change as the pragmatic concerns of truth assessment change at a different context of assessment. Whenever the relevant experiencer for exocentric evaluation is someone to whom the movie wasn’t frightening, one ought to think that the speaker said something false, even where the speaker at the context of utterance intended the utterance to talk about Alfonse’s experiences, all interlocutors at the context of utterance understood and were mutually agreed on this, and the movie indeed was frightening...
to Alfonse at that time.

In other words, where the target of exocentric assessment is not fixed by the context of utterance, but varies with the context of assessment, one ought to find that the truth of exocentric utterances varies from context to context. But this apparently does not happen: where (88-a) originally speaks about Alfonse’s experience, the speaker has spoken truly so long as Alfonse experienced the relevant fear, and cannot ‘come to have’ spoken falsely in other circumstances, in virtue of the pragmatic concerns of the competent assessor.38

Of course, the pragmatic account of exocentricity can always appeal to norms that govern when it is or is not appropriate to assess for truth relative to a certain experiencer (cf. Lasersohn 2017: 143), and so give some pragmatic story about why an utterance like (88-a), when initially anchored to Alfonse, will typically, or maybe invariantly, have to be assessed relative to Alfonse as experiencer.39 But to do this is just to say that the norms of assessment for exocentrically evaluated statements track the circumstances of the context of utterance – in other words, that exocentric evaluation happens as if it were not governed by the context of assessment at all. But this is just what one would expect anyway if the context of utterance fixed what experiencer the predicate was relativized to, and so the content of the sentence itself encoded the relevant experiencer.

For these reasons, the present approach holds that exocentricity is a matter of the semantic content of the experiential predicate, and not a feature of the pragmatics of truth assessment. Having said that, there is still the question of how to implement the semantic relativization of an experiential predicate to an implicit experiencer. One possibility is simply to posit silent experiential modifiers, which re-introduce the experiencer desaturated by -ing: this was entertained in §?? and §?? in sketching a contextualist and relativist semantics for exocentricity, respectively. §1.3.3 will demonstrate that the present treatment can handle such experiential modifiers when they appear overtly, as with to-headed PPs, and so it is formally trivial to offer the same treatment to covert experiencers. Some story would then need to be told about the distribution of these covert experiencers, and the pragmatic

38This apparently differs from ‘bare’ experiential predicates meant to be assessed autocentrically: one can indeed, in virtue of changing one’s own experiential dispositions, come to think that such a proposition, which one once thought was true, is instead false on further reflection. And so speakers can ‘change their minds’ about truth evaluation of experiential predicates, based solely on a change in the experiences relative to which the predicate is assessed, where non-exocentric readings are at stake: cf. MacFarlane (2007: 20-21), on changing one’s mind about whether fish sticks are delicious. Stephenson (2007a: 521-522) notes in a similar vein that exocentric readings, because their interpretation is fixed to the context of utterance like an indexically anchored value, tend not to license so-called ‘faultless disagreement’ (cf. fn. ??). Lasersohn (2017: 149-150) claims that they actually do allow for faultless disagreement, and that interlocutors can, even in an exocentrically-minded context, refuse to coordinate their evaluations; but his examples show no more than that speakers can refuse to be cooperative, and contest how the parameters fixing content at a context of utterance are to be set, and this a feature of context-sensitive language with covert material generally.

39Even this latter option will probably not work, for it is the proposition that is assessed for truth, not the sentence or speech act. It cannot be that the proposition that the movie was frightening becomes permanently anchored to Alfonse for evaluation: so the pragmatic theory of exocentricity must appeal to yet finer-grained notions of assessment, whereby one is obliged to assess a certain proposition relative to a certain experiencer only when one is considering how that proposition was expressed by a certain speech act. The idea bears some resemblance to MacFarlane’s (2009) notion of ‘nonindexical contextualism,’ which in principle distinguishes truth of utterances from assessed truth of propositions those utterances express – but truth assessment apparently does not work this way.
conditions under which experiential predicates without overt experiencers are interpreted as having a covert experiencer, rather than as bare.

However, doing this would miss a generalization regarding the behavior of experiential predicates as special cases of individual-level predicates (cf. §1.3.1). The alternation between non-exocentric and exocentric interpretations of experiential predicates is apparently just one instantiation of a wider phenomenon: a huge number of individual-level predicates occur both with dispositional, generic-flavored interpretations, as well as episodic interpretations that report an actualization of this disposition. Where this distinction is implemented with respect to experiential predicates specifically, the result is exactly the non-exocentric/exocentric split: the former are dispositional and generic with respect to the conditions under which the stimulation of an experience occurs, and the latter report the stimulation of an experience.

On this view, exocentricity is not a phenomenon dependent on the behavior of covert experiencers, but rather arises out of the genericity of individual-level predicates and experiential semantics. To illustrate this behavior of individual-level predicates, consider adjectives like nice, smart, and and helpful. To be nice is to be disposed under the right felicity conditions to nice behavior; to be smart is to be disposed under such conditions to intelligent behavior; to be helpful is to be disposed under such conditions to help. These dispositional readings of the predicate are typical, but they all have counterparts that report an actualization of that disposition: thus, Alfonse was smart, read episodically, can report that there was an event of Alfonse displaying intelligent behavior (even if Alfonse himself is not smart), and so on for the other predicates.

Since on the present treatment, experiential adjectives have no internal argument, it is useful to look at a non-experiential example that also plausibly has no such argument in order to make the parallelism explicit. This can be done with the exemplar fast, taken to mean ‘disposed to move at a high speed.’

This dispositional reading is the default with ordinary predications in the present tense.

\[(94)\] Alfonse is fast.

This sort of reading does not require that Alfonse’s disposition to move quickly has ever been actualized. This is made more apparent with the right embedding environments, as beneath wonder: (95) might be uttered by a track coach scouting for a sprinter, even where this coach knows that Alfonse has never run seriously before, and so has never moved quickly in the relevant sense. What is wondered is whether, under the right felicity conditions, Alfonse would or could move at a high speed.

\[(95)\] I wonder whether Alfonse is fast.

But in the past tense, or with predictive will, there is no such default to the dispositional reading: both this and the episodic, actualized reading are available. Thus (96-a) can mean either that in the past (say, when he was younger or healthier) Alfonse had an ideal disposition to move at a high speed, or that there was some single event during which Alfonse

\[\text{\footnote{This is as opposed to fast read with respect to the time taken to finish accomplishments, which plausibly takes an internal argument manifesting as an at-phrase, e.g. fast at trimming trees. Nice, smart, and helpful also plausibly have such arguments, as shown in e.g. nice to Alfonse, smart to leave early, and helpful to me.}}\]
moved at a high speed. Likewise for (96-b), with a future orientation: it might mean that Alfonse will be ideally disposed to move at a high speed at some future time, or that during some future event (say, an upcoming race), Alfonse will move at a high speed.

\[(96)\]
\[
a. \text{Alfonse was fast.} \\
b. \text{Alfonse will be fast.}
\]

Surrounding context can also make the episodic, actualized readings more salient, or even default.

\[(97)\]
\[
a. \text{There was a race yesterday. Alfonse was fast.} \\
b. \text{There is a race tomorrow. Alfonse will be fast.}
\]

The second clauses in each of these examples can be true, even where Alfonse himself is not ‘generically’ fast at these times (and so where conditions are for some reason abnormal or non-ideal): all that matters is that Alfonse moves at a high speed during the relevant event.

In general, where the past and future tense are read perfectively, the actualized, episodic reading occurs. Where they are read imperfectively, the idealized, dispositional reading is the default, and occurs in the absence of strong contextual clues to the contrary. This, combined with the classical view (cf. Carlson ?) that the English present tense is imperfective, explains why the present tense in particular discourages the actualized reading without strong contextual cues. This is granted further support by the fact that it is precisely where the English present tense can be read perfectly, i.e. in the narrative or historical present, that the actualized reading reappears as the default. Thus where (98) is narrating an event, rather that reporting on Alfonse’s habits, the second clause again reports that Alfonse moves at a high speed during the presently narrated event.

\[(98)\] Alfonse takes off from the starting line. He’s fast.

This pattern of behavior is replicated exactly with experiential predicates, both with deverbal psych adjectives, and adjectives like \textit{tasty}. Thus (99-a) takes a non-exocentric reading as a strong default, but can be steered toward an exocentric reading where the contextual clues supporting this reading are overwhelming. (99-b) and (99-c) by contrast more freely take either exocentric or non-exocentric readings depending on the context: they can either be read as saying that at some past or future time, the movie had or will have the ideal disposition to stimulate fear, or that there was or will be some eventuality of the movie actually stimulating fear. Finally, contexts that coerce a preterite reading of the copula, as in (99-d) and (99-e), suggest the exocentric reading as the default. The reader can confirm that the same patterns hold for any experiential predicate, including e.g. \textit{tasty}.

\[(99)\]
\[
a. \text{The movie is frightening.} \\
b. \text{The movie was frightening.} \\
c. \text{The movie will be frightening.} \\
d. \text{Alfonse saw a movie. It was frightening.} \\
e. \text{Alfonse is going to see a movie. It will be frightening.}
\]

The narrative present further allows exocentricity to surface as a default even in the present
tense, and an explicit imperfective marker like used to forces the exocentric reading to require strong contextual clues once again: (100-b)’s most natural reading is one on which at some time in the past, the movie had a disposition to produce fear (which by implicature it no longer has).

(100)  
   a. Alfonse watches a movie. It’s frightening.
   b. The movie used to be frightening.

A full explanation of where and why these dispositional/actual differences occur among individual-level predicates would require an in-depth examination of the aspectual system of English, which is beyond the scope of this treatment. The claim is, however, that exocentricity in experiential predicates and actualized readings of individual-level predicates that have corresponding dispositional readings pattern alike in their behavior, as to where they are the default, and where they require contextual cues to be felicitous.\footnote{Lasersohn (2005: 671) suggests also that exocentric readings become increasingly felicitous in free indirect discourse. The examples he provides are questionable: free indirect discourse generally is capable of reporting according to a shifted narrator’s opinion, and it may be this fact, that said opinions are from this shifted narrator’s ‘point of view’ generally, that gives the illusion of exocentricity in the case of experimental predicates: cf. §?? on the connection between evaluative beliefs and experiences. As such the present account ignores these cases.}

At present, this distinction can be implemented by holding that these individual-level predicates can occur with or without a generic operator GEN internal to the adjective. The presence of this operator results in the dispositional reading, and its absence results in the actualized reading.\footnote{This treatment differs from that in Chierchia (1995), and discussed in §1.3.1, in that the generic operator is not a tense/aspect element merely licensed by the adjective. The reason for this is that the appearance of generic readings of adjectives is apparently not straightforwardly determined by the aspectual features of a clause. Where individual-level predicates appear in attributive position, they can have dispositional or actualized readings, even where the aspect of the clause as a whole is episodic, as in Alfonse chased the fast runner. The same thing happens with experiential predicates: Alfonse ordered a tasty meal has both an exocentric and non-exocentric reading of tasty available. But as noted above, an episodic clause does apparently require an exocentric reading for an individual-level predicate in predicate position.}

Thus the denotation of (the positive form of) fast is as follows, where fast′(w)(x) is true iff x moves at a high speed at w.

\begin{equation}
\text{[fast]}^w = \lambda x_e. \text{fast}'(w)(x)
\end{equation}

GEN then operates on the predicate and quantifies over worlds in which the relevant felicity conditions are met (102). The accessibility relation \( \rho_P \) is that relation relevant to the felicity conditions of \( P \): in the case of fast, this tracks the relevant conditions for moving at a high speed. The generic reading of fast is then as in (103): it denotes the property of being disposed under the relevant felicity conditions to move at a high speed.

\begin{align}
(102) & \quad \text{[GEN]}^w = \lambda P_{s,e}. \lambda x_e. \forall w': w \rho_P w'[P(w')(x)] \\
(103) & \quad \text{[GEN fast]}^w = \text{[GEN]}^w(\lambda w_s, \text{[fast]}^w) \\
& \quad = \lambda x_e. \forall w': w \rho_{w_s} x_e. \forall x_e. \text{fast}'(w')(x) w'[\text{fast}'(w')(x)]
\end{align}

Importing this treatment to an experiential predicate yields the desired results. Frightening in its positive form then just denotes the property of being the stimulus of a non-zero
degree of fear ((104), repeated from (73)). GEN composes with this to create the denotation proposed in §1.3.1 (cf. (85), which is equivalent to (105) given the assumption that the accessible worlds converge on a single degree of the experiential kind), assuming that for any experiential property \( P \), the relevant accessibility relation is that governed by the corresponding experiential kind.

\[
(104) \quad \text{POS frightening}^w = \lambda x. 0_{\text{fear}} < \delta_{\text{fear}}(\sigma y[stim''(w)(y)(x)])
\]

\[
(105) \quad \text{GEN [POS frightening]}^w = \text{GEN}^w(\lambda w, [\text{POS frightening}]^w)
= \lambda x. \forall w' : w \rho_{\text{fear}} w'[0_{\text{fear}} < \delta_{\text{fear}}(\sigma y[stim''(w') (y)(x)])]
\]

\[(104)\] is then the denotation for exocentric frightening, while (105) is the denotation for non-exocentric frightening, and so on for any experiential predicate. §1.3.1 showed how the non-exocentric denotation results in no presuppositions of direct experience. That the exocentric interpretation does carry such a presupposition can be seen from the fact that the term ‘\( \sigma y[stim''(w)(y)(x)] \)’ is defined only where \( x \), the stimulus, is indeed the stimulus of some experience at the world of evaluation \( w \), and that where defined, ‘\( \delta_{\text{fear}}(\sigma y[stim''(w)(y)(x)]) \)’ denotes the degree of fear stimulated by this experience. But where there is a stimulus, there must be an experiencer, due to the nature of experiential states (cf. §1.2.2); and where there is a stimulus of fear, there is an experiencer that has experienced fear.

The exocentric predicate simply holds where some relevant experiential state holds – there is no explicit reference in the denotation to what the relevant experiencer is. This means that where exocentric reports are intended to target specific experiencers, speakers must coordinate to figure out which experiencer is relevant – the harder this is to do, the less plausible an exocentric interpretation becomes. Since the exocentric interpretation in effect enforces an existential generalization over experiencers (cf. the discussion of (73) in §1.3.1), narrowing down the interpretation to the relevant experiencer can be implemented via domain restriction on \( \sigma \), which is anchored to a parameter fixed at the context of utterance, plausibly like all domain restriction. Thus (99-a)’s interpretation, where Alfonse’s experiences are relevant, would have the predicate’s denotation as follows, where \( r_c \) is the restriction relevant in the context of utterance \( c \).

\[
(106) \quad [\text{POS frightening}]^{c,w} = \lambda x. 0_{\text{fear}} < \delta_{\text{fear}}(\sigma y : r_c(w)(y)[stim''(w)(y)(x)])
\]

\[
(107) \quad \text{[the movie] [is [POS frightening]]}^{c,w}
= 0_{\text{fear}} < \delta_{\text{fear}}(\sigma y : r_c(w)(y)[stim''(w)(y)(ix \text{movie'}(w)(x))])
\]

The extension will target Alfonse’s experiences where \( r_c \) is any relevant property of experiences that limits the domain of quantification to Alfonse’s experiences (this could be anything, such as: \( r_c(w)(x) \) is true iff \( x \) is an experience of someone watching the movie at \( w \), given that only Alfonse is watching the movie at \( w \)). In this case, it will be presupposed that Alfonse has experienced the subject of predication, and asserted that this subject is the stimulus of a non-zero degree of fear in him.\(^{43}\)

\(^{43}\)Speakers’ intensional reasoning may reveal what sort of restriction they have in mind. So an exocentric reading of If the movie were frightening... might consider counterfactuals where the movie is frightening to whoever watches it, whether this is Alfonse or not, or it might consider just counterfactuals where the movie frightened Alfonse. Where Alfonse is the only one actually watching the movie, the two exocentric readings...
The present treatment, on which exocentric predications simply assert that some experiential state or other holds, and it is up to the contextual coordination of domain restriction to narrow down to more determinate reports regarding specific experiencers, has a couple of beneficial results. First, as Hirvonen (2014: 99 ff.) notes, exocentric experiential predicates display some behavior with respect to negation and contradiction that is surprising if these predicates simply encode some definite experiencer in their semantic content. For instance, (108) reads as a contradiction, regardless of the intended exocentric targets.

\[(108) \# \text{The movie is frightening, but it isn’t frightening.}\]

This is not a feature of overt reference to experiencers, which uncontroversially do specify some definite experiencer in their content: (109) is not a contradiction.

\[(109) \text{The movie is frightening to Alfonse, but it isn’t frightening to Bethany.}\]

But if an exocentric reading of an experiential predicate simply specifies some experiencer or other in each case, there is no \textit{a priori} reason why (108) ought not to have a non-contradictory reading, where the experiencer is Alfonse in the first clause, and Bethany in the second.

This behavior is straightforwardly predicted if exocentric predications merely assert that some experiential state holds, and narrowing down to a relevant experiencer happens by coordination on the domain restriction. In this case, where the two clauses of (108) must have their contents determined with respect to the same context of utterance, a contradiction results no matter how the interlocutors attempt to set the domain restriction. The denotation would be as follows, where no value of \( r_c \) salvages the contradiction.\(^{44}\)

\[(110) \begin{align*} &\llbracket (108) \rrbracket^{c,w} = 0_{\text{FEAR}} < \delta_{\text{FEAR}}(\sigma y : r_c(w)(y)(\text{stim}''(w)(y)(\text{movie}'(w)(x)))) \land \\ &\quad -0_{\text{FEAR}} < \delta_{\text{FEAR}}(\sigma y : r_c(w)(y)(\text{stim}''(w)(y)(\text{movie}'(w)(x)))) \end{align*}\]

Second, the present account predicts that where the interlocutors are not interested in making reference to a specific experiencer, the domain restriction can be omitted or left vacuous, resulting in genuinely ‘existential’ readings of exocentric predicates, which simply report that there is an experiential state. This would entail that the state holds with respect to some experiencer or other, but there would be no specification at all in the semantic content of will be extensionally equivalent. Note also that exocentric readings will allow binding, so long as the domain restriction includes a free variable: thus where \( r_c = \lambda w'_c.\lambda z.\exp'(w')(\text{see}''(w)(x)(v))(z), 'x' \) being the individual variable bound by ‘\( \lambda x_c \)’ in the denotation of \textit{pos frightening}, an exocentric reading of \textit{Everyone saw a frightening movie} will be true iff everyone saw a movie frightening to the one who saw it. If this is right, then bound readings of experiential predicates require setting a special domain restricton, rather than just binding a pre-existent variable, which may predict that bound readings of these predicates are more difficult to access than those arising with adjectives that more plausibly project variables, like \textit{local}. This would need to be tested, but the present treatment is welcome if there really is such a difference.

\(^{44}\)One needs to be cautious here, since this is apparently also a feature of adjectives with definite implicit arguments: \# \textit{The concert is local, but it isn’t local}. It may ultimately be, then, that even definite implicit arguments do not simply anchor to individuals straightforwardly, but must do so meditatively by some contextual parameter, resulting in contradiction wherever two clauses such as these are read with respect to the same context. The treatments of covert experiencers in \$\textsection ?? and \$\textsection ?? actually capture this pattern as well, since they receive their extension relative to a contextually supplied assignment function, and the above piece of data, while compatible with the present approach, does not yet empirically distinguish it from an approach on which exocentric predicates have covert definite experiencers.
who this is, resulting in exocentric readings of *frightening* roughly equivalent to *frightening to someone or other*.

There do in fact appear to be such readings of experiential predicates. Where Alfonse hears that a horror movie has caused hysteria in some of its watchers, but has no idea who they are, he might say the following to report on an experiential state.

(111) The movie was frightening.

That Alfonse is not reporting that the movie was frightening to any experiencer in particular is shown by the fact that he can felicitously avow ignorance of the experiencer, or question it (using a sluice for naturalness: cf. Schaffer 2011: 200, ex. 45), which is not possible given even a minimal identifying description of the experiencer, as with *to whoever saw it*.

(112) a. The movie was frightening, but I don’t know to who.
    b. The movie was frightening, but to who?

(113) a. ?The movie was frightening to whoever saw it, but I don’t know to who.
    b. ?The movie was frightening to whoever saw it, but to who?

This is not a feature of implicit definite material of predicates generally. Thus there appears to be no reading of *local* without an overt location argument that is read as *local to somewhere*. Supposing that Alfonse hears that there was a concert somewhere, but he has no idea where, (114) remains strange, and ignorance of or questioning of the location is strange whether or not a minimally identifying location is provided.

(114) The concert was local.

(115) a. ?The concert was local, but I don’t know to where.
    b. ?The concert was local, but to where?

(116) a. ?The concert was local to wherever it took place, but I don’t know to where.
    b. ?The concert was local to wherever it took place, but to where?

Where *local*’s denotation specifies a location argument, only a definite reading of this argument, however thinly interpreted, is possible, and the predicate must be read as *local to x* for some determinate *x*.

Experiential predicates thus do not specify an experiencer *simpliciter* even on their exocentric readings, but only in virtue of coordination on the restriction of the exocentric report. In this they differ from predicates that genuinely specify a definite individual as part of their semantic content.

### 1.3.3 Overt experiencers: *to*-headed PPs

It’s now possible to clarify what the semantic role is of overt experiencers that occur alongside experiential predicates as overt *to*-headed PPs. Some examples of the relevant phenomenon, as it occurs with deverbal psych predicates, are as follows.

(117) a. The movie is frightening to Alfonse.
    b. Walking on the pier is relaxing to Bethany.
c. Every piece of furniture irritating to him was removed from the house.

Before offering an account of these, it’s worth noting that these constructions may be instantiations of a wider phenomenon, in two senses. To-headed PPs of exactly this sort look to have a role that extends beyond their occurrence as overt experiencers. There are non-experiential predicates with which these phrases occur, and there they seem to have the same semantic effect: presumably, a more general account of their behavior ought to derive their behavior as overt experiencers as a special case.

The predicates in question are those that are broadly ‘response-dependent,’ true of an individual just in case that individual is ideally disposed to produce a certain reaction in an agent. Some of these predicates have an epistemic flavor, and include persuasive, obvious, and clear. To take persuasive as the exemplar, its similarity to experiential predicates is remarkable. Not only is its interpretation in ordinary predications paraphrasable in a way similar to that of experiential predicates in the same environment, but the evaluation of the predicate by speakers is also ‘autocentric’ with respect to what disposition the predicate actualizes.

Thus persuasive is true of an individual just in case it is ideally disposed to produce belief in some proposition by a process of reasoning (118-a), and a speaker tends to think that something is persuasive where that speaker is (disposed to be) persuaded by it. Further, the adjective relates to a verb that takes an agent as object, and asserts the actualization of the relevant disposition with respect to that agent (118-b). Finally, the occurrence of a to-headed PP ‘restores’ the individual with respect to whom the disposition is actualized (118-c).

(118)  a. The argument is persuasive.
        b. The argument persuaded Alfonse.
        c. The argument is persuasive to Alfonse.

Similar comments can be made with respect to the behavior of these PPs with the other adjectives: note the relation between obvious and obvious to Alfonse, and clear and clear to Alfonse. As with -ing above, a denotation for to will be provided here that only deals with its behavior as it pertains to the special case of experiencers: but §?? will expand this notion slightly in dealing with the behavior of to as it relates to direct evidence. Nevertheless, the cue can be taken from the epistemic response-dependent predicates: the PPs actualize a disposition to produce a state with respect to some individual – here, an experiencer – and the PP plays the role that the experiencer object of the psych verb played prior to being desaturated.

Second, it is unclear to what extent these phrases are or are not part of the broader phenomenon traditionally labeled dativus iuidicatis, viz. the use of dative marking to relativize the content of predicates or propositions to individuals. In English, the use of to- and for-headed PPs to express individuals’ evaluative opinions is widespread, and not restricted to experiential predicates.

These epistemic response-dependent adjectives even have exocentric readings, which appear in exactly the same circumstances as their experiential counterparts. Thus, on a preterite reading: Alfonse heard the argument. It was persuasive.

45
The use of dative marking for this purpose is widespread and poorly-understood – § ?? offers some brief comments on it, in relation to the behavior of subjective attitude verbs. What is at stake for experiential semantics is whether the overt experiencers appearing with experiential predicates can be semantically assimilated to whatever more general mechanism dativus iudicantis marks. This ultimately requires a broad cross-linguistic survey of the behavior of free dative marking, to determine whether or not languages have markers specialized for the expression of experiential modifiers, or whether, even if they do not, the appearance of datives with experiential predicates has a semantic effect not reducible to a more general ‘relativizing’ mechanism.\footnote{If it is true that overt experiencers are a sub-class of dativus iudicantis, then the contextualist idea that they are manifestations of an argument that a transitive predicate selects for (cf. ??) is yet more dubious, since dativus iudicantis in the above sense is uncontroversially adjunctive in character. Stephenson (2007a: 520, ex. 85) has claimed that there is evidence for overt experiencers being internal arguments to the adjective, from the idiosyncratic lexical requirements as to which preposition must head the PP; however, the data are extremely messy, far more so than one expects for lexical requirements typical of the selectional behavior of adjectives, and all of Stephenson’s judgments are at least questionable. \textit{To}-headed PPs are examined in the text, because their occurrence with experiential predicates, especially those derived by compositional processes encoding experience-sensitivity, is extremely regular. Stojanovic \& McNally (2014) and Bylinina (2017) make the case that certain predicates do occur with markers that have a narrowly experiential function, in part based on the uneven distribution of experiential dative markers with predicates cross-linguistically.}

With that said, the denotation of \textit{to} can be cast as introducing an experiencer as follows. Recall from § ??, where it was demonstrated that a bare account of experiential predicates could relativize predicates to an experiencer by quantifying over ‘experiential alternatives,’ that the following denotation was given (repeated from ??).

\footnotesize
(120) 
\[
[to]^w = \lambda x.\lambda P_{x,w}.\lambda y.\forall w' \in Exp_{w,x}[P(w')(y)]
\]

With the machinery put in place this chapter, the notion of experiential alternatives can be given content. Some abbreviations will make the exposition more readable. The foregoing has appealed to two sorts of degrees of experiential kinds produced by stimuli. The first is a dyadic notion, invoked for the denotation of psych verbs in §1.2.2 (cf. ??): this is the degree of an experiential kind produced at a world by a stimulus in an experiencer. The second is a monadic notion, invoked for the denotation of deverbal psych predicates in §1.3.1 (cf. (83)): this is the degree of an experiential kind of that an individual is disposed to be the stimulus of when certain felicity conditions are met. These two sorts of degrees can be abbreviated as ‘\(\delta''_k(w)(x)(y)\)’ and ‘\(\delta'_k(w)(x)\)’, respectively.

\footnotesize
(121) 
a. \(\delta''_k(w)(x)(y) := \delta_k(\sigma z[\text{exp}''(w)(z)(x) \land \text{stim}''(w)(z)(y)])\)
b. \(\delta'_k(w)(x) := \iota d[\forall w' : w p w'[d = \delta_k(\sigma y[\text{stim}''(w')(y)(x)])]]\)

\(\delta''_k(w)(x)(y)\) is thus read: ‘the degree of \(k\) produced in \(x\) by \(y\) at \(w\),’ while \(\delta'_k(w)(x)\) is read: ‘the degree of \(k\) that \(x\) is disposed to produce at \(w\) (simpliciter).’

The experiential alternatives of an experiencer are all the live options for the way the world is ‘according to the experiences of the experiencer.’ In other words, at \(w\), \(x\)’s set
of experiential alternatives contains all and only those worlds at which each individual is disposed to produce the degree of every experiential kind that is (actually) produced by that individual in $x$ at $w$. At each experiential alternative, then, each individual produces simpliciter that experience that the experiencer actually has at the anchor-world, meaning that the experiential alternatives track what the world would be like if the experiencer’s experiences were all ‘accurate,’ or correctly tracked the sorts of experiences that stimuli are ‘really’ disposed to produce.

(122) \[ \text{Exp}_{w,x} := \{ w' : \forall y, k[\delta'_w(w')(y) = \delta''_w(w)(x)(y)] \} \]

And now the denotation of \text{to} in (120) works as intended. It composes with an individual (experiencer), then with the intension of a property, and returns a property true of an individual just in case the first property is true of that individual in all the experiencer’s experiential alternatives. The composition of (117-a) proceeds as follows, making use of the new notation, taking the non-exocentric frightening, in line with §1.3.2, to be in its generic positive form, and taking the experiencer phrase to adjoin after composition with \text{GEN}.$^47$

(123) a. \[ \text{GEN} \text{[POS [frightening]]}]^w = \lambda x_e.0_{\text{FEAR}} < \delta'_w(\text{to Alfonse})(x) \]

b. \[ \text{[to Alfonse]}^w = \lambda P_{w,a}^w(\text{[to Alfonse]}^w) \]

\[ = \lambda y_e.\forall w' \in \text{Exp}_{w,a}[P(\text{to Alfonse})(x)] \]

c. \[ \text{[GEN [POS [frightening]] [to Alfonse]]}^w \]

\[ = \lambda P_{w,a}^w(\text{[GEN [POS [frightening]] [to Alfonse]]}^w) \]

\[ = \lambda y_e.\forall w' \in \text{Exp}_{w,a}[0_{\text{FEAR}} < \delta'_w(\text{to Alfonse})(y)] \]

d. \[ \text{[[the movie] [is [GEN [POS [frightening]] [to Alfonse]]] [the movie]}^w \]

\[ = \lambda y_e.\forall w' \in \text{Exp}_{w,a}[0_{\text{FEAR}} < \delta'_w(\text{to Alfonse})(\text{the movie})(x)] \]

Thus, \text{the movie is frightening to Alfonse} is true just in case in all of Alfonse’s experiential alternatives, the movie is disposed to produce a non-zero degree of fear. Due to the way experiential alternatives are defined in (122), it must be that the value of $\delta'_w(\text{to Alfonse})(x)$ is uniform for all $x$ and $w' \in \text{Exp}_{w,a}$ – and this value must match $\delta''_w(\text{[the movie]}(x))$. The denotation in (123-d) can therefore be simplified as follows.

(124) \[ 0_{\text{FEAR}} < \delta''_w(\text{[the movie]}(x)) \]

$^47$Where \text{GEN} is internal to the adjective, this makes the PP an adjectival adjunct. I take this to be the right structural analysis, given constructions like (117-c), and given the fact that, as Schaffer (2011: 197, exx. 29-32) points out, experiencer phrases are degraded when following verbal adjuncts: compare \text{Hitchcock movies are frightening to Alfonse at night} versus \text{?Hitchcock movies are frightening at night to Alfonse}. Schaffer takes this fact to be evidence that the experiencer phrase is an argument, that cannot have an adjunct interposed between it and its selector, but this reasoning only works against an adjunct analysis if both the experiencer and temporal phrases are taken adjoin to the same projection. Since it is independently implausible that \text{at night} can function here as an adjectival rather than verbal adjunct (cf. \text{?the movies frightening at night}), and on the present analysis the experiencer phrase is not a verbal adjunct, then the ordering constraint is exactly what is predicted, since the verbal modifier adjoins higher. While Lasersohn (2005: 666, ex. d) and MacFarlane (2014: 153) don’t discuss the syntactic status of these phrases, their semantic analysis of them as property modifiers is compatible with this account, and Collins (2013: 91, ex. 62) proposes an AP-adjunct analysis explicitly. Cf. also Lasersohn (2017: §5.5).
Thus, it is equivalent to say that *The movie is frightening to Alfonse* is true just in case the movie stimulates a non-zero degree of fear in Alfonse, and the result is as desired. Furthermore, this is identical to the denotation of *The movie frightens Alfonse*, which confirms that the overt experiencer fills the same role as the object of the object-experiencer psych verb, and simply ‘resaturates’ the experiencer. Recall the denotation for this latter sentence from §1.2.2 (repeated from ??).

\[
(125) \quad [\text{the movie POS frightens Alfonse}]_w = 0_{\text{FEAR}} < \delta_{\text{FEAR}}(\sigma z[\text{exp}''(w)(z) \land \text{stim}''(w)(z)(\lambda x[\text{movie}'(w)(x)]))] \]
\]

But given the definition in (121-a), (125) is identical to (124). This further means that overt experiencers inherit all the presuppositional properties of object-experiencer psych verbs: they require that the experiencer be the possessor of an experience of the relevant kind, which for the reasons familiar from §1.1.2 requires that a certain experiential episode has been had. This is the right result, since experiencer PPs do in fact enforce these presuppositions, and they project out of negation in the expected way.

\[
(126) \quad \begin{align*}
\text{a. } & \text{The movie is frightening to Alfonse.} \\
& \rightarrow \text{Alfonse has experienced fear of the movie.} \\
\text{b. } & \text{The movie isn’t frightening to Alfonse.} \\
& \rightarrow \text{Alfonse has experienced the movie, and experienced no fear of it.}
\end{align*}
\]

These is in turn are just the sort of experiential presuppositions predicted to be enforced, by Alfonse’s possessing a portion of fear stimulated by the movie, or in virtue of his having been stimulated by the movie, but failing to possess any such portion of fear.

This result follows from the equivalence of the denotations shown above, but it’s worth briefly illustrating. In the case of a positive predication, as in *The movie is frightening*, the denotation is as in (123-d). Because ‘\(\delta_{\text{FEAR}}'(w)(a)(\lambda x[\text{movie}'(w)(x)])\)’ denotes a single value, due to the definition of experiential alternatives in (122), there must similarly be a single value for ‘\(\delta_{\text{FEAR}}'(w')(\lambda x[\text{movie}'(w')(x)])\)’ for all Alfonse’s experiential alternatives \(w'\), and the two values must be equivalent. There are three options as to what this value could be.

First, the value may be a non-zero degree: by definition, this is just where (i) the movie has been the stimulus of an experience in Alfonse, and (ii) Alfonse is an experiencer of a portion of fear whose stimulus is the movie. Here, the presuppositions have been met, and the sentence is true. Second, the value may be a zero-degree. In this case, by definition, (i) the movie has been the stimulus of an experience in Alfonse, and (ii) Alfonse is not the experiencer of a portion of fear whose stimulus is the movie. Here, the presuppositions have been met, and the sentence is false. Finally, it may be undefined, where the movie is not the stimulus of an experience in Alfonse. In this case, since \(\delta''_{\text{FEAR}}(w)(a)(\lambda x[\text{movie}'(w)(x)])\) is undefined, so is \(\delta'_{\text{FEAR}}(w')(\lambda x[\text{movie}'(w')(x)])\) for every \(w'\) in Alfonse’s experiential alternatives; but then, the denotation in (123-d) is also undefined, since the universal quantifier scopes over values undefined on all the relevant assignments. Here, there is presupposition failure.

These presuppositions then project out of non-external negation in the desired way. Thus, where negation of the copula is just treated as predicate negation:

\[
(127) \quad [\text{isn’t}]_w = \lambda P_{\text{et.}}.\lambda x e. \neg P(x)
\]
The result is true just in case δ′_FEAR(w′)(ιx[movie′(w)(x)]) is not a non-zero degree of fear in all of Alfonse’s experiential alternatives w′. Since the value is uniform across the alternatives, this is the same as to say that it is the zero-degree of fear in all these alternatives. Thus again, where δ″_FEAR(w)(a)(ιx[movie′(w)(x)]) is undefined, so is δ′_FEAR(w′)(ιx[movie′(w)(x)]) for all w′, and the denotation is undefined, since again the universal quantifier operates on undefined values, and thus so does ‘¬’. This results in an undefined value for the denotation as a whole, hence presupposition failure, where the movie has not been the stimulus of an experience in Alfonse. Where the term is defined, due to Alfonse having an experience of the movie, truth and falsehood are just reversed from the positive case, as desired.

While the above treatment captures the core truth-conditional contribution of overt experiencers when they appear, including their presuppositional constraints, it has nothing to say about their limited distribution. Experiencer PPs do not stack (129-a), they typically do not occur with adjectival predicates that are non-experiential and non-evaluative (129-b), and they are infelicitous even with experiential predicates in predicate position of a small clause beneath find (cf. ??).

While the above treatment captures the core truth-conditional contribution of overt experiencers when they appear, including their presuppositional constraints, it has nothing to say about their limited distribution. Experiencer PPs do not stack (129-a), they typically do not occur with adjectival predicates that are non-experiential and non-evaluative (129-b), and they are infelicitous even with experiential predicates in predicate position of a small clause beneath find (cf. ??).

The semantics provided above, in of itself, offers no reason why this should be. It’s also important that overt experiencers not attach to exocentric occurrences of experiential predicates, which according to §1.3.2 simply lack an internal GEN operator, and so according to the above should allow experiencer PPs equally to adjoin to them.

What all these cases of disallowed overt experiencers have in common is that they are apparently not attaching to experiential predicates in the proper, evaluative sense that this work has been examining. Frightening to Alfonse is a predicate that simply reports Alfonse’s experiences, and so has no evaluative component; the same is true of exocentric readings of frightening. Meanwhile, wooden has no experiential component at all, while embedding frightening to x beneath find, for any x, seems to ‘doubly saturate’ the experiencer, resulting in find scoping over a predicate that is already non-evaluative. The reason for these restrictions will be elucidated in §??, where to is discussed in the context of evaluativity and direct evidence.

With that, there is a working account of the semantics of experiential predicates and their relation to experiencers. Before ending this chapter, it’s worth considering to what extent the above allows the revitalization of a contextualism of a certain sophisticated sort, that the criticisms leveled in §?? don’t directly apply to. According to the above, the non-exocentric reading of experiential predicates, by which they gain their evaluative character, is the result of an operator GEN, and the absence of this operator results in exocentricity. This view has an obvious affinity with the accounts provided in Snyder (2013) and Pearson (2013), which were surveyed in §1.3.1. Why, then, might not a version of one of these views survive?

In that section, it was pointed out that there is no truth-conditional reason to believe in generic quantification over experiencers, since the pragmatics would have to deflate this
generic quantification into what is effectively a relativist, autocentric view. But this in of itself does not count against the position – if there in fact is some pragmatic reason that generic quantification over experiencers tracks autocentric evaluation, then said quantification is empirically harmless, and so the lack of positive motivation would only show that the two accounts – that experiential predicates have an internal experiencer argument, and that they don’t – are indifferently adoptable on semantic grounds.\footnote{48}

Here is a sketch of such a contextualist account adopting the present machinery. First, the deverbal psych predicate receives a dyadic interpretation (130), and the preposition is vacuous (131) (cf. \footnote{48}).

\begin{align*}
\text{frightening}^{c,w,g} & = \lambda x_e.\lambda y_e.\delta_{\text{FEAR}}(w)(x)(y) \\
\text{to}^{c,w,g} & = \lambda x_e.x
\end{align*}

POS then works as before (132), as does GEN, except that it comes with an index, call it $\alpha$, for an individual variable it can bind, and quantifies over both worlds and individuals (133). It further asserts felicity conditions on the individual as well as the world, represented by the operator $F$: presumably, some pragmatic mechanism will make it such that the only ‘felicitous’ individuals to which GEN is sensitive when composing with experiential predicates are the evaluators of the predicate, i.e. oneself (or those that one shares the relevant experiential dispositions with).\footnote{49} Intensions now include reference to variable assignments, of type $a$.

\begin{align*}
\text{POS}^{c,w,g} & = \lambda G_{a,(s,et)} . \lambda x_e . 0_G < G(x)
\end{align*}

\footnote{48}{Of course, this does nothing to show that the two accounts are indifferently adoptable on non-semantic grounds. Because the present study is concerned narrowly with experiencer semantics, the text will not address these, but there are several points to consider in the ultimate evaluation of the merits of these views. First, a contextualist in the present predicament will effectively be committed to thinking that experiencer phrases are overt realizations of an internal argument – this is because if they are not, since there are no other plausible candidates as to what does realize the argument overtly, this will result in the highly unpalatable claim that the predicates have internal arguments that are not overtly realizable (unless, as entertained in \S\S 4 and 5, the predicate encodes an experiencer intrinsically, and the PP is an assignment-modifier: but this appears to make the contextualist and bare views all but indistinguishable in the present machinery). But if they are selected for by the predicate, then there ought to be independent syntactic evidence that said experiencer phrases behave as arguments rather than adjuncts, and the evidence here is prima facie worrying for the contextualist: cf. Collins (2013: \S 4) for a summary of some basic tests (some questionable) that point to adjuncthood, and Rákosi (2006) for another approach, possibly congenial to the contextualist, on which certain experiencers are ‘thematic adjuncts.’ Second, if -ing really does operate by a unified mechanism for object-experiencer psych verbs and other sorts of verbs (cf. \S 1.3.1), then the contextualist will have to explain why it desaturates the other arguments of the verb in the non-experiential cases, but retains the transitivity of psych verbs. Finally, if these phrases are arguments, insofar as contextualism is a general thesis about experiential predicates cross-linguistically, all experiential predicates ought to be able to occur with them. There is some preliminary evidence that this is not so: cf. Vardomskaya (2018: 10, ex. 16). On the other hand, an adjunct analysis allows in principle that particular languages may simply lack the relevant modifiers.}

\footnote{49}{Care is needed here: insofar as GEN will operate on non-experiential predicates, generic quantification over individuals should not behave autocentrically in these cases. The contextualist’s pragmatic mechanism will need to rein in the semantics of GEN appropriately, so that e.g. the extension of Alfonse is nice on a generic reading does not reduce for the assessor to ‘Alfonse is nice to oneself.’ That generic quantification and autocentric evaluation do not track each other in this way is prima facie reason not to assimilate them, until some independent reason to the contrary is discovered.}
Finally, as in §??, there is a silent variable for which the adjective can select, which can be coindexed with GEN, and whose interpretation when unbound is appropriately relativized to the context of utterance c (cf. ??, ??).

Then three three options for the interpretation of the experiential predicate occur as follows. First, the predicate may select for a to-headed PP, and not take the GEN operator, resulting in an overt experiencer with the right interpretation.

Second, the predicate may select for $x_\alpha$, and not take the GEN operator, resulting in an exocentric interpretation, where the experiencer is contextually specified by the variable assignment determined in \(c\).

And third, the predicate may again select for $x_\alpha$, but occur with a coindexed GEN, binding off the variable and yielding the bare, non-exocentric interpretation with the flavor of a predicate disposed to produce experience of the relevant sort when the felicity conditions are met for experiencers generally.

This denotation gets the right results, and avoids the problems that plagued the contextualist in §??. It predicts that presuppositions of direct experience are voided in non-exocentric cases, and has the ability to incorporate autocentric evaluation, due to the appeal to felicity conditions. It further allows for a notion of something being ‘frightening simpliciter,’ and so on for any experiential predicate, which is the crucial reading the contextualist was missing.

However, even this treatment ultimately faces problems. The updated contextualist semantics here predicts yet a fourth reading of experiential predicates: one on which an overt experiencer is selected for, and GEN operates on the predicate. The result would be as follows.

The intended reading is that frightening denotes a property true of individuals that, under the appropriate felicity conditions for stimulating fear, do so in Alfonse. This interpretation would allow a merely dispositional reading, with no direct experience presupposition, with an overt experiencer. There is no such reading of the experiential predicate: The movie is frightening to Alfonse simply cannot mean that Alfonse would be frightened by the movie, were he to watch it (in ideal conditions).

\footnote{A similar non-attested interpretation appears where GEN operates on an experiential predicate that}
The logic of the predicament is this. In order to get an appropriate non-exocentric reading, where *frightening* takes an internal argument, GEN must scope over the predicate after this argument has been selected for. Otherwise, it cannot bind the experiencer variable. However, the very same operator that does this must also void the direct experience presupposition, or else the fact that the merely dispositional reading arises precisely when interpretations are non-exocentric cannot be captured. But then, it follows that the operator must scope also over overt arguments, and so must be able to void the direct experience requirement there as well. Hence, the contextualist overgenerates, unless some principled reason can be found why GEN only appears if it has a variable to bind.\(^{51}\)

By contrast, the three extant interpretations of the predicate, and the missing fourth, are naturally explained on a non-contextualist approach. GEN either appears or does not, subject to the aspectual and pragmatic restrictions discussed in §1.3.2, resulting either in a genuinely ‘experiential’ interpretation, in the interesting evaluative sense, or an exocentric one. In the former case, it is also possible for an overt experiencer to adjoin to the adjective over GEN: and reasons that it cannot do so below GEN will be further explored in §?? . The resulting structures for the positive form are as follows.

(139) a. Genuinely ‘experiential’ ('evaluative’) *frightening*

```
GEN
  POS
  -ing -en \sqrt{FRIGHT}
```

b. Exocentric *frightening*

```
POS
  -ing -en \sqrt{FRIGHT}
```

c. Overt experiencer *frightening*

selects for a null experiencer not coindexed with it: GEN\(_\alpha\) [POS [frightening \(x_\beta\)]]. On this interpretation, there is again a dispositional reading with no direct experience requirement, which is centered on whoever the contextually relevant individual that \(\beta\) maps to is. To avoid this, presumably the contextualist must claim that GEN is an unselective binder.

\(^{51}\)Insofar as the data on individual-level adjectives that do have genuine internal arguments bear on this question, they are equivocal. Thus *Alfonse is helpful to Bethany* indeed does seem to require that the disposition of Alfonse to help has been actualized with respect to Bethany: he must have helped her. The contextualist might thus say that whatever makes the generic reading not produce merely dispositional readings in these cases can be transposed onto the cases with experiencers. But this observation doesn’t hold for other many predicates: *The peanuts are fatal to Alfonse* can be read as true where Alfonse has a terrible peanut allergy, but this does not require that the peanuts have ever killed him: thus the appropriateness of the followup, *So don’t serve him any.*
Finally, although the present chapter has given a decompositional semantics for deverbal experiential predicates, the same results can be applied to those predicates that apparently cannot be so decomposed. Where a predicate in the lexicon has all the same semantic features e.g. of a deverbal psych predicate, it can be assigned the appropriate experiential semantics just by plugging in the right experiential kind. Thus for funny, what is relevant is humorous experiences, and in the lexicon it can appear as follows.

\[
[\text{funny}]^w = \lambda x.\delta_{\text{humor}}(\sigma y[\text{stim}''(w)(y)(x)])
\]

It will then interact with GEN and POS in the familiar way, to give the relevant results. This treatment can further trivially apply to experiential nominals such as (a) bore and (a) horror.