

**Elaine J. Francis**, *Gradient acceptability and linguistic theory* (Oxford Surveys in Syntax & Morphology). Oxford: Oxford University Press, 2022. Pp. xv + 270. ISBN 9780192898951.

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Acceptability judgments are among the most frequently used sources of evidence in grammatical research. While it is undoubtable that these judgments provide an important window into speakers' grammatical knowledge, they also pose a number of challenges (e.g. Branigan & Pickering 2017, Gibson *et al.* 2013). The traditional concern that judgments are based on individual authors' intuition has lost some of its urgency given the surge in controlled rating experiments with larger sample sizes. More severe is the fact that acceptability judgments are metalinguistic, thus not tapping directly into participants' 'online' processing, and that it is often difficult to identify which factors are responsible for an observed difference in acceptability. Focusing in particular on the latter point of how judgment data can be interpreted, Francis' monograph provides an in-depth discussion of the relevant challenges and how they can potentially be overcome. Throughout the book, the author addresses findings from acceptability judgments and other psycholinguistic methods about a variety of phenomena, including syntactic islands, extraposition and resumptive pronouns, in English as well as several other languages. Her discussions are thorough and thought-provoking, though some questions will be raised below about what theoretical tools can best account for the empirical results.

The book consists of eight chapters, each ending with a short summary section. In addition, a glossary of key concepts is provided at the end. In chapter 1 (pp. 1–17), Francis introduces the phenomenon of gradient acceptability, defining it as a situation in which 'sentences that share the same or similar structures differ to varying degrees in acceptability' (p. 1). As a classic example of this, the author discusses *that*-trace effects as in (1a–c) (p. 9), where (1a) is assumed to be fully acceptable, (1b) is unacceptable,

while (1c), which contains a prepositional phrase after the complementiser, tends to receive intermediate acceptability ratings.

- (1) a. These are all ideas which I think \_\_\_ should be easy to implement.
- b. \*These are all ideas which I think that \_\_\_ should be easy to implement.
- c. These are all ideas which I think that for the most part \_\_\_ should be easy to implement.

Francis then poses two questions that she sets out to address in the remainder of the book. First, what types of linguistic constraints – syntactic, semantic, pragmatic or prosodic – and domain-general processing constraints drive the acceptability judgments, and how can these factors be distinguished? And second, how are researchers' interpretations of acceptability data influenced by the theoretical assumptions they make?

In chapter 2 (pp. 18–54), Francis expands on this latter topic by providing an overview of the major grammatical theories, grouped into four types: derivational grammars (subsuming different varieties of Chomskyan generative grammar), constraint-based grammars (e.g. Lexical-Functional Grammar, Head-Driven Phrase Structure Grammar and some strands of Construction Grammar), Optimality Theory (both in its linear and stochastic varieties) and usage-based approaches (such as Joan Bybee's Usage-based Theory). She discusses how the theoretical architectures of these frameworks shape their proponents' interpretations of acceptability data. For example, derivational theories assume an elaborate syntactic component and a close mapping (isomorphism) between the syntactic and semantic structure of sentences. Constraint-based theories, on the other hand, assume a simpler syntactic component and a weaker degree of isomorphism, treating syntax and semantics at least as partially independent levels. As a result, proponents of derivational approaches may interpret seemingly semantic factors, such as differences in thematic role assignment, as indicators of underlying syntactic differences, while researchers working in constraint-based frameworks account for the same phenomena in purely semantic terms.

In addition, Francis addresses to what extent different approaches allow for gradience within the grammar. While some researchers only recognise categorical constraints, seeing gradient acceptability as the result of performance factors that lie

outside of speakers' grammatical competence, others introduce gradience into the grammar by distinguishing between strong and weak constraints. Another option, which plays an important role in the later chapters of Francis' book, is to posit 'soft constraints' of varying strengths, known particularly from stochastic variants of Optimality Theory (e.g. Manning 2003).

The next two chapters deal with how researchers can use controlled experimental designs to distinguish between different explanations for gradient acceptability. In chapter 3 (pp. 55–73), Francis focuses on the distinction between formal-syntactic and other types of linguistic explanations. Zooming in on several phenomena, including English outbound anaphora, Czech word order and German split intransitivity, the author provides detailed interpretations of previous acceptability judgment studies. Interestingly, her conclusion is that most of the cases can be explained in terms of *non-syntactic* factors, i.e. semantic, pragmatic or prosodic constraints.

One potential concern about the chapter is that, even though Francis is well aware of the challenges of distinguishing between different linguistic levels, it is still not always clear why she regards certain constraints as 'syntactic' instead of attributing them to some other level. This question arises, for example, in her discussion of the Czech data (pp. 63–6), where she notes that subject-verb-object order is preferred when the object represents new information, while subject-object-verb order is more common when the object conveys discourse-old information. Francis provides two possible accounts of this variation, either in terms of syntactic constraints on movement operations or prosodic constraints on stress assignment. Yet both the syntactic and the prosodic account hinge on the information-structural distinction between given and new information, thus raising the question of whether the underlying explanation for the word order differences should not rather be couched in pragmatic (or discourse-functional) terms.

In chapter 4 (pp. 74–102), Francis continues the previous discussion by addressing how syntactic factors can be distinguished from general processing constraints. What exactly these processing factors consist of could be made clearer: while the author briefly relates them to speakers' working memory capacity, most of the discussion relies on the generic terms 'processing ease' and 'processing difficulty'. Nevertheless, focusing on violations of island constraints in English, Francis argues convincingly that acceptability and reading time data alone cannot adjudicate between grammar- and processing-based

accounts of these phenomena. Instead, she suggests that two additional effects can help clarify the picture. The first consists of overgeneration errors, for example when speakers accept agreement-violating sentences such as (2), quoted from page 88 (original emphasis).

- (2) \*The **drivers** who the runner **wave** to each morning honk back cheerfully.

The fact that these sentences tend to be more often accepted in timed than in untimed judgment tasks suggests that the structures are actually ungrammatical and that their acceptance under time pressure is merely the result of processing-related effects. The other type of evidence comes from cross-linguistic differences, for example between the English and Russian examples with multiple *wh*-words in (3) (p. 94).

- (3) a. Helen tried to figure out what who ordered.  
b. Elena staralas' razobrat'sia chto kto zakazal.  
Elena tried to figure out what who ordered

Francis observes that the non-canonical positioning of the object (*what*) before the subject (*who*) is less acceptable in English (3a) than in its Russian equivalent (3b), a so-called 'Superiority effect'. This suggests that the acceptability judgments are driven by grammatical differences between the languages rather than by general processing constraints, which should affect both languages equally.

In chapter 5 (pp. 103–25), Francis brings in a new topic, addressing the relationship between acceptability and frequency, and the use of corpus data to investigate the latter. The author first notes that frequency plays varying roles in different theoretical frameworks: while proponents of derivational theories regard it as largely uninformative about grammatical competence, usage-based linguists assume that frequency information is stored as part of speakers' grammatical knowledge. Francis then shows that the relationship between frequency and acceptability is a complex one, with some studies observing a close correlation between the two, while other studies illustrate mismatches between them. Francis also discusses more elaborate frequency effects such as 'statistical preemption' (see Goldberg 2019), where a structure (e.g. *consider* + infinitive) is judged

as unacceptable due to the existence of a frequent alternative that expresses the same meaning (*consider* + *-ing* complement). Finally, she considers machine learning approaches, arguing that their findings point to a systematic relationship between corpus statistics and human acceptability judgments, but that the results are difficult to interpret because the specific factors by which the models determine sentence probabilities remain unclear. One limitation of the chapter is that the notion of ‘frequency’ is used quite broadly, without discriminating between different frequency measures. By distinguishing token from type frequencies and incorporating more sophisticated techniques such as collocation analysis and dispersion measures (Gries 2020, Stefanowitsch 2013), one might be able to account for some more of the previously observed dissociations between frequency and acceptability.

In chapters 6 and 7, Francis combines the theoretical and methodological tools from the previous chapters and applies them to the analysis of two further phenomena. Chapter 6 (pp. 126–56) deals with extraposed prepositional phrases and relative clauses in English and German. Francis shows that such structures are less acceptable, for instance, if the antecedent of the extraposed phrase is a noun within an embedded noun phrase, as in (4a) (p. 136), or if it is a definite noun phrase, as in (4b) (p. 144).

- (4) a. \*A photograph of a book was published last year about French cooking.  
b. ?The girl arrived who was hugging a doll.

At the same time, however, Francis also highlights that structurally similar examples to the ones in (4) are nevertheless attested in corpora, thus illustrating the benefits of combining experimental results with corpus analyses. Given this finding, the author concludes that the dispreferred cases are not subject to categorical syntactic constraints, but are better accounted for by ‘soft constraints’ that can sometimes be violated.

Besides the question of what type of soft constraints are involved in these cases (syntactic, semantic/pragmatic and/or processing-based?), one may also wonder if some of the author’s examples could not equally be explained in terms of categorical constraints. For example, in her discussion of the definiteness constraint, Francis also

addresses cases like (5), quoted from page 150 (original underlining), in which a relative clause is extraposed even though its noun phrase antecedent is definite.

- (5) ... those critics would be right who argue that our nation is captive to the ideology of possessive individualism that elevates pursuit of individual satisfactions over a larger common good.

The author points out that such cases are licensed by the general information-structural principle of mentioning short before long constituents, which takes precedence over the definiteness constraint. The question, however, is whether soft constraints are required to describe such a situation of ‘competition among weighted constraints’ (p. 153). In other words, can categorical constraints not also be ranked, with one constraint (e.g. short-before-long) winning out over the other (e.g. definiteness) if the two conflict? Notably, in her discussion of Optimality Theory in chapter 2, Francis treats constraint ranking as a general feature of the framework, regardless of whether the constraints are soft or categorical.

Following this, chapter 7 (pp. 157–193) contains a detailed case study of resumptive pronouns in Hebrew, English and Cantonese relative clauses. As illustrated in (6) (p. 160), Hebrew allows the insertion of a pronoun where there would otherwise be a gap, while such a resumptive pronoun would be ungrammatical in a corresponding English sentence.

- (6) ze      ha-iš      še-      ra’iti      oto  
this   the-man   that   saw   him  
‘This is the man that I saw him.’

To examine how robust this cross-linguistic distinction between ‘grammatical’ and ‘intrusive’ (i.e. ungrammatical) resumption is, Francis uses acceptability judgments alongside other experimental data from elicited production, forced choice and self-paced reading. She concludes that the distinction largely holds up, even though she also shows that there are considerable differences between types of relative clauses, and even between specific verbs that occur in them. As an example of the latter, Francis discusses

Cantonese coverbs, a specific type of serial verb illustrated in (7) (p. 160), where *bong1* does not have its main verb meaning ‘help’ but is instead translated as ‘from’.

- (7) ngo5 bong1 keoi5 maai5 ce1 go2 go3 neoi5jan2 hou2 hou2jan4  
I help him/her buy car that CL woman very kind  
‘The woman who I bought a car from her is very kind.’

Francis shows that the resumptive pronoun in (7) is clearly preferred to the alternative structure with a gap, but that this preference is weaker for other coverbs. The author interprets this as evidence that these verbs are at different stages of an ongoing grammaticalisation process through which resumptive pronouns are becoming obligatory in coverb object relatives. Interestingly, Francis argues that this partial grammaticalisation process ‘might be understood synchronically as a soft constraint’ (p. 177). As in the earlier discussion, this use of the concept of ‘soft constraints’ raises some questions. In particular, Francis seems to suggest that what might diachronically be an emerging categorical (!) constraint (against coverb stranding) can be synchronically treated as a soft constraint as long as the constraint has not generalised to all members of the lexical class. Both from a theoretical and a practical perspective, however, it is difficult to determine how general a constraint would need to be to count as categorical, also given that lexical classes are not natural kinds but rather the result of linguists’ classifications. Moreover, it seems that this understanding of soft constraints – to account for item-specific differences in the degree of grammaticalisation – is rather distinct from other uses of the concept in Francis’ book, for example to capture statistical (but still violable) regularities.

The final chapter 8 (pp. 194–236) consists of a concluding discussion that brings together various topics from the previous chapters. First, Francis illustrates the use of soft constraints for another construction, namely transitive subject control sentences in English. Here, the author shows that examples such as (8a) are judged as less acceptable than object control sentences like (8b) but still as more acceptable than ungrammatical examples like (8c) (see pp. 196–7).

- (8) a. Jane promised Sarah to do the dishes.

- b. Jane asked Sarah to do the dishes.
- c. \*Jane declined Sarah to do the dishes.

Again, some doubts remain about whether the intermediate acceptability of transitive subject control speaks for a soft constraint, in particular since Francis observes that speakers vary considerably in terms of whether they regard such sentences as grammatical or not. This raises the possibility that what looks like a soft constraint at the community level might actually be a situation in which some speakers encode a categorical constraint while others do not. The question is whether soft constraints should be used to average over such inter-individual variation, and whether this is still in line with the original purpose of the concept.

Beyond these specific concerns, Francis' summary provides a convincing case for a gradient view of grammar. Among her arguments are the fact that constraint-violating structures are often still attested in corpora, thus weighing against 'hard' constraints; that gradient acceptability is more pervasive than assumed, with many purportedly ungrammatical examples from the literature receiving intermediate ratings in judgment experiments; and that computational models exist which predict gradient acceptability by resorting to grammar-internal rather than grammar-external factors. Finally, Francis highlights the importance of methodological pluralism, arguing that judgment data are best interpreted when they are combined with other types of evidence. The methods discussed by the author include other psycholinguistic techniques (e.g. spoken and written elicitation, visual probe recognition, structural and lexical priming), corpus analyses as well as neurolinguistic and computational approaches.

Overall, the greatest strength of Francis' book lies in the author's meticulous and nuanced interpretations of a broad range of experimental results. These discussions not only illustrate the value of good scientific practice, but they also highlight how difficult it is to derive conclusive interpretations about the factors that give rise to acceptability judgments. Whoever expects straightforward answers to the theoretical questions that the author examines will be disappointed: more often than not, Francis concludes that the judgment data (even in combination with other experimental methods) are compatible with two or more competing explanations. In this way, the author provides a sobering but realistic view of how previous interpretations in the literature may have often been driven



by the authors' theoretical commitments as much as (or more than) by the datapoints themselves.

As discussed above, Francis' account also raises a number of questions, in particular with respect to the concept of 'soft constraints', which seems to subsume a number of phenomena that may better be treated as distinct (e.g. the statistical nature of constraints; differences in the degree of grammaticalisation; and varying amounts of interspeaker variation). Despite these remaining questions, Francis' book provides a valuable and accessibly written resource for theorists and psycholinguists working along the whole spectrum of grammatical research. By diving head-on into the murky waters separating theoretical accounts from the empirical results that are used to support them, the author showcases a reflective and well-informed approach to data interpretation and grammatical analysis. In this way, her monograph provides grammarians with an opportunity to question, and solidify, the theoretical and methodological underpinnings of their own work.

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