

Alternative circumstances of evaluation and the *ser/estar* distinction in Spanish

Ashwini Deo, Sara Sanchez-Alonso, Maria Piñango

Abstract: The Spanish copulas *ser* and *estar* have distributional and interpretational patterns that have resisted an adequate analysis. This paper provides a unified analysis that treats the two copulas as being presuppositional variants that are differentially sensitive to properties of the circumstances at which the truth of the copular sentence is evaluated. We argue that *estar* signals that the prejacent is *boundedly* true at the evaluation circumstance. The prejacent's bounded truth at a circumstance i at a given context of use c depends on the existence of no-weaker alternative circumstances i' accessible at c where the prejacent is false and on i being a maximal verifying circumstance at c . The analysis relies crucially on an explication of a strength ordering over alternative circumstances of evaluation. The assumption of this presuppositional component accounts for the distinct flavors of interpretation associated with *estar* with a range of predicates. *ser* is shown to be associated with its own inferences that derive from its status as the presuppositionally weaker, neutral member of the pair.

Contents

1	Introduction	4
2	Distribution of <i>ser</i> and <i>estar</i>	6
2.1	Empirical observations	6
2.1.1	Locative PPs and Nominal predicates	6
2.1.2	Adjective predicates	7
2.1.3	Summary	11
2.2	Context-sensitive aspects of the <i>ser/estar</i> distribution	11
2.2.1	The use of <i>estar</i> implies knowledge of change	11
2.2.2	The use of <i>estar</i> to signal novelty/unexpectedness	13
2.2.3	The use of <i>estar</i> and relational uses of gradable predicates	14
2.2.4	The use of <i>estar</i> to signal exceeded contextual expectations	15
2.2.5	The use of <i>estar</i> to signal changed contextual standards	16
2.3	Summary	17
3	Previous accounts	17
3.1	Summary and issues	19
4	The analysis	20
4.1	Semantic setup	21
4.1.1	Entailment-based ordering over circumstances	23
4.2	Lexical entries for <i>ser</i> and <i>estar</i>	26
4.3	The interaction of lexical meanings with contextual information	28
4.3.1	Contextual effects with <i>estar</i>	28
4.3.2	Contextual effects with <i>ser</i>	29
4.4	Summary	31
5	Application	31
5.1	Estar	31
5.1.1	<i>estar</i> with locative predicates	31
5.1.2	<i>estar</i> with adjectives	33
5.1.3	Summary	40
5.2	Ser	41
5.2.1	<i>ser</i> (and <i>estar</i>) with nominal predicates	41
5.2.2	<i>ser</i> with locative predicates	43
5.2.3	<i>ser</i> with adjectives	44
5.2.4	Semantic effects on the interpretation of nominal subjects	46
5.2.5	Summary	47
5.3	Adjectives associated with only one copula	47

5.3.1	<i>estar</i> -only adjectives	47
5.3.2	<i>ser</i> -only adjectives	49
6	Conclusion	50

1 Introduction

Languages containing multiple strategies for expressing meanings corresponding to those uniformly expressed by the English copula *be* present a challenge to an often made assumption that copular expressions are semantically empty. Multiple copula systems are usually characterized by distributional restrictions on each copula, and may also associate distinct semantic interpretations with distinct copulas. The presence vs. the absence of a copula may be similarly meaningful in systems in which a single copula systematically alternates with zero in non-verbal predication clauses. Consider the contrast between English predication clauses in (1), the Spanish sentences in (2), and the Hebrew sentences in (3). In Spanish, the copulas *ser* and *estar* often induce different interpretations for the predicates they combine with, as in (2-a) and (2-b). In the Hebrew sentences, the copula (based on the demonstrative pronoun) is unacceptable with locative and stage-level predicates (3-a), optional with individual-level predicates and predicate nominals (3-b), and obligatory in generic sentences containing kind-referring subjects (3-c).

(1) John **is** in the room/wounded/intelligent/a war veteran/a Collie.

(2) a. *Juan **es/está** guapo/avisado.*
Juan SER/ESTAR handsome/quick-witted
Juan is/is looking handsome/quick-witted.

b. *El reportero **es/está** sucio.*
The reporter SER/ESTAR dirty
The reporter is dirty-minded/ physically dirty (or corrupt).

(3) a. *Dani (***hu**) 'ayef axSav*
Dani 3.MASC.SG tired now
Dani is tired now.

b. *Dani (**hu**) xaxam/more*
Dani 3.MASC.SG wise/a teacher
Dani is wise/a teacher.

c. *zmaxim ***(hem)** yerukim*
plants 3.MASC.PL green
Plants are green.

Hebrew; Greenberg 1998

These sorts of intricate patterns observable in multiple copula systems have led researchers to suggest that copular expressions are sensitive to the semantic properties of the predication clauses they are used to describe (Bochnak et al (2011; Washo); Ramchand (1996; Scottish Gaelic); Green (2000; AAE); Greenberg (1998; Hebrew) among others).

The multi-copula system instantiated in Spanish by *ser* and *estar* has been especially well-studied through detailed description and analysis both in the Hispanic/Romance studies literature and in Linguistics.

The key question here is: What semantic distinction between predications could be signaled by copular differences that remain covert in languages like English? It has been suggested that notions like stage-levelness vs. individual-levelness, temporariness vs. permanence, or the difference between whether a given property obtains intrinsically vs. accidentally of an individual underlie the *ser-estar* contrast (e.g., Bello, 1847; Ramsey, 1894; Roca Pons, 1958; García de Diego, 1970; Diesing, 1992; Escandell-Vidal and Leonetti, 2002). While these distinctions are indeed implicated in determining some uses of the two copulas, they do not offer a unified understanding of the distribution and interpretational effects associated with them.

In this paper, we propose a unifying analysis for the distribution and interpretation of the two Spanish copulas. The basic intuition underlying our analysis is that the use of *estar* signals that the speaker takes the truth of the embedded predication to be restricted in scope to a specific circumstance in the context and is not committed to its truth beyond that circumstance. The use of *ser* does not signal such restricted commitment. Thus, the choice between *ser* and *estar* is guided by speaker assumptions regarding the scope (henceforth strength) of the embedded predication (henceforth prejacent) at circumstances of evaluation accessible in the discourse context.¹

To anticipate the analysis, the truth-conditional contribution of both copulas is identical – both *ser* and *estar* assert that the prejacent (corresponding to the embedded uninflected sentence radical) is true at the circumstance of evaluation. The difference between the two copulas lies in an added meaning component associated with *estar*. *estar* conventionally encodes (as presuppositional content) that the prejacent is **boundedly** true at the evaluation circumstance. Boundedness is defined as the obtaining of two conditions, both of which rely on the notion of “alternative circumstances”: The first condition requires that there be no-weaker alternative circumstances, accessible in the discourse context, at which the prejacent is false. The second condition requires the circumstance of evaluation to be a maximal verifying circumstance for the prejacent in the discourse context.² *ser* remains neutral with respect to the boundedness component of meaning.

The analysis developed here, while being formally novel, resonates with observations in the prior literature that the felicitous use of *estar* must take into consideration the larger discourse in which the sentence it occurs in is embedded. The treatment we propose allows us to retain and coherently reconcile the intuitions (that we share) of researchers like Maienborn (2005), Clements (1988, 2008) and Roldán (1974) while offering a semantically explicit analysis that makes use only of standard assumptions about parameters relevant for determining propositional truth.

The paper is organized as follows: In §2, we introduce the empirical data from Spanish regarding the distribution of the two copulas. §3 describes the ideas and insights from the previous literature regarding the semantic distinction that underlies the distribution of the two copulas. In §4, we present the semantic setup required for our analysis and posit lexical entries for *ser* and *estar*. Here we also show how the lexical content of the copulas interacts with contextual information to generate specific inferences associated with

¹By a circumstance of evaluation we mean the composite set of contextual parameters that are taken to be relevant to determining the truth of an utterance. Such a circumstance (which may often, but not always, be identical to that of the context of utterance), contains information about both objective facts (encoded by world, time, location parameters) and decisions about language use that are subjective and potentially resolvable in multiple ways as discourse evolves (encoded by interpretational parameters such as judges and contextual standards).

²The notions of alternative circumstances and a strength ordering among distinct circumstances are formally defined in §4.

them. In §5, we show how the analysis accounts for the range of uses and interpretative effects of the two copulas described in §2. In §6, we conclude, deliberating on the nature of the presupposition encoded by *estar* in the larger landscape of not-at-issue meanings.

2 Distribution of *ser* and *estar*

2.1 Empirical observations

2.1.1 Locative PPs and Nominal predicates

The basic distribution of *estar* and *ser* has the following pattern: *estar* is the preferred copula when the predicate is a locative prepositional phrase (4). *ser* tends to be the default copula with nominal predicates (5).³

- (4) a. *Pedro está en la cocina.*
 Pedro estar.PRES.3.SG in the kitchen.
 Pedro is in the kitchen.
- b. *Chile está en Sudamérica.*
 Chile estar.PRES.3.SG in South America
 Chile is in South America. (Roldán 1974)
- c. *El restaurante Etíope está cerca de la biblioteca.*
 The restaurant Ethiopian estar.PRES.3.SG near of the library
 The Ethiopian restaurant is near the library.
- (5) a. *Julia es arquitecta.*
 Julia ser.PRES.3.SG architect.FEM
 Julia is an architect.
- b. *Soy zapatero.*
 ser.PRES.1.SG cobbler.MASC
 (I) am a cobbler.

Neither of these are entirely categorical patterns. For instance, it is possible for *ser* to be the copular expression in sentences containing locative predicates when the topic under discussion in a given discourse does not concern the location of some specific entity.⁴ In (6-a), the speaker is talking about a fact that needs to be remembered, while in (6-b) the topic under discussion is the ambience (or some other distinguishing property) of the restaurant. In such cases, it is acceptable for the locative predicate to appear with either

³The glosses used in this paper include: CL: clitic; FEM: feminine, INF: infinitive, IO: indirect object, MASC: masculine, PART: participle, PAST: past tense, PL: plural, PRES: present tense, SG: singular, SUBJ: subjunctive

⁴To the best of our knowledge, this is not an observation that has received acknowledgement in the literature.

copula.

- (6) a. **Context:** Today, we have an exam on Spanish architecture.
b. *Tengo que recordar que la Casa Batlló es/está en Barcelona.*
Have.PRES.1.SG that remember that the house Batllo ser/estar.PRES.3.SG in Barcelona
I need to remember that the Batllo House is in Barcelona.
- (7) a. **Context:** I read in the newspaper that Astrid and Gaston (two famous Peruvian cooks) just opened a new restaurant.
b. *Acabo de leer que el restaurante es/está en una antigua*
finish.PRES.1.SG of read.INF that the restaurant ser/estar.PRES.3.SG in an old
bodega, cerca de Coyoacán.
wine cellar next of Coyoacan
I have just read that the restaurant is in an old wine cellar next to Coyoacan.

Conversely, *estar* can be used with nominal predicates if the property denoted by the nominal is understood to hold temporarily of the subject referent. Consider for example, the context in (8).⁵

- (8) a. **Context:** Julia majored in Biology with honors, but due to the economic crisis, she has been unable to find a job as a biologist. I ask a friend about what she is doing these days. My friend says:
b. *Me han dicho que está de camarera en un restaurante en*
CL-IO have.PRES.3.PL told that estar.PRES.3.SG of a waitress.FEM in a restaurant in
Madrid.
Madrid.
I have been told she is waitressing in a restaurant in Madrid.

2.1.2 Adjective predicates

The traditional characterization of the Spanish *ser/estar* system has focused on the class of adjectives, since it is in this domain that one sees the greatest amount of constraints and variability in interpretation associated with copular choice. The most prominent understanding of the distinction, one that is taught to second-language learners of the language, is based on a dichotomy between “essential” vs. “accidental” properties or “permanent” vs. “temporary” characteristics. Among the first proponents of this view is Keniston (1937), who claims that *estar* is used to refer to properties that are accidental rather than essential, and therefore, that hold of an individual temporarily rather than permanently (see Ramsey, 1894, for a similar characterization).

The literature seems to suggest that at least for a class of adjectives there is a strong preference for either *ser* or *estar*. The semantic difference between so-called *ser*-preferring vs. *estar*-preferring adjectives has often been taken to correspond to the more pervasive distinction between stage-level and individual-level predication (Kratzer, 1995; Diesing, 1990, 1992; Arche, 2006). The idea is that the two copulas are linguistic

⁵We assume a syntactic constraint by which *estar* may not combine directly with a nominal predicate and requires it to be turned to a prepositional phrase. Therefore, the preposition *de* gets inserted when the post-copular material is nominal. Some such restriction would be necessary for any account of the full distribution of *estar*.

reflexes of a conceptual opposition between predicates that hold of spatio-temporal slices of individuals vs. individuals simpliciter (a distinction first proposed by Carlson 1977).

- (9) a. *Maria #está/es inteligente/altruista*
 Maria estar/ser.PRES.3.SG blond/intelligent/altruistic
 Maria is blond/intelligent/altruistic.
- b. *El artista está/#es presente/ausente/lejos.*
 The artist estar/ser.PRES.3.SG present/absent/far away
 The artist is present/absent/far away. Spanish; Maienborn 2005

However, several authors including Maienborn (e.g. Clements 2008; Camacho, 2012) have noticed that the linguistic diagnostics commonly used to distinguish between stage-level and individual-level predicates do not apply straightforwardly to predicates introduced by *estar* and *ser* respectively. These diagnostics include acceptability in perception reports, modification by temporal and locative frame adverbs, and occurrence in the antecedents of *when*-conditionals (Kratzer, 1989, 1995; Marín, 2010; Camacho, 2012; Fabregas, 2012).

For several adjectives, the choice between *ser* and *estar* correlates with the way that the adjective is interpreted in a given context. That is, not only does the use of *estar* signal that the property denoted by the adjective holds temporarily of the subject referent, but the property itself is understood to be qualitatively different when expressed by the same adjective, but occurring with *ser* vs. with *estar*. Some examples, including those from Clements (2008) and Ramsey (1894) are in (10)–(13); the observation is also found in the larger literature (e.g. Roldán, 1974; Solé and Solé, 1977; Gili Gaya, 1998).

- (10) a. *El reportero es sucio*
 The reporter ser.PRES.3.SG dirty
 The reporter is dirty-minded (thinks in a perverted way) OR is corrupt.
- b. *El reportero está sucio*
 The reporter estar.PRES.3.SG dirty
 The reporter is dirty (and needs a shower).
- (11) a. *Su hermano es bueno.*
 Your brother ser.PRES.3.SG good
 Your brother is a good person.
- b. *Su hermano está bueno.*
 Your brother estar.PRES.3.SG good
 Your brother is in good health OR good-looking. (Ramsey 1894:313)
- (12) a. *Beckman es incapaz de adaptarse*
 Beckman ser.PRES.3.SG incapable of adapting

Beckman is (mentally) incapable of adapting.

- b. *Si está incapaz...*
If estar.PRES.3.SG impotent
If he is not virile anymore... (physically incapable) (CREA: Clements 2008: 176)⁶

- (13) a. *Mi hermano es callado*
my brother ser.PRES.3.SG close-mouthed
My brother is close-mouthed (or taciturn).

b. *Mi hermano está callado*
my brother estar.PRES.3.SG close-mouthed
My brother is silent (he isn't talking). (Ramsey 1894:310)

In a class of cases, the choice between *ser* and *estar* signals a difference in the interpretation of the subject nominal. In (14-a), which contains *estar*, the nominal *el acero* is interpreted referentially as denoting a particular entity in the discourse context. In (14-b), on the other hand, the nominal is naturally taken to refer to the kind “steel”.

- (14) a. *el acero está duro*
the steel estar.PRES.3.SG hard
This steel is hard.

b. *el acero es duro*
the steel ser.PRES.3.SG hard
Steel is hard. (Roldán 1974: 68)

Similarly, (15-a) is understood to be a claim about a particular summer – the summer of the context, while in (15-b), *el verano* is understood to refer to the kind “summer”.

- (15) a. *el verano está caluroso*
the summer estar.PRES.3.SG hot
The summer is hot.

b. *el verano es caluroso*
the summer ser.PRES.3.SG hot
Summer is hot.

While most adjectives appear felicitously with both copulas, it has been claimed in the literature that some adjectives are obligatorily associated with either *ser* or *estar* and may not occur with the other copula. This purported categorical behavior is documented in the form of lists, such as the lists of *estar*-only adjectives that Maienborn and Clements provide in (16).⁷

⁶Corpus de Referencia del Español Actual (CREA).

⁷Marín (2010) also provides such a list. Note that the adjectives listed by Clements are deverbal participial forms. While we do

- (16) a. *ausente* (away), *solo* (alone), *próximo* (near), *vacío* (empty), *lleno* (full), *descalzo* (barefooted), *harto de* (fed up with), etc. (Maienborn 2005: 159)
 b. *levantado* (standing); *descalzo* (barefooted); *roto* (broken); *previsto* (anticipated) (Clements 2008: 161–162)

The central issue with such categorical lists of *estar*-only adjectives is that, in almost every case, discourse contexts can be constructed that allow the use of such adjectives with the other copula – sometimes with a change in the interpretation of the adjective. For instance, the adjective *solo*, when used with *ser* conveys the meaning corresponding to single. *vacío* ‘empty’ with *ser* in (17-b), is understood to denote the property of being intellectually or substantively pointless.

- (17) a. *El es solo no tiene pareja*
 He es.PRES.3.SG single, not have partner
 He is single, he doesn’t have a partner.
 b. *La solución que propones es vacía, sin consecuencias positivas*
 The solution that propose.PRES.2.SG es.PRES.3.SG empty, without consequences positive
 The solution that you propose is empty, without positive consequences.

In presenting such counter-examples we do not deny that the adjectives listed above may appear with *estar* with higher frequency. Rather we suggest that lexically associating adjectives with a single copula presents an inaccurate picture of the ingredients that determine legitimate combinations of adjective and copula meanings. In §5.3 we address the reason for why such adjectives may be preferentially (but not categorically) associated with only one copula.

In contrast to *estar*-preferring adjectives, variability among *ser*-preferring adjectives like those in (18), often seems to hinge on the construal of the temporal extent of the denoted property. Maienborn notes that several *ser*-preferring adjectives tolerate *estar* as long as the context supports a temporary reading. One of her examples is provided in (19).

- (18) *ser* adjectives: *discreto* (discreet), *inteligente* (intelligent), *cortés* (polite), *sabio* (wise), etc. (Maienborn 2005: 159)
 (19) *Enzo es bastante chismoso, pero ayer estuvo discreto.*
 Enzo ser.PRES.3.SG quite gossipy but yesterday estar.PAST.3.SG discreet
 Enzo is quite gossipy but yesterday he was discreet. (Maienborn 2005: 159)

However, some authors have claimed that there are *ser*-preferring adjectives for which the acceptability of *estar* is considered doubtful even when it is clear that the described property applies to some entity within some delimited temporal context. Marín (2010) offers the list in (20) of *ser*-only adjectives following on work by Lujan (1981) and Leborans (1999).⁸ We will address the issue of whether these adjectives in fact exhibit such categorical *ser*-only behavior in §5.3.

not attempt it here, it would be interesting to investigate further whether the verbal source of an adjective is connected to the choice of copular form in a systematic way.

⁸Marín does note that it is not clear how strict the restriction is, since for some of these adjectives, it is possible to find an appropriate context supporting the use of *estar*.

- (20) *catalán* ‘Catalan’, *cauto* ‘cautious’, *constante* ‘constant’, *cuidadoso* ‘careful’, *(des)cortés* ‘(im)polite’, *(des)leal* ‘(dis)loyal’, *(im)prudente* ‘(im)prudent’, *(in)discreto* ‘(in)discreet’, *(in)capaz* ‘(in)capable’, *(in)justo* ‘(un)just’, *immoral* ‘immoral’, *(in)mortal* ‘(im)mortal’, *inteligente* ‘intelligent’, *listo* ‘clever’, *llevadero* ‘bearable’, *sabio* ‘wise’, *socialista* ‘socialist’, *temerario* ‘reckless’, *vegetariano* ‘vegetarian’.

2.1.3 Summary

To summarize, there are broad correlations between predicate properties (stage vs. individual-level; temporary vs. permanent property denoting etc.) and the choice between *ser* and *estar* in copular clauses. But there seems to be no unifiable distinction in the meanings of property-denoting expressions that underlies the use of the two copulas. The presence of nuanced contrasts in interpretation and robust exceptions to semantically-based generalizations about the two copulas has led researchers to pursue a more context-sensitive account of the *ser/estar* phenomenon. We now turn to the observations and insights that pertain to the context-dependent uses of *ser* and *estar*.

2.2 Context-sensitive aspects of the *ser/estar* distribution

Besides the broad category-based and semantic observations about the *ser/estar* distribution discussed above, the literature notes that the use of *estar* is often dependent on certain pragmatic assumptions that speakers may make in context.

2.2.1 The use of *estar* implies knowledge of change

Roldán (1974), commenting on a prior claim by Stockwell et al (1965), notes that a sentence containing *estar* often gives rise to an implication that some change has occurred in the subject referent.⁹ For instance, while (21-a) can be used in a context in which the speaker is meeting Juan for the first time, (21-b) could only be used felicitously in a context in which the speaker has known Juan before and is therefore aware of the fact that his weight has changed.

- (21) a. *Juan es gordo*
 Juan ser.PRES.3.SG fat
 Juan is fat. (Roldán 1974: 72)
- b. *Juan está gordo*
 Juan estar.PRES.3.SG fat
 Juan looks fat. (Roldán 1974: 72)

However, as she argues, this condition of knowledge of observable change obtaining in the subject referent cannot be a necessary condition on the use of *estar* since there are uses that do not require such

⁹The idea that *estar* conveys an implication about change already appears in Ramsey (1894) but is restricted there to past participial adjectives. Other early authors that touch on the (actual or potential) change implication include Keniston (1937), Bull (1942), and Demonte (1979).

an interpretation. For instance, (22) does not have only the interpretation that the beach referred to is temporarily good, or that it “has become” good (as the translation in (a) suggests). The sentence can also convey an individual’s first impression of the beach – that it strikes the speaker, who encounters it, as good (as in b).

- (22) *Esta playa **está** buena*
 This beach estar.PRES.3.SG good
 (a) This beach is good today.
 (b) This beach seems good (to me).

In fact, in several uses of *estar*, such as the ones below, there is no implication at all that a change has occurred in the subject referent or that it will occur in time.

- (23) a. *antes de usar asegúrese que los sellos **estén** intactos*
 Before of use ensure.IMP that the seals estar.SUBJ.3.PL intact
 Before using, make sure that the seals are intact. (Roldán 1974: 72)
- b. *En Norteamérica hay pocos lagos que **estén** incontaminados.*
 In North America have few lakes that estar.SUBJ.3.PL unpolluted
 In North America, there are a few lakes that are uncontaminated. (Roldán 1974: 72)

Clements (2008: 165) suggests that there is an effect of *potential* rather than actual change; i.e. whether it is assumed in the context that a given subject referent is able or not to undergo change with respect to a given position in space or a given state.¹⁰ In his words (boldface is ours):

If the subject referent denotes an inanimate first-order entity, such as an object, the issue becomes whether, in our naive understanding of the world, the denoted entity can undergo alteration or not with respect to a given state or a given spatial position. If we are talking about the moon, for example, we acknowledge that its state of visibility changes; in the case of a road, it can be made wider or narrower, and so on. Given that the directionality of the states predicated of inanimate subject referents hinges upon whether they are considered alterable or not with respect to a given spatial position or a given state, this feature is **pragmatically assessed by the speaker within a given situation for each subject referent**. Consequently, **the interpretation of a given adjective depends on the speaker’s assessment of the situation** and the nature of the elements involved in the utterance. (Clements 2008: 184)

Clements also makes the observation that certain adjectives that denote the result-state of some event (entailing change), while typically occurring with *estar* (therefore classifiable as *estar*-preferring adjectives), may appear with *ser* in some contexts. For example, the adjectives *casado* (married) and *divorciado* (divorced) almost always appear with *estar* but may appear with *ser* if it is the civil status of an individual, rather than the event experienced by the individual, that is being referred to in the context. The examples below are attested in the CREA and taken from Clements’ discussion on the matter. They suggest that

¹⁰This idea is also anticipated in Bull (1942).

speakers may choose to use *ser* when change or changeability associated with subject referent is not under discussion.

- (24) a. *Hace algunos días me propuso que formalizáramos nuestra situación, pero la verdad es que no sé qué hacer porque resulta que él también es casado. Separado legalmente y con tres hijos, más o menos de la misma edad de los míos.*
 Do.PRES.SING some days CL.IO suggest that formalizeSUBJ.1PL our situation but the truth ser.PRES.3.SING that NEG know.PRES.1SING that do.INF because turn.out.PRES.3.SING that he also ser.PRES.3.SING married divorced legally and with three children more or less of the same age of the mine
 A few days ago, he suggested to me that we formalize our situation, but the truth is that I don't know what to do, because it turns out that he also is married, legally separated and with three children, more or less of the same age as mine. (CREA; Clements (2008: 175).
- b. *Juan es un abogado de treinta y tres años, es divorciado y tiene una hija llamada Malena.*
 Juan ser.PRES.3.SING a lawyer of thirty and three years ser.PRES.3.SG divorce.PST.PART and have.PRES.3.SING a daughter called Malena
 Juan is a lawyer, 33 years old, divorced, and has a daughter named Malena. (CREA; Clements (2008: 175).

2.2.2 The use of *estar* to signal novelty/unexpectedness

In a class of cases, the use of *estar* suggests that the speaker is basing their claim on immediate experience that is contrary to the expectations of the speaker in the context. The speaker is understood to contrast the observed fact (the presence of some property in the subject referent) with some more expected alternative property or simply the absence of the observed property. Examples are in (60) and (61). In (60), the speaker does not expect the decor to be old-fashioned but rather contemporary and perhaps, minimalist. In (61), Louisa expects the house to be updated and well-maintained.

- (25) a. **Context:** I go to a friend's place for the first time. My friend is very hip and modern and I notice that the decoration in her place is very old-fashioned. I say:
 b. *¡La decoración es/está anticuada!*
 The decoration ser/estar.PRES.3.SG old-fashioned!
 The decoration is old-fashioned!
- (26) a. **Context:** Louisa rents an expensive farmhouse on Airbnb for a weekend and when she gets to the house, she realizes that it is a badly maintained structure from the 19th century. She exclaims:
 b. *¡La casa es/está vieja!*
 The house ser/estar.PRES.3.SG old!
 The house is old!

These cases have not been clearly identified as such in the literature but there is recognition that **estar** can be used to make evidence-based claims in contexts where the property attribution is not expected. Roby (2009: 158–159), for instance, provides an example where the use of *estar*-sentences is associated with the stimulation of one or more of the five senses. He calls such predications “evidential predicates.”

- (27) *Este sofá está duro.*
 This sofa estar.PRES.3.SG hard.
 This sofa is hard.

2.2.3 The use of *estar* and relational uses of gradable predicates

Yet another contextually licensed use of *estar* concerns what we are calling *relational uses* of gradable adjectives. In such uses, the property denoted by the adjective is interpreted as obtaining in the nominal denotation to a degree that depends on a relation between the nominal denotation and some other entity salient in the discourse context. For instance, the use of adjectives like *tight*, *loose*, *long*, *short*, *cramped*, *spacious* may be sometimes sensitive to how the object to be described by the gradable adjective is related to a specific contained or containing entity. Consider the examples in (28). In (28-a), the jacket’s fit on Anne is what determines whether it exceeds the contextual standard for tightness. In (28-b), it is Fido’s size that makes the kennel cramped and a similar dependence obtains between the size of the shower opening and the curtain’s being judged long in (28-c).

- (28) a. The jacket is tight for Anne.
 b. The kennel is cramped (for Fido) but would be ok for a smaller dog.
 c. This curtain is (too) long for the shower enclosure.

One sees that in these cases, the basis for computing the standard for interpreting the gradable predicate comes directly from properties of the larger situation rather than a comparison class or a larger set of similar entities. In Spanish, such contexts license the use of *estar* as seen in the examples in (29) and (30). In (29-a-b), Lucia expected, or at least hoped, that her online purchase would be successful. The jacket’s being tight (on the shoulders) is not a property that obtains independently in the jacket but only in connection to its being tried out by Lucia. Contrast this with a non-relational use of the same adjective in (29-c-d), where the tightness is construed as an intrinsic design property of the jacket. Regardless of who wears the jacket, it is designed to fit tight. In (30-a-b), the attribution of longness to the curtain depends on the size of the shower-opening; not so in (30-c-d), which involves a non-relational use of the same adjective.

- (29) a. **Context:** Lucía bought a beautiful jacket through Amazon, but it does not fit her, so she needs to return it.
 b. *La chaqueta le está ajustada en los hombros.*
 The jacket CL-IO estar.PRES.3.SG tight.FEM on the shoulder.PL
 The jacket is tight on the shoulders.
 c. **Context:** I love the style of the jacket that Lucía just bought.

- d. *La chaqueta es ajustada y muy moderna.*
 The jacket ser.PRES.3.SG tight.FEM and very fashionable.FEM
 The jacket is tight and very fashionable.
- (30) a. **Context:** I have a low shower opening for which I am trying to find a shower curtain. I go and buy the shortest shower curtain I can find, believing that it will fit. Once home, I check the fit and find that the curtain is too big for my opening.
- b. *la cortina está larga*
 the curtain estar.PRES.3.SG large
 The curtain is long.
- c. **Context:** I am checking out different curtains for the living room windows trying to figure out whether floor-length curtains or shorter window-length ones will look better. The salesperson tells me:
- d. *Estas cortinas con encaje blanco son largas.*
 These curtains with lace white ser.PRES.3.PL long
 These white lace curtains are long.

To our knowledge, the occurrence of *estar* with relational uses of gradable predicates has not been noted in the prior literature (but see Morley (1942) and Ramsey (1894) for possible examples). Such a use highlights yet another facet of *estar*'s context-dependence.

2.2.4 The use of *estar* to signal exceeded contextual expectations

Another use of *estar* that has not been widely discussed in the prior literature is to signal that the property attributed to the subject referent is not expected/desired to hold to the observed degree based on prior experience or information. That is, it may indicate the presence of surprise (including disappointment) in an agent with respect to aspects of the asserted predication. For instance, in (31-b), the snowflake is described as extraordinary in comparison to the other snowflakes the speaker has just seen. The use of *estar* is licensed here based on the expectations that the speaker has built from the immediately prior observations of snowflakes. In the comparison among the observed snowflakes, the last snowflake comes out as exceeding the standard for beauty/extra-ordinariness to an unexpected degree.

- (31) a. **Context:** There is an exhibit of blown-up photographs of three snowflakes at the Science Museum. A visitor examines them in order, and at each one, says:
- b. *Este copo de nieve es interesante, este es común, pero ESTE, este*
 This snowflake ser.PRES.3.SG interesting, this be.PRES.3.SG ok but this, this
está extraordinario.
 be.PRES.3.SG extraordinary.MASC
 This snowflake is interesting, this one is okay, but THIS ONE, this one is extraordinary.

In (32-b), the use of *estar* suggests that the thickness is greater than desired in a good tiramisú.

- (32) a. **Context:** A baker is critiquing the tiramisú just baked by her assistant, which did not turn out as it was supposed to.
 b. *La capa del tiramisú **está** muy gruesa.*
 the layer of the tiramisu estar.PRES.3.SG very thick
 The layer of the tiramisu is too thick.

In contrast, the minimally differing variant with *ser* in (33) can be used to convey a generalization about tiramisús (as a kind) – that their layers are thick, or it may be used to describe the particular tiramisu in context without any evaluative connotation.

- (33) *La capa del tiramisú **es** gruesa.*
 the layer of the tiramisu ser.PRES.3.SG thick
 The layer of the tiramisu is very thick.

Two other examples of this use are given in (34) and (35).

- (34) a. **Context:** Luisa notices that her friend is answering all the questions correctly in class. She is quite surprised because her friend barely talks in class and is always distracted. Luisa says to him:
 b. *¡Qué inteligente que **estás** hoy!*
 how intelligent that estar.PRES.2.SG today
 How intelligent you are today!
- (35) a. **Context:** Luisa enters the Sistine Chapel for the first time having only seen pictures of the artistic details before. She says:
 b. *la capilla Sixtina **está** enorme*
 The chapel Sistine estar.PRES.3.SG enormous
 The Sistine Chapel is enormous!

This pattern bears similarity with what we are calling the “novelty” uses of *estar*. However, the “exceeded contextual expectations” use is richer in that it conveys a claim about the degree to which a gradable property obtains in the subject referent rather than a claim about the presence vs. absence of some property.

2.2.5 The use of *estar* to signal changed contextual standards

Yet another use of *estar*, not noted before, is to signal that the speaker is allowing for an entity to be in the positive extension of a gradable predicate by lowering the contextual standard with respect to a specific context. Consider the example in (36).

- (36) a. **Context:** Juan lives in New York and is used to seeing really tall skyscrapers. He visits a friend in New Haven, where the buildings are not as tall. His friend points to building after building to determine what counts as tall for Juan. For one building that is taller than the others, but not as tall as a New York skyscraper, John reluctantly concedes:

- b. *OK, ese edificio está alto.*
 OK, that building estar.PRES.3.SG tall
 OK, that building is tall.

In such a use, the property denoted by the adjective is interpreted as obtaining in the nominal denotation to a sufficiently high degree only when the contextual standard is recomputed on the basis of an alternative comparison class. Again, like the relational cases in §2.2.3, this computation of the standard depends on properties of the larger situation, but specifically involves the consideration of a different comparison class.

2.3 Summary

In this section, we have described the basic distribution of *ser* and *estar*. Although *ser* appears predominantly with nominal predicates and *estar* with locative predicates, this distribution is not categorical and contexts exist in which the less frequent copula occurs felicitously. With respect to patterning with adjectival predications, there is much variability with some adjectives preferentially occurring with one copular expression. Finally, expanding on previous observations in the literature, we identified a range of contextual conditions – specifically conditions pertaining to the knowledge and assumptions of the speaker – that license the use of *estar* regardless of whether the property obtains temporarily or otherwise in the subject-referent. These contextual conditions are central, in our opinion as well as that of several authors, in understanding the underpinnings of the *ser-estar* contrast. In the next section, we briefly describe the intuitions underlying previous pragmatically oriented accounts before turning to our own analysis of the pattern in §4.

3 Previous accounts

A key intuition that recurrently emerges in descriptions of the *ser-estar* contrast is that the use of *estar* is sensitive to properties of the subject referent, not simpliciter, but rather relative to some specific situation. Roldán (1974) characterizes this as follows:

The semantic feature existence is presupposed by *estar*, beyond this, *estar* asserts the presence of the subject at a specific point in space or time. Its main extension is: the presence of the subject in the state or condition denoted by the predicate at the time specified by the sentence.(pp. 74)

Clements (1988), using slightly different terminology, proposes that *estar* “presupposes a connection either to the relative position of the subject referent in space or to a prior or assumed state/situation” (Clements, 1988:788). This presupposition is encoded in the lexical entry of *estar* and constitutes the main difference from *ser*, which lacks this presupposition. This property of *estar* is represented by Clements using the feature [Nexus], a feature that establishes a link to a presupposed prior location or state. The difference between the two copulas is thus modeled by associating with each the presence or absence of the [Nexus]

feature. *ser* is taken to be [-Nexus] while *estar* is taken to be [+Nexus].¹¹ Here is an illustration of how prior information is relevant for the use of *estar*.

- (37) a. *Las nubes están altas.*
 The cloud.PL estar.PRES.3.PL tall.FEM.PL
 ‘The clouds are high’. [Clements 1988:788]
- b. *Sus ojos están rojos.*
 Her/his eyes.PL estar.PRES.3.PL red.
 ‘Her/his eyes are red’. [Clements 1988:788]

Clements argues that in (37-a), *estar* presupposes a connection to a prior location of the clouds in the sky. In (37-b), the speaker must presuppose the existence of a prior state in which the eyes did not have the property of being red. Such information should be part of the common ground in order for the use of *estar* to be felicitous. Additionally, the link to prior experiences comes to bear in determining the comparison class relative to which standards for gradable predicates get computed. When the speaker uses *ser* ([-Nexus]) with a gradable predicate like *alto* as in (38-a), the comparison is understood to be based relative to a class norm – a norm valid for a particular set of individuals established on the basis of shared beliefs about the world. In contrast, the use of *estar* [+Nexus] invokes what Clements calls an individual-norm comparison (based on Falk (1979)), in which the norm is taken to apply to a particular individual and an alternative state of the subject-referent becomes relevant (38-b).¹²

- (38) a. *Para su edad, Pepe es bien alto.*
 For his age Pepe ser.PRES.3.SG quite tall.MAS
 ‘For his age, Pepe is quite tall’. [Clements 1988:788]
- b. *Pepe, ¡qué alto estás!*
 Pepe that tall.MAS estar.PRES.2.SG
 ‘Pepe, how tall you are!’. [Clements 1988:788]

Connected to the notion of Nexus are additional factors that regulate felicitous combinations of copula and adjective; these include animacy and definiteness properties of the subject referent, the underlying dynamic situation expressed by the adjective and the time stability of the property. The final interpretation of the copular construction depends on interactions that include these factors. Due to limitations of space, we do not cover these factors and their interactions and refer the reader to Clements’ (1988, 2006) original work for further details.

¹¹In his later article (Clements 2008), he takes the relevant feature to be [aspect]. Either feature, in the absence of a formal specification of what precise property of the denoted meaning or discourse situation it is intended to represent, fails to provide us with a substantive analysis of the copular distinction, although it does contribute insight that directs us towards our unified formal analysis.

¹²Class-norm and individual-norm comparisons are analogous to what Toledo and Sasoon (2011:141-142) refer to as *extensional-category* and *counterpart-set* comparison classes, respectively. An extensional-category comparison includes members within the category containing the individual the adjective is predicated of, including distinct individuals. The result is a comparison *between* individuals. In contrast, a counterpart-set comparison comprises different realizations of the individual at different indices, resulting in a *within-individual* comparison in which the individual is compared to its counterparts.

Maienborn (2003; 2005), building on Clements’ insight regarding *estar*’s dependence on a connection to a prior position or state, proposes that *estar* can be best modeled as a specificity marker – i.e. it presupposes a link to a specific discourse situation, where specificity amounts to the speaker’s certainty regarding the identity of a discourse referent (Maienborn 2005: fn 16). Her analysis – the only one so far to provide explicit lexical entries and a compositional semantics for the two copulas – uses the tools of situation semantics to distinguish between their contributions. Both *ser* and *estar* introduce a stative argument that corresponds to the attribution of some property to the subject referent but only *estar* carries an additional presupposition that the stative argument is linked to a specific discourse situation. *ser* remains neutral in this regard.¹³ The presence of this specificity presupposition has a pragmatic effect. The use of the presuppositionally stronger variant (in this case, *estar*) serves to restrict speakers’ claims to a particular discourse situation, which Maienborn likens to Klein’s (1994) *topic situation*. According to Maienborn, such a restriction to the discourse situation is only relevant in any context if there are contrasting alternatives to the topic situation. It is these contrasts that give rise to distinct inferences associated with *estar*, in particular the temporariness inference. Additional kinds of *estar*-licensing contexts that Maienborn brings attention to are those in which the topic situation contrasts with spatially distinct alternatives and those in which it contrasts with epistemically distinct alternatives (Maienborn 2005: pp 172). Her examples for the spatial and epistemic cases are in (40) and (41) respectively.

- (40) a. **Context:** A journalist is reporting on the Panamericana and she is now near Lima.
b. *La carretera está ancha.*
The road estar.PRES.3.SG wide
The road is wide. [the current topic situation contrasts with differently localized situations in which the property of being wide does not apply to other distinct parts of the Panamericana].
- (41) a. **Context:** A botanist in the Amazon jungle has just discovered a tree of a species that was previously unknown.
b. *Las hojas están amarillas.*
The leaves estar.PRES.3.PL yellow
The leaves are yellow. [the current situation contrasts with topic situations that do not allow us to decide whether the property applies to the leaves across time.]

3.1 Summary and issues

There are three main insights from the prior literature that should shape any viable formal analysis of the copula distribution in Spanish.

¹³Maienborn (2005:11) calls such stative eventualities Kimian states, which she defines as “abstract objects for the exemplification of a property *P* for a holder *x* at time *t*.” She proposes the following lexical entries for the two copulas. The notation / conveys that the content following the ‘/’ is presuppositional and $[s_i | R(z, s_i)]$ states that there is a specific discourse situation s_i that is linked by some contextually determined relation *R* to the Kimian state *z* that *estar* introduces.

- (39) a. *ser*: $\lambda P \lambda x \lambda z. [z \approx [P(x)]]$
b. *estar*: $\lambda P \lambda x \lambda z. [z \approx [P(x)] / [s_i | R(z, s_i)]]$

- (42) a. **Sensitivity to discourse context:** The use of *estar* can only be characterized fully by taking into consideration properties of the discourse context; any analysis that relies on a classification of lexicalized properties of predicates alone is inadequate.
- b. **Presuppositional component:** The discourse sensitivity of *estar* is to be modeled as a presuppositional, rather than truth-conditional, at-issue component of meaning.
- c. **The neutrality of *ser*:** *ser* is to be analyzed as an “elsewhere” copula. It is semantically neutral and its distribution is to be accounted for in terms of the principle of division of pragmatic labor.

Maienborn’s analysis centrally relies on all of these insights and thus has the desired structure. It is inadequate, however, in three respects: First, although the analysis crucially relies on the notion of a specific discourse situation, Maienborn does not offer a clear formalization of specificity for a discourse situation nor clarification about how alternatives to such situations are accessed. Second, the analysis, as it stands, does not provide a clear account of the full range of uses of *estar* described in §2, in particular, in §2.2. Just to give some examples, it is not immediately apparent what precise properties of discourse situations are to be considered in explaining the preferred choice of *estar* with the adjectives in (16), its preferred co-occurrence with locative predicates more generally, its presence in examples like those in (23) with predicates like *intactos* and *incontaminados* which signal the potential for change, and its absence in examples like those in (24) with *estar*-preferring predicates like *casado* and *divorciado*. Third, it is left unclear what the link *R* is supposed/allowed to be between the arguments of *estar* and the specific discourse situation. Is the relation between the state and the discourse situation one of temporal overlap or containment? Does the link enforce any constraints on the interpretation of the predicate or individual arguments of *estar*?

We think that underlying the three problems with Maienborn’s otherwise appealing approach (besides being inexplicit about what a specific discourse situation is) is the fact that it fails to articulate the precise connection between such a discourse situation and the semantic values of the constituent expressions in an *estar* sentence. We offer an analysis in §4 that formalizes the intuition that the truth of an *estar* sentence is sensitive to properties of the discourse context.

4 The analysis

Let us retain the main intuition from Clements and Maienborn that there is something about an *estar*-containing sentence that “restricts” it to some specific context, a restriction that does not appear with the use of *ser*. We suggest that this felt restrictedness can be modeled by simply making reference to and comparison between truth values of *estar* sentences (with invariant content) across possible circumstances of evaluation. In a nutshell, on the analysis proposed here, the use of *estar* signals that the prejacent is **boundedly** true at the considered circumstance of evaluation *i*. This means that *i* is a maximal verifying circumstance for the prejacent (in a sense that we shall explicate) and that there are accessible circumstances *i'* in the context at which the prejacent is false. Intuitively, the **boundedness** requirement puts a boundary with respect to the circumstances at which the prejacent may be true and signals the presence of accessible circumstances which are “beyond” this boundary.

We proceed now to our understanding of a circumstance of evaluation. The familiar Kaplanian theory of how the content and truth-value of a sentence depends on the context of its use works as follows: A sentence S expresses some (variable or invariant) content determined by some context of use. The content of a sentence is a proposition – a function from circumstances of evaluation to truth-values. The semantic theory tells us under what conditions any proposition is true at a circumstance of evaluation. What a circumstance of evaluation is depends on our understanding of the parameters that determine propositional truth. If propositions are true or false only relative to possible worlds, then a circumstance of evaluation is a possible world; if propositions are true or false only relative to a possible world and a time, then a circumstance of evaluation is a world-time pair. If propositions are true or false relative to possible worlds, times, and locations, then a circumstance of evaluation is taken to be a world-time-location triple, and so on, as illustrated in (43).

- (43) a. $\langle w \rangle$ (worlds)
 b. $\langle w, t \rangle$ (worlds, times)
 c. $\langle w, t, l \rangle$ (worlds, times, locations)
 d. $\langle w, t, l, a \rangle$ (worlds, times, locations, agents)
 e. $\langle w, t, l, a, c \rangle$ (worlds, times, locations, agents, contextual standards)

Thus, by sufficiently enriching the set of parameters that constitute the circumstance of evaluation, we can finely model the effect of changes in such circumstances on truth values. In addition to an enriched notion of a circumstance of evaluation, the semantics for *estar* will rely on explicating a strength ordering over alternative circumstances of evaluation, an ordering derived from the structure of the domains corresponding to the different parameters in any given circumstance. This strength ordering constitutes a key innovative element of the analysis.

4.1 Semantic setup

In addition to the domain of ordinary objects D (type e), the ontology includes a non-null set of temporal intervals \mathcal{I} (type ι), with points as a special case. W (type s) is a non-empty set of worlds. \mathcal{L} (type r) is the domain of spatial regions ordered by the contiguity $\supset_{\mathcal{L}}$, overlap \circ_r , and subset relations \subseteq_r . $D, \mathcal{I}, \mathcal{L}$ are assumed to be mereological domains structured by the relation of parthood \leq (and proper parthood $<$).¹⁴

The ontology further includes degrees, entities that represent quantities assigned by measure functions such as weight, height, or temperature. Taking degrees to be part of the ontology in formal semantic analyses

¹⁴To fully explicate our assumptions, each mereological domain is taken to be a join semi-lattice $\langle U, \oplus \rangle$ whose elements satisfy the *part* relation ((44)a), the *proper part* relation ((44)b), the *overlap* relation ((44)c), and the remainder principle ((44)d). Krifka (1998) defines all part structures as tuples of a set of entities, the sum operation, and the relevant relations that constrain the part-structure. So a part structure is a tuple $\langle U_P, \oplus_P, \leq_P, <_P, \otimes_P \rangle$. We assume this derivation of part structures from elements in the basic ontology.

- (44) a. \leq , the *part* relation, def. as: $\forall x, y \in U [x \leq y \rightarrow x \oplus y = y]$
 b. $<$, the *proper part* relation, def. as: $\forall x, y \in U [x < y \leftrightarrow x \leq y \wedge x \oplus y \neq y]$
 c. \otimes , the *overlap* relation, def. as: $\forall x, y \in U [x \otimes y \leftrightarrow \exists z \in U [z \leq x \wedge z \leq y]]$
 d. Remainder principle: $\forall x, y \in U [x < y \rightarrow \exists! z [\neg [z \otimes x] \wedge x \oplus z = y]]$

of gradable predicate meaning (first introduced in Cresswell (1976)), has become an influential treatment of these and related expressions in the recent literature.¹⁵ The context-sensitive interpretation of gradable predicates is captured here by defining a “delineation function” \mathbf{d}_c relative to a given context of use c which maps gradable predicates P_g to the degree that constitutes the contextual standard for P_g in c . That is, it is a function from contexts to delineations.¹⁶ The set of all possible delineations is notated \mathcal{D} .

$$(45) \quad \forall P_g : \mathbf{d}_c(P_g) = \mathbf{max}(d)[\forall x \in D [\llbracket pos(P_g)(x) \rrbracket^c = 1 \rightarrow (P_g)(x) \geq d]]$$

We make use of a modified version of the Kaplanian theory outlined above. As expected, the content of a sentence S (including the semantic value of indexical expressions occurring in S) is determined by the context of use c .¹⁷ In addition, the context of use c also serves to determine the circumstances of evaluation at which the truth of the sentence is evaluated. This fact is explicitly articulated in MacFarlane (2014: 78–79), who distinguishes between two kinds of context-sensitivity. In his words:

There are two distinct ways in which an expression can be context-sensitive. Its extension can depend on a feature of the context because that feature plays a content-determining role or because that feature plays a circumstance-determining role (MacFarlane 2014: 79).

That is, just as much as the discourse context directly fixes the value of indexical expressions like *I*, *now*, or *here*, it constrains the values of tense-markers, temporal and locative adverbials, gradable predicates, etc. by constraining what circumstances of evaluation are relevant for truth-assessment. As a concrete example, take a sentence like:

- (46) *Yo estaba furioso.*
 I estar.PST.3.SG furious
 I was furious.

Uttered at a discourse context c , the truth of this sentence will depend on both the content of specific expressions and the circumstances relative to which it is evaluated, both of which are constrained by c . While the value of the first person pronoun is fixed directly to be the speaker in the context, the value of the past tense form *estaba* is not directly fixed to the time of utterance. However, the context does provide us with possible values of the time parameter of those circumstances of evaluation relative to which (46)’s truth may be assessed. These are the possible reference/topic times that are anaphoric on the prior discourse context. c also constrains possible values for the contextual standard relevant for interpreting *furioso*. Thus, truth-value assessment of contents indirectly depends on the discourse context due to its role in constraining relevant circumstances of evaluation.

¹⁵The other kind of approach to gradability (Klein (1980); Fine 1975; Kamp 1975 etc.), does not introduce the semantic type ‘degree’ into the semantics, but instead analyzes gradable predicates as context-sensitive, partial functions from individuals to truth values. For our purposes, it does not matter which of the two treatments is adopted, since both approaches allow the extensions of gradable predicates to vary across contexts of use, which is the only feature that our analysis of *estar* requires.

¹⁶The term delineation function is taken from Barker (2002: 6) where it is defined as a function from worlds to Lewisian delineations. The effect of \mathbf{d}_c here is identical.

¹⁷Kaplan (1989) distinguishes between his “contents” and the more familiar term “propositions” because his contents are assigned truth-values relative to worlds, times, and locations, rather than just worlds. However, we believe (and will assume) that Kaplanian contents are equivalent to propositions in any framework that treats propositions as functions from indices to truth-values, where the content of an index can be enriched beyond the world parameter.

This connection between discourse contexts c and relevant circumstances of evaluation i is formally modeled by introducing a function $Circ$ that assigns to each context c a set of circumstances of evaluation $I' \subseteq I$, where each $i \in I'$ is relevant to assessing the truth of S at c .¹⁸ We will require each circumstance to be a tuple of at least five parameters, $\langle t, w, l, a, \mathbf{d}_c \rangle$, with $t \in \mathcal{I}$, $w \in W$, $l \in \mathcal{L}$, $a \in D$, and \mathbf{d}_c determined by the context of use defined above in (45). The discourse context c itself is a tuple $\langle t, w, l, a, \mathbf{d}_c \rangle$, i.e. it is a possible circumstance of evaluation and may be an element of $Circ(c)$. In fact, we will see that in several cases, the circumstance of evaluation i is identical to the context of evaluation c_0 .¹⁹

$$(47) \quad Circ =_{def} f : I \rightarrow \wp(I)$$

4.1.1 Entailment-based ordering over circumstances

At any point in a conversation, interlocutors will have a shared understanding of the temporal and spatial entities as well as possible values for contextual standards and attitude holders that are relevant to interpreting the unfolding discourse. They will also have shared common beliefs about what the facts are, which corresponds to a set of possible worlds (the context set), and the topic of the conversation (the current question under discussion (CQ)). It is these shared assumptions about facts and discourse goals that determine the possible values of the time, world, location, agent, and contextual standard parameters of elements of $Circ(c)$. In effect, $Circ$ generates a set of contextually relevant alternative circumstances at which the truth of a single proposition can be evaluated. This is the circumstantial counterpart of a function like \sim (Rooth 1985, 1992), which generates alternatives whose semantic value is determined relative to a single circumstance of evaluation (typically a world).

In existing frameworks of the structure of discourse (e.g. Roberts 1996, Beaver & Clark 2008), the notion of propositional alternatives and entailment relations between propositional alternatives pertains to the lexically determined semantic content of propositions. The alternative set relative to a given proposition is constructed by varying the values for some focused element in the lexical material realizing that proposition. Entailment relations between propositions are a consequence of the denotations of the varied lexical material. The implicit assumption is that such minimally different alternative propositions do not vary in terms of circumstantial content – i.e. they are evaluated relative to identical circumstances. To give an example, a question like *Who wore a beautiful dress at the party?* can have as its meaning the following set of propositions, assuming only two individuals are relevant: $\{ \text{Mary wore a beautiful dress to the party } (m), \text{ Amy wore a beautiful dress to the party } (a), \text{ Mary and Amy wore a beautiful dress to the party } (m \oplus a) \}$. The propositions, ordered by strength (\succeq), have the ranking $\{ \langle m \oplus a, a \rangle, \langle m \oplus a, m \rangle, \langle m \oplus a, m \oplus a \rangle, \langle m, m \rangle, \langle a, a \rangle \}$. But this assumes that the content of each proposition is determined relative to the same temporal interval (say, last Sunday), the same location (say, Clintonville, Columbus), and the same contextual standard. Once this content is fixed, the strength ordering between propositions emerges from the relation between the set of worlds they denote. Stronger propositions are those that denote a subset of the worlds that weaker propositions denote.

¹⁸ $I = \mathcal{I} \times W \times \mathcal{L} \times D \times \mathcal{D}$.

¹⁹ There is no harm done by letting the context be equipped with delineations, since truth-values and extensions of non-indexical expressions will still be calculated relative to $Circ(c)$ and not c directly.

In the approach we are taking here, the set of alternative propositions have invariant lexical content and only differ with respect to the circumstances (drawn from $Circ(c)$) that they are asserted to be true of. Put briefly, the contrast between standard alternative-based approaches and our approach is as follows: In the former, *minimally varying* lexical content is evaluated relative to *identical* circumstances of evaluation. In the latter, *identical* lexical content is evaluated relative to *minimally varying* circumstances of evaluation.

Strength relations between such circumstantial alternatives depend on the properties of the parameters in the different circumstances of evaluation. Intuitively, a circumstance of evaluation i is at least as strong as another circumstance of evaluation i' iff for any proposition p , $\llbracket p \rrbracket^i = 1 \rightarrow \llbracket p \rrbracket^{i'} = 1$. Consider a stative sentence like *This grass is green*. Its interpretation (and truth) depends (minimally) on what temporal interval and spatial region it is asserted to be true at. For instance, the sentence may be true if the definite description is interpreted relative to a small patch of grass near the flower-bed in my yard but not relative to the entire yard. Or it may be true relative to some time surrounding the utterance time, but not a longer period over which the grass dries out and becomes yellow. For any stative proposition, asserting its truth at a circumstance (especially at its spatio-temporal parameters) requires asserting that it is true *throughout* the spatio-temporal region. This gives rise to an entailment relation between alternative circumstances – if a stative proposition is evaluated as true relative to some interval or location, it will be evaluated as true at its subintervals or its sub-locations – but not vice versa.²⁰

Generalizing from this, we will define an entailment-based strength relation (\succ) on $Circ(c)$ as follows. Let $i \in Circ(c) = \langle t_i, w_i, l_i, a_i, \mathbf{d}_{c_i} \rangle$ and $i' \in Circ(c) = \langle t_{i'}, w_{i'}, l_{i'}, a_{i'}, \mathbf{d}_{c_{i'}} \rangle$. Then, with respect to any stative proposition p_s , i is at least as strong as i' ($i \succeq i'$) iff :

- (48) a. $t_i \geq t_{i'}$ OR
 b. $l_i \geq l_{i'}$ OR
 c. $a_i \geq a_{i'}$ OR
 d. $\mathbf{d}_{c_i} \gg \mathbf{d}_{c_{i'}}$ ²¹ OR
 e. $w_i \leq_{g_r(p, w_0)} w_{i'}$ AND
 f. For all other parameters p , $p_i = p_{i'}$.

(48) explicates how strength-based comparison between such minimally different circumstances of evaluation depends on relations between parameters. With mereological domains, strength is determined in terms of mereological inclusion. Given two circumstances differing along a single parameter, the value for the differing parameter in the stronger circumstance mereologically includes the value for the differing parameter in the weaker circumstance. In the case of delineations, strength is determined by the value of the contextual standards they assign. Comparing two circumstances differing along the delineation parameter,

²⁰The definition of circumstantial strength for eventive propositions will necessarily differ since eventive propositions are required to be true *within* rather than *throughout* a temporal interval. The entailment relation therefore is reversed at least as far as the temporal parameter is concerned. That is, if an eventive proposition is evaluated as true relative to some interval, it will be evaluated as true at all its superintervals. In what follows, we only develop the notion of a strength-based relation on circumstances, relative to stative propositions.

²¹A delineation \mathbf{d}_{c_i} is stronger (\gg) than a delineation $\mathbf{d}_{c_{i'}}$ iff \mathbf{d}_{c_i} assigns to each predicate P_g a higher contextual standard in c than $\mathbf{d}_{c_{i'}}$.

the contextual standards assigned by the delineation function in the stronger circumstance are higher than those assigned by the delineation function in the weaker circumstance.

In the case of worlds, we will determine their relative strength with respect to a totally realistic ordering source. In the Kratzerian system, ordering sources generate a set of propositions that are used to allow for comparative evaluations of possible worlds based on their stereotypicality, desirability, law-abiding properties, or closeness to the actual world. A totally realistic ordering source $g_r(w_0)$, orders worlds with respect to what is the case in the actual world. The ordering source assumed here, $g_r(p, w_0)$, associates with every proposition p and world w the subset of those propositions that are both true in the actual world w_0 AND that are causally independent of p at w_0 . In other words, $g_r(p, w_0)$ contains that subset of propositions in $g_r(w_0)$ that p is not causally dependent on in w_0 . We can call the set of such propositions the causal ancestors of p .

The intuition behind assuming such a modified totally realistic ordering source is as follows: We are interested in determining the strength of a circumstance at which the prejacent p is/is not instantiated. In order for it to be independent, any factor that bears on the truth or falsity of p (including whether p or $\neg p$) should be eliminated from the calculation of such strength. We will say that a world w_i is at least as strong as a world $w_{i'}$ with respect to p iff every proposition q in $g_r(p, w_0)$ that is true at $w_{i'}$, is also true at w_i .

$$(49) \quad \forall w_i, w_{i'} \in W : \\ w_i \leq_{g_r(p, w_0)} w_{i'} \iff \{q \mid q \in g_r(p, w_0) \wedge w_i \in q\} \supseteq \{q \mid q \in g_r(p, w_0) \wedge w_{i'} \in q\}$$

This effects a preorder on the set of possible worlds determined by the extent to which they verify the propositions in $g_r(p, w_0)$, i.e. it ranks worlds based on how similar they are to the actual world once the prejacent p and all its causal ancestors are factored out. Worlds that differ from the actual world only with respect to (a) whether p obtains or not and (b) what the precise causal ancestors of p are if it obtains, come out as equivalent in strength to the actual world under this ordering. Note that under this modified version of a totally realistic ordering source, no world w can be strictly stronger than the actual world w_0 , although there may be several worlds that are equivalent to w_0 .²²

Now, given this definition of the strength relation between circumstances of evaluation, we can check to see if it corresponds to the entailment-based understanding of strength. As we said before, a circumstance of evaluation i should be considered at least as strong as another circumstance of evaluation i' iff for any proposition p , $\llbracket p \rrbracket^i = 1 \rightarrow \llbracket p \rrbracket^{i'} = 1$. Remember that we are restricting our definition to stative propositions only. We can see that any (stative) proposition (a) that is true relative to an interval t_i , will be true relative to some subpart $t_{i'}$; (b) that is true relative to a location l_i , will be true relative some subpart $l_{i'}$; (c) that is

²²It is possible that a full treatment of the interaction between *ser* and *estar* requires consideration of stereotypical ordering sources as well. While *estar* is sensitive to the way the actual world is, *ser* is often used to describe what is considered normal or typical at the actual world. A stereotypical ordering source $g_s(w)$, orders worlds with respect to criteria for what is considered normal or likely at w . Notice that it is possible for the world of evaluation w to be an unlikely or abnormal one by its own criteria and therefore a stereotypical ordering source is not realistic. The stereotypical ordering source, $g_s(p, w_0)$, associates with every proposition p and world w the subset of those propositions that are both normal/likely with respect to the normality/typicality criteria in w_0 AND that are causally independent of p at w_0 . On such an ordering source, there will be worlds that are strictly stronger than w_0 , a possibility precluded by a totally realistic ordering source. But such an ordering source would not be compatible with an entailment-based notion of strength since propositions that are true at strictly stronger worlds would not be entailed to be true at weaker worlds, and critically, would not be entailed to be true at w_0 . However, such a non-entailment based strength ordering between worlds (and thereby circumstances) will probably turn out to be relevant in understanding the uses of *ser*.

true relative to a (possibly plural) agent a will be true relative to some subpart $a_{i'}$; (d) that is true relative to a contextual standard determined by \mathbf{d}_{c_i} will be true at some lower contextual standard determined by $\mathbf{d}_{c_{i'}}$. Finally, if a proposition q is true at a world w_i relative to $g_r(p, w_0)$ that is stronger than w_0 , then it is entailed to be true at w_0 .²³

Since we will be interested in particular parameters whose value determines the strength ranking between minimally different pairs of circumstances, we will be talking about parametrized strength (notated $i \succeq_p i'$). $i \succeq_p i'$ is intended to be read as: The circumstance of evaluation i is at least as strong as i' according to a strength relation construed along the parameter p .²⁴ The particular parameter along which circumstances are compared is taken to be determined in context. In both definitions and descriptions we will notate this contextually determined parameter p_c .

4.2 Lexical entries for *ser* and *estar*

A unified treatment for the meanings of *ser* and *estar* becomes quite simple once circumstances of evaluation have been deconstructed into their constituent parameters and we have the means to access a constrained set of alternative circumstances of evaluation from the discourse context and rank them according to their strength. Both *ser* and *estar* combine with a property denoting expression P and an individual denoting argument x and assert that the prejacent $P(x)$ is true at the circumstance of evaluation i .

The difference lies, as Clements and Maienborn have suggested, in the presuppositional component, whose substantive content and formal explication is what is at issue. Remember that Clements takes the presuppositional element to be the feature [+Nexus] (a connection of the subject referent with some location or prior state) while Maienborn takes it to convey the presence of a link between the state introduced by *estar* and a specific discourse situation. On our analysis, *estar* conveys that the prejacent (the content/proposition embedded under *estar*) is true in a bounded way, where **bounded truth** is defined in (50).

(50) A content/proposition of the form $P(x)$ that is true at circumstance $i \in Circ(c)$ is **boundedly true** at c iff:

- a. $\exists i' \in Circ(c) : i' \not\prec_{p_c} i \wedge P(x)(i') = 0$
- b. $\forall i'' \in Circ(c) : P(x)(i'') = 1 \rightarrow i \succeq_{p_c} i''$

(50-a) encodes the requirement that $Circ(c)$ contains some falsifying circumstance i' for $P(x)$ that is no weaker than i on the contextually determined parameter.²⁵ (50-b) encodes the condition that no circumstance in $Circ(c)$ that verifies $P(x)$ is strictly stronger than i with respect to the parameter p_c (which is

²³Notice that the entailment pattern does not hold across all pairs in the $\leq_{g_r(p, w_0)}$ relation. For any pair w, w' , if $w <_{g_r(p, w_0)} w'$ it will fail to be the case for all q that if it is true at w , it is entailed to be true at w' . While this lack of total correspondence between our notion of strength and the standard entailment-based notion of strength requires a closer investigation, the definition of the strength relation between worlds as we have formulated it, serves our purpose.

²⁴ $i \succ_p i'$ and $i \not\prec_p i'$ are to be read in the same way.

²⁵The reason that we specify the condition in terms of the “no-weaker-than ($\not\prec$)” relation for falsifying circumstances rather than the “at least as strong as (\succeq)” relation is in order to allow for the inclusion of pairs of circumstances that are not ordered with respect to each other in the pre-order. For instance, two circumstances that differ with respect to their temporal or spatial parameters s.t. the corresponding temporal intervals or spatial regions do not overlap, will be no weaker than each other. Similarly, if the value for the agent parameter for two circumstances is two distinct individuals, these circumstances would be no weaker than each other.

determined in the discourse context). The conditions in (50-a-b) together serve to identify those contexts of use in which (a) the speaker has determined the *relevant* parameter for determining the strength relation, (b) there is (shared) access to *relevant* falsifying member circumstances in $Circ(c)$ that are no weaker than i on that parameter, and (c) the speaker considers there to be no strictly stronger *relevant* verifying circumstance than i with respect to that parameter. In effect, the speaker conveys that i is the *maximal relevant verifying circumstance* for $P(x)$ in c . There is a reason for focusing on this relevance-based determination of boundedness. It is in order to remind ourselves that $Circ(c)$ is a set of alternatives built from only those sets of intervals, locations, worlds, agents, and delineations that are construed as being relevant to the interpretation of the unfolding discourse. Therefore, $Circ(c)$ itself will not contain circumstances that are “too strong” or “too weak” to be relevant. These “irrelevant” circumstances will be ones in which the value of the temporal or spatial parameter may be too large or too small, in which the delineations assign too high or too low a standard to be reasonable, or in which the value of the world parameter is too distant from the actual world.²⁶ Such circumstances, while they may be in principle weaker or stronger than the given circumstance of evaluation, they will not be in $Circ(c)$ and therefore will not be considered in the calculation of relative strength undertaken here.

We will call a context in which (50-a-b) are met a **Bounded Context** with respect to $P(x)$ and i and notate it as **Bound**($P(x), c, i$). In words, a context c is bounded with respect to a prejacent $P(x)$ and circumstance $i \in Circ(c)$ iff (a) there exist no-weaker circumstances $i' \in Circ(c)$ s.t. $P(x)$ is false at i' and (b) any circumstance $i'' \in Circ(c)$ s.t. $P(x)$ is true at i'' is not strictly stronger than i . Based on this notion of boundedness, we offer the following lexical entries. *estar* presupposes that the context in which it is used, c_0 , is bounded with respect to its prejacent while *ser* remains neutral in this regard.

$$(51) \quad \llbracket estar \rrbracket = \lambda P_{\langle s, et \rangle} \lambda x_{\langle s, e \rangle} \lambda i_s : \mathbf{Bound}(P(x), c_0, i). i \in Circ(c_0) \wedge P(x)(i) = 1$$

$$(52) \quad \llbracket ser \rrbracket = \lambda P_{\langle s, et \rangle} \lambda x_{\langle s, e \rangle} \lambda i_s. i \in Circ(c_0) \wedge P(x)(i) = 1$$

It should be made clear that the boundedness presupposition is a felicity condition on the use of *estar* rather than a proposition whose content is entailed to be in the Common Ground. This characterization of *estar*’s presupposition makes precise predictions about the contextual conditions that will license the use of *estar*. Rather than specifying a link to a specific discourse situation, the analysis requires *estar* to use informational resources from the context in a precise way – to construct a set of alternative circumstances of evaluation that are relevant to assessing the truth of the prejacent. The properties of this set ($Circ(c)$), i.e. whether it is heterogeneous w.r.t the prejacent (i.e. whether it contains falsifying circumstances that are no weaker than the circumstance of evaluation) and the relative strength of the minimally differing verifying circumstances it contains (i.e. whether the circumstance of evaluation is a maximal verifying circumstance given this set), determine whether the *estar* sentence is judged felicitous at a given context.

In the next section, §4.3, we describe the interaction of the proposed lexical meanings with information

²⁶To the extent that the ordering source for establishing a strength-ordering between worlds is a modified totally realistic one, worlds that differ from the actual world with respect to any proposition excluding the prejacent p and its causal ancestors would be strictly weaker than worlds that do not.

in the larger discourse context and show how the boundedness presupposition may give rise to some general effects having to do with scalar inferences associated with presuppositional variants. Then, in §5, we proceed to demonstrate how this treatment of the two copulas allows us to account for the range of their uses discussed in §2.

4.3 The interaction of lexical meanings with contextual information

On the lexical entries for *ser* and *estar* proposed above, the two copulas come out as presuppositional variants – i.e. they have identical truth-conditional content and differ only with respect to their presuppositional content. *estar*, which carries the boundedness presupposition, is the presuppositionally stronger variant. Given this relation between the copulas, we expect that the choice of one or the other copula in a given discourse context in combination with the lexical semantics of the prejacent, should give rise to certain pragmatic inferences. These inferences are derivable from standard Neo-Gricean assumptions about how the speaker may choose between multiple devices for expressing similar meanings in a linguistic system that contains them and how the listener may interpret such speaker choices.

Let us make the reasonable assumption that at each context of use, interlocutors have some expectations about how “strongly” a proposition $P(x)$ might hold. To clarify, this means that interlocutors, based on their lexical and world knowledge, have expectations about what might be the likely ballpark values for each parameter in the circumstance of evaluation i at which $P(x)$ is asserted to be true. This estimation depends partly on the meaning of the prejacent and partly on the larger background context. For instance, if someone utters a sentence such as *John is tired*, the estimated value for the temporal interval over which this proposition obtains may be rather small (a short interval). In contrast, if someone utters a sentence such as *John is intelligent*, the estimated value for the temporal interval over which this proposition obtains will be indefinitely large. The interpretation of such sentences will be guided by such assumptions about the possible values of particular parameters. The use of *estar* and *ser*, since it depends on speaker assumptions about the values of particular parameters at a given circumstance of evaluation, will interact with such assumptions. Specifically, *estar* presupposes that i is a maximal relevant verifying circumstance in $Circ(c)$ for the proposition relative to the parameter p_c (by which strength is determined). In particular contexts, this presupposition may coincide with or deviate from contextual expectations. The interaction between the lexically encoded presupposition of *estar* (as well as corresponding anti-presupposition associated with *ser*, see below) and contextual expectations give rise to certain types of inferences in context. We elaborate on the derivation of these inferences in brief below.

4.3.1 Contextual effects with *estar*

The expected value for the contextually relevant parameter p_c can be higher than, equal to, or lower than its value in the circumstance i at which $P(x)$ is asserted to be true.

- (53) a. If the expected value for p_c is greater than its value in i , then *estar*’s upper bounding presupposition will convey that the circumstance at which $P(x)$ is asserted to be true is weaker than what is expected in the context. This will be a quantity-based inference that arises in the

following way: The speaker’s use of *estar* conveys that i is a maximal verifying circumstance for $P(x)$. But the expected value for p_c is larger than its value at i . The hearer reasons that the speaker should have asserted that $P(x)$ may hold at stronger circumstances (by using *ser*) but they didn’t. This implies that they do not believe that $P(x)$ is assertable at a stronger circumstance. On further strengthening, this implies that they believe that $P(x)$ is NOT assertable at a stronger circumstance. This then implies that $P(x)$ does not hold at a stronger circumstance.

The uses of *estar* described in §2 include cases in which there is such a weakening effect. An example is that the use of *estar* with individual-level predicates often signals temporariness. Individual-level predicates are expected to hold of the subject referent over an indefinitely long interval. *estar* signals that the circumstance of evaluation i for the prejacent is a maximal verifying circumstance along the temporal parameter. This gives rise to the inference that the predicate does not hold of the subject referent at any super interval of the temporal interval associated with i . This is the temporariness effect. The use of *estar* to signal lowered contextual standards as described in §2.2.5 and to signal spatial restrictions on subject interpretation as discussed in (40) are also effects of the interaction between the upper bounding presupposition of *estar* and expectations in context.

- b. If the expected value for p_c is lesser than its value in i , then *estar* will have a scalar-additive type effect, conveying that the circumstance at which $P(x)$ is asserted to be true is *even* stronger than its expected value in context. The uses of *estar* that can be understood to involve such strengthening include its use to signal exceeded contextual expectations in §2.2.4, and to signal unexpected change.
- c. If there is no significant difference between the expected value for the relevant parameter p_c (relative to which strength is determined) and the value in i , then the use of *estar* will have no additional interpretive effect beyond conveying that $P(x)$ is true at the context. These are the neutral readings of *estar* with stage-level adjectives and locative predicates.

4.3.2 Contextual effects with *ser*

We observe that *ser* is restricted to those contexts of use in which the upper bounding presupposition of *estar* is not satisfied. Moreover, the use of *ser*, the presuppositionally weaker variant, often gives rise to the implication that the circumstance at which $P(x)$ is asserted to be true *cannot* be a maximal verifying circumstance. This implication belongs to the class of inferences which arise because of the ordering of lexical items on a scale with regard to their presuppositional strength. Associated with the item that is presuppositionally weaker, they have been labeled “antipresuppositions” (Percus 2006) or “implicated presuppositions” (Sauerland 2008). The crucial property of such inferences is that they are not inherent in the lexical entry of the presuppositionally weaker variant, but instead they can be derived in a fashion that is similar to the way that scalar implicatures are drawn by hearers that reason about speaker choices among possible devices.

In the case of *ser*, the anti-presupposition or implicated presupposition would be the negation of the boundedness presupposition associated with *estar*. The use of *ser* would be felicitous iff (a) it is the case that all no-weaker and strictly stronger circumstances than *i* are verifying circumstances for the prejacent; and, (b) it is the case that not all verifying circumstances in $Circ(c)$ (relative to some parameter p_c) are weaker than *i*. Formally:

- (54) a. $\neg \exists i' \in Circ(c) : i' \not\prec_{p_c} i \wedge \llbracket P(x) \rrbracket^{i'} = 0$
b. $\neg \forall i'' \in Circ(c) : \llbracket P(x) \rrbracket^{i''} = 1 \rightarrow i \succeq_{p_c} i''$

This basically means that the use of *ser* signals that *i* is *not* a maximal verifying circumstance in $Circ(c)$ for the prejacent; $Circ(c)$ must contain other strictly stronger verifying circumstances and, in fact *all* no-weaker and strictly stronger circumstances in $Circ(c)$ must be verifying circumstances. In particular contexts, this anti-presupposition may coincide with or deviate from contextual expectations. Depending on how these contextual expectations about values for the contextually relevant parameter p_c relate to the value of that parameter in *i*, the following specific inferences arise.

- (55) a. If it is expected that the value for p_c is greater than its value in *i*, then the use of *ser* will have no additional effect. It will convey what is consistent with its anti-presupposition – that the prejacent $P(x)$ holds at *i* as well as at all no-weaker and strictly stronger circumstances in $Circ(c)$. These are the neutral readings of *ser* obtained with individual-level adjectives and predicate nominals. In each of these cases, there is no upper bound on the circumstances at which the predicate is expected to apply to the subject-referent. Since such properties are expected to hold of the subject referent across circumstances (times, worlds, locations), the copula of choice is the one that is neutral with respect to the strength of the circumstance at which the prejacent holds – *ser*.
- b. If there is no strong expectation that the value for p_c be greater than its value in *i*, then the use of *ser* will have two sorts of effect:
- (i) For adjective predicates, the combination with *ser* will lead to an interpretation of the associated property as being one that is compatible with *ser*'s anti-presuppositions – that is, a property which is not construed as being bound to a maximal circumstance. For instance, as described in §2.1.2, adjectives like *sucio* ‘dirty’ (10) or *incapaz* ‘incapable’ (12) describe qualitatively different properties when combined with *ser* vs. *estar*. When combined with *estar*, *sucio* denotes the property of being physically dirty while in combination with *ser* it denotes the property of being mentally dirty (perverted) or corrupt. In these cases, the use of *ser* accesses an available meaning of the lexical predicate that is compatible with the inferences associated with the copula.
 - (ii) In other cases, the use of *ser* may affect the interpretation of the subject nominal, favoring an intensional or kind-referring interpretation in contrast to an extensional entity-

denoting interpretation available with *estar*. For instance, in (14) and (15), we see that the use of *ser* does not affect the meaning of the adjectives *duro* ‘hard’ and *caluroso* ‘hot’ but correlates with kind-referring interpretations of the subject nominals *el acero* ‘steel’ and *el verano* ‘summer’.

4.4 Summary

The analysis presented above treats *ser* and *estar* as presuppositional variants. The content of *estar*’s boundedness presupposition pertains to the strength of the circumstance at which it is asserted to be true while *ser* is neutral in this regard. The presuppositionally marked vs. neutral lexical semantics for the two copulas interacts with the lexical semantics of the prejacent and expectations of interlocutors in specific contexts. The scalar inferences that arise out of these interactions, both in the case of *estar* and *ser*, are responsible for the different effects associated with the uses of the two copulas. Having briefly described the structure of these interactions, in the next section we explicate their precise working for each of the cases in question.

5 Application

5.1 Estar

5.1.1 *estar* with locative predicates

We noted in §2.1.1 that *estar* is virtually obligatory in copular clauses that contain locative predicates, such as the ones below (repeated from (4)):

- (56) a. *Pedro está en la cocina.*
 Pedro estar.PRES.3.SG in the kitchen.
 Pedro is in the kitchen.
- b. *Chile está en Sudamérica.*
 Chile estar.PRES.3.SG in South America
 Chile is in South America. (Roldán 1974)
- c. *El restaurante Etíope está cerca de la biblioteca.*
 The restaurant Ethiopian estar.PRES.3SG near of the library
 The Ethiopian restaurant is near the library.

Our explanation of this constraint starts with the reasonable assumption that the spatial locations of entities and the configurations between them and other entities are often happenstance in nature. In some cases, such configurations may have a degree of permanence (as in the case of buildings or monuments), but in many cases involving self-propelled or propellable entities, they are temporary and obtain only incidentally.

Consider a sentence like (56-a), for which it is commonly known that the subject referent is a self-propelled or propellable entity. Let the question in the context be about the location of the entity at a given reference time within a pre-established spatial region in the actual world w_0 . In such a case, all elements of $Circ(c)$ are expected to be identical with respect to the time and location parameters. The only parameter that can be taken to vary between circumstances is the world parameter.²⁷

The question in the context pertains to where Pedro is in the actual world w_0 . Suppose that the world parameter w_i of i , the circumstance of which (56-a) is asserted, is w_0 . This guarantees that there will be falsifying circumstances for p in $Circ(c)$ that are no weaker than i . These are circumstances i' , containing worlds $w_{i'}$ that are exactly like w_0 with respect to all propositions in $g_r(p, w_0)$, i.e. with respect to all propositions except for the prejacent p (= *Pedro be in the kitchen*) and its causal ancestors. Such worlds $w_{i'}$ are guaranteed to be in the Common Ground and therefore included in the determination of $Circ(c)$. Turning to the second condition defining a bounded context: the use of *estar* at a context c_0 and circumstance i with world w_i (and the world parameter being contextually relevant), is felicitous if $Circ(c)$ contains no strictly stronger relevant verifying circumstance than i with respect to the world parameter. This condition is met because w_i is the actual world w_0 and given the ordering source $g_r(p, w_0)$, there can be no strictly stronger world than the actual world.

(56-b), which describes the permanent geographical position of an immoveable entity, is exactly parallel. The observation is that *estar* is quasi-obligatory in such cases as well despite the non-temporary nature of the locative relation involved. However, the non-temporary nature of the relation is irrelevant on our analysis since what counts is whether there are no-weaker falsifying circumstances than i for the prejacent in $Circ(c)$ and whether it is the case that there is no strictly stronger verifying circumstance in $Circ(c)$ for the prejacent than i . Such circumstances i' will be exactly like i except for the world parameter – containing worlds $w_{i'}$ that are exactly like w_0 with respect to all propositions in $g_r(p, w_0)$, i.e. with respect to all propositions except for p (= *Chile be in South America*) and its causal ancestors. Such worlds $w_{i'}$ are guaranteed to be in the Common Ground and therefore included in the determination of $Circ(c)$. by the question *Where is Chile?*. The second condition is met, as before, if the world of i , w_i , is the actual world w_0 , since there is no strictly stronger world than w_0 on the ordering source $g_r(p, w_0)$.

In other cases, the use of *estar* can convey that the current location of an entity is the result of some change or is subject to future change. That is, *estar* can indicate that the described situation is temporally delimited. An example is given in (57).

- (57) a. **Context:** Jupiter was in the Leo constellation last month.
 b. *Ahora, Júpiter está en Virgo.*
 Now Jupiter estar.PRES.3.SG in Virgo
 Now, Jupiter is in Virgo.

On our analysis, the “temporariness” interpretations with locative predicates obtain in contexts in which the strength ranking is based on the time parameter. The use of *estar* requires that there be other circumstances of evaluation i' no weaker than i at which the prejacent “Be-in-Virgo(Jupiter)” is false. These are circumstances

²⁷Since neither subjectivity nor gradability is involved, the other two parameters are contextually irrelevant and not expected to vary.

that differ from i only along the temporal parameter. Two circumstances whose temporal parameter is filled by two non-overlapping temporal intervals and which are identical otherwise, are no weaker than each other. So, as long as there are non-overlapping possible reference times that enter into the determination of $Circ(c)$, and the prejacent is false at one of these, the first condition is met.²⁸ The second condition – there is no strictly stronger verifying circumstance for the prejacent than i on the time parameter – is also met if we assume that the speaker’s claim is restricted to the maximal interval at which the prejacent can be asserted based on observation without extrapolating from that interval of observation to any larger temporal intervals. This means that the value of the temporal parameter of i is the maximal interval over which the prejacent is observed to obtain.²⁹ On this assumption, the context is bounded w.r.t the prejacent, licensing the use of *estar*.

5.1.2 *estar* with adjectives

Alternatives that vary along the time parameter: “stage-level” adjectives

The preferential use of *estar* with adjectives that describe attributes that speakers normally expect to fluctuate or to hold temporarily of an individual (e.g. *cansado* ‘tired’; *hambriento* ‘hungry’; *furioso* ‘furious’) comes out naturally on this analysis. We assume that those predicates lexically encode the information that such properties hold of individuals over limited temporal durations. Accordingly, any context in which a copular clause containing such an adjective is used, must be a heterogeneous context – i.e. it contains both verifying and falsifying circumstances of evaluation differing only on the time parameter. This is because at any context of use, possible values for the time parameter (possible reference intervals) may include (possibly non-overlapping) intervals of both short and much longer duration. The first condition is thus satisfied – there are circumstances i' that are no weaker than i (the circumstance at which the prejacent is asserted to be true), that falsify the prejacent. The second condition, that there is no relevant strictly stronger circumstance on the time parameter in $Circ(c)$ than i that also verifies the prejacent, is met if we assume (like with locative predicates) that the time parameter of i is taken to be t_0 – a short interval corresponding to the time of utterance at which the prejacent is observed to obtain.³⁰ This is plausible if we assume that in *estar* claims, speakers restrict their assertion to the maximal interval of observation without extrapolating from the observation to larger temporal intervals.

The context being bounded w.r.t the prejacent and i , *estar* is the favored copula. In this case, there is no additional inference that the property holds “only” temporarily of the entity since our lexical knowledge of stage-level adjectives does not lead us to expect that such properties hold of an entity indefinitely in time. Thus there is no difference between the expected value for the relevant parameter p_c (in this case, time) and the value in i , yielding a neutral reading of *estar* as described in (53-c).

Alternatives that vary along the time parameter: temporariness effects with individual-level adjectives

²⁸ Any i' in $Circ(c)$ where the temporal parameter is valued to the utterance time would be such a falsifying circumstance.

²⁹ Such an interval may overlap with the time of utterance or precede it.

³⁰ This will be the case only for present tense *estar* sentences, of course.

As has been noted, in many cases, the use of *estar* with individual-level adjectives (which typically occur with *ser*) hinges on the construal of the temporal extent of the denoted property's occurrence in an entity. Acceptable contexts for *estar* with individual-level adjectives are typically those in which the observed property, e.g. discreetness or skinniness, is taken to be the result of some change (or is otherwise variable) over time, as in the repeated examples (58) and (59).³¹

- (58) **Context:** Pedro went on a diet for six months. I just saw him yesterday:
 El está delgado.
 He estar.PRES.3.SG skinny
 He is skinny [now].
- (59) *Enzo es bastante chismoso, pero ayer estuvo discreto.*
 Enzo ser.PRES.3.SG quite gossipy but yesterday estar.PAST.3.SG discreet
 Enzo is quite gossipy but yesterday he was discreet. (Maienborn 2005: 159)

On the analysis presented here, the felicitous use of *estar* depends on whether the context *c* can be construed as bounded w.r.t the prejacent and the circumstance *i*, i.e. whether there are no-weaker falsifying circumstances for the prejacent in *Circ(c)* than *i*. A discourse in which the speaker describes some change in an entity over time is one in which the temporal parameter of the circumstance is contextually relevant. Relevant intervals would include those that precede, include, and follow the change event. For instance, a context in which (58) is used is one in which *Circ(c)* would contain circumstances that differ with respect to the time parameter and include intervals preceding as well as intervals containing the change event. Suppose that the time parameter of *i*, the circumstance of which (58) is asserted, is t_0 – a short interval corresponding to the time of utterance. Since *Circ(c)* would contain circumstances *i'* with temporal intervals that precede the change event or include the change event, these would classify as falsifying circumstances that are no weaker than *i* on the contextually given (time) parameter.

The second condition, that there is no relevant strictly stronger verifying circumstance for the prejacent than *i* in *Circ(c)* is met if the time parameter of *i* is taken to be t_0 – a short interval corresponding to the time of utterance. As before, this condition is met if we assume that in *estar* claims, speakers restrict their assertion to the maximal interval of observation without extrapolating from the observation to making claims about larger temporal intervals.

In the case of individual-level adjectives, there is a dissonance between assumptions coming from our lexical knowledge (whereby we typically understand properties denoted by such adjectives to obtain in an entity indefinitely in time) and the use of *estar*, which restricts the property attribution to the interval of observation. This is one specific variety of the upper bounding effect as described in (53-a) where the expected value for the contextual parameter (in this case, time) is greater than its value in *i*. It is this clash with expectations that leads to the use of *estar* generating the reading that the property obtains only temporarily in the subject referent.

Alternatives that vary along the world parameter: Novelty/unexpectedness uses

³¹Speakers of Iberian Spanish, while accepting both sentences in their respective contexts, sense some decreased acceptability with (59).

In this class of cases, by using *estar*, the speaker comments on the unexpected existence of some property in the subject-referent in contrast to commenting on the degree to which it obtains (as in (62-b) and (63-b) for instance). We repeat the relevant examples from §2.2.2 in (60) and (61):

- (60) a. **Context:** I go to a friend's place for the first time. My friend is very hip and modern and I notice that the decoration in her place is very old-fashioned. I say:
 b. *¡La decoración es/está anticuada!*
 The decor ser/estar.PRES.3.SG old-fashioned!
 The decor is old-fashioned!
- (61) a. **Context:** Louisa rents an expensive farmhouse on Airbnb for a weekend and when she gets into the house, she realizes that the house is a badly maintained place from the 19th century:
 b. *¡La casa es/está vieja!*
 The house ser/estar.PRES.3.SG old!
 The house is old!

Such uses of *estar* come out as perfectly natural on our analysis. In each case, given the information state, the discourse context is biased towards the falsity of the prejacent. That is, the speaker expects the decor to be hip and modern or the house to be updated and well-maintained for the price. The relevant parameter for these cases is the world parameter. Again, let the world parameter w of i , the circumstance at which the prejacent is asserted to be true, be w_0 – the actual world. The discourse context guarantees that there are falsifying circumstances i' for the prejacent in $Circ(c)$, which contain $w_{i'}$, which are no-weaker than w_0 , i.e. worlds exactly like the real world except with respect to p and its causal ancestors. The second condition defining a bounded context is met because w_i is the actual world w_0 and given the ordering source $g_r(p, w_0)$, there can be no strictly stronger world than the actual world.

Alternatives that vary along the delineation parameter: Exceeded contextual expectations

Closely related to the “novelty” uses of *estar* are uses with gradable adjectives that give rise to an understanding that the extent of occurrence of some property in the subject referent is unexpectedly high given the context. Some examples from §2.2.4:

- (62) a. **Context:** There is an exhibit of blown-up photographs of three snowflakes at the Science Museum. A visitor examines them in order, and at each one, says:
 b. *Este copo de nieve es interesante, este es común, pero ESTE, este está extraordinario.*
 This snowflake ser.PRES.3.SG interesting, this be.PRES.3.SG okay but this, this be.PRES.3.SG extraordinary.MAS
 This snowflake is interesting, this one is okay, but THIS ONE, this one is extraordinary.
- (63) a. **Context:** A baker is critiquing the tiramisú just baked by her assistant, which did not turn out as it was supposed to.

- b. *La capa del tiramisú está muy gruesa.*
 the layer of the tiramisu estar.PRES.3.SG very thick
 The layer of the tiramisu is too thick.

On the analysis developed here, this reading obtains when the contextually relevant parameter is the delineation parameter, the parameter for the function that maps all gradable predicates P_g to the degree that constitutes the contextual standard for P_g in c . Let us assume that for any given discourse context c , there will be a set of delineation functions compatible with c that are relevant to establishing the truth of propositions containing gradable predicates at c . These delineation functions will be within a reasonable range and not assign “too low” or “too high” contextual standards to the gradable predicates in their domain. Any circumstance in $Circ(c)$ will contain some element of this set of contextually compatible functions.

Lewis (1979: 352) notes that standards of precision (or contextual standards more generally), vary from conversation to conversation and are somewhat vague. But accommodation that involves the lowering and raising of standards is asymmetrical. That is, language users are much more likely to allow the accommodative raising of contextual standards than its lowering. In our system, we take this observed asymmetry in ease of accommodation to mean that the set of delineation functions relevant to determining $Circ(c)$ *always* includes members that assign extremely high contextual standards, so that the truth of propositions (built on gradable predicates) can be determined relative to increasing levels of precision and strength. In other words, anything that leads to increased precision in interpretation is always relevant. This will mean that, in much of ordinary discourse, there will always be a circumstance $i' \in Circ(c)$ whose delineation function $\mathbf{d}_{c_{i'}}$ assigns too high a standard for a proposition built on a gradable predicate to come out true.

Now the felicitous use of *estar* depends on whether there are falsifying circumstances i' , no weaker than i (at which the prejacent is asserted to be true) with respect to the delineation parameter and whether i can be assumed to be the strongest verifying circumstance in $Circ(c)$. The first condition on boundedness is met because we require $Circ(c)$ to contain circumstances i' whose delineation function $\mathbf{d}_{c_{i'}}$ assigns very high contextual standards. Such falsifying circumstances will be strictly stronger than i .

In asserting that the prejacent holds at circumstance i using *estar*, where the relevant parameter is the delineation parameter \mathbf{d}_c , the speaker is understood to convey that the gradable property holds of the subject referent to a very high extent – in fact, to an extent that exceeds expectations in the context. This effect comes about because the second boundedness condition is met – i (the circumstance at which the prejacent is asserted to be true) is the strongest relevant verifying circumstance in $Circ(i)$. Using *estar* in a context in which the expected value for \mathbf{d}_{c_i} is lesser than its value in i , the speaker signals that the prejacent is true at a circumstance that is *even* stronger than what is contextually expected; i.e. it holds at higher contextual standards than expected. This is an instance of what we call the scalar additive effect: the prejacent is true *even* when stronger relevant circumstances in $Circ(c)$ are considered.³²

There remains no puzzle regarding the lack of temporariness of the property’s occurrence in the subject

³²Speakers often note that the use of *estar* with individual-level adjectives improves with the use of degree modifiers like *muy* in this class of cases. It appears that the use of adjectives that are restricted to the upper end of the evaluative scale (e.g. *extraordinario*) or degree modifiers that raise the contextual standard (e.g. *muy*) further enhances the effect of exceeded contextual expectations. The speaker, by using *estar* in conjunction with expressions effecting raised standards, conveys that the range of values that are relevant are *even* higher than those associated with the strongest verifying circumstance i by itself.

denotation in such cases since the *estar* statement (on our analysis) makes no claim regarding the *temporal* extent of the property, only about the *degree* to which it obtains.

Alternatives that vary along the delineation parameter: Relational uses with gradable predicates

§2.2.3 introduced what was labeled as *relational uses* of gradable adjectives. We defined these as uses in which the property denoted by the adjective is interpreted as obtaining in the nominal denotation to a degree that depends on a relation between the nominal denotation and some other entity salient in the discourse context. In Spanish, it is seen that *estar* occurs with such uses of adjectives as seen in examples repeated from §2.2.3.

- (64) a. **Context:** Lucía bought a beautiful jacket through Amazon, but it does not fit her, so she needs to return it.
 b. *La chaqueta le está ajustada en los hombros.*
 The jacket CL-IO estar.PRES.3.SG tight.FEM on the shoulder.PL
 The jacket is tight on the shoulders (for Lucía).
- (65) a. **Context:** I have a low shower opening for which I am trying to find a shower curtain. I go and buy the shortest shower curtain I can find, believing that it will fit. Once home, I check the fit and find that the curtain is too big for my opening.
 b. *la cortina está larga*
 the curtain estar.PRES.3.SG large
 The curtain is long (for the opening).

These cases are technically identical to the previous class of cases where exceeded contextual expectations are signaled by *estar*. The difference between the two lies in the basis for computing the contextual standard. In examples like (62-b), the contextual standard for a gradable predicate is understood to be computed from a comparison class, or a larger set of similar entities. In relational uses, the contextual standard is directly dependent on properties of the larger discourse context (the size of the shower opening or Lucía's body) and the speaker conveys that the extent to which the property obtains in the subject referent is too high relative to this discourse-based standard.

Here is how such cases work: $Circ(c)$ will contain circumstances whose delineation functions \mathbf{d}_c will assign some contextual standard degree to *ajustada* 'tight' and *larga* 'long' determined by Lucía's size and the size of the shower curtain respectively. As assumed in the previous section, there will always be a strictly stronger circumstance $i' \in Circ(c)$ whose delineation function $\mathbf{d}_{c_{i'}}$ assigns too high a standard for a proposition built on a gradable predicate to come out true. The first condition on boundedness – the existence in $Circ(c)$ of no-weaker falsifying circumstances on the contextually relevant parameter – is thus met.

The second condition, that the prejacent be asserted at the strongest verifying circumstance, is also met. The goals/desires of the speaker in the contexts given above are incompatible with the prejacent. That is, the speaker wants the jacket to fit well (i.e. to not be tight) and the curtain to be the right size (i.e. to not

be long). The speaker naturally considers the strongest relevant circumstances (those which contain delineation functions that assign the highest contextual standards to gradable predicates) in *Circ(c)* in order to determine if the prejacent can be rendered false.³³ The use of *estar* in attributing tightness and length to the relevant entities conveys that the prejacent is true *despite* being asserted at the delineationally strongest circumstance in *Circ(c)*. This is another specific effect subsumed under the general scalar-additive type effect described in (53-b) where the expected value for the delineation parameter is lower than its value at the circumstance at which the prejacent’s truth is asserted.

Alternatives that vary along the delineation parameter: Changed contextual standards

§2.2.5 introduced another use of *estar* in which the property denoted by the adjective is interpreted as obtaining in the nominal denotation to a sufficiently high degree only when the contextual standard is “recomputed” to a lower degree on the basis of an alternative comparison class.³⁴ In such a use, like the relational cases analyzed above, the choice of delineation function depends on properties of the larger situation.

- (66) a. **Context:** Juan lives in New York and is used to seeing really tall skyscrapers. He visits New Haven, where the buildings are not as tall. He points to building after building to determine what counts as tall for Juan. For one building that is taller than the others, but not as tall as a New York skyscraper, John reluctantly concedes:
- b. *OK, ese edificio está alto.*
 OK, that building *estar.PRES.3.SG* tall
 OK, that building is tall.

The analysis accounts for such uses of *estar* by letting the contextually relevant parameter be the delineation parameter. The context *c* for (66) is such that the set of delineation functions compatible with *c* do not allow the extension of *alto* to contain the buildings in Segovia. That is, even the delineationally weakest circumstance in *Circ(c)* fails to make (66) true. So the buildings in Segovia do not count as tall – unless the set of delineation functions is altered to admit those assigning lowered contextual standards. Once this is done (Juan’s concession), the use of *estar* signals that *Circ(c)* contains no-weaker falsifying circumstances (these are stronger circumstances which differ on the delineation function parameter) and that the circumstance at which the prejacent holds is the strongest verifying circumstance – i.e. the prejacent would come out false on all other delineationally stronger circumstances. This effect is a specific case of the general upper bounding effect described in (53-a) where the contextually expected value for the delineational function parameter is greater than its value in the circumstance at which the prejacent is asserted to be true.

Alternatives that vary along the agent parameter: evaluative subjective predicates

Although this class of cases may show overlap with some other uses that we have analyzed above – specifically, the “novelty” and “exceeded contextual expectations” readings associated with *estar*, they are techni-

³³In practical terms, satisfactorily establishing the falsity of the prejacent would mean that the speaker is able to use the jacket and the curtain for the purpose they were intended.

³⁴Note that these uses are not considered to be entirely acceptable by speakers of Iberian Spanish. They are much more felicitous for speakers of Latin American varieties.

cally different. The examples we select to describe this use and its analysis contain predicates of personal taste such as *delicious* ‘delicious’, *entretenida* ‘entertaining’, and *precioso* ‘precious’.

- (67) *A nadie en mi familia le gustan las ensaimadas, pero yo creo que están deliciosas.*
 to nobody in my family CL.IO like.PRES.3.PL the ensaimadas, but I think they
 estar.PRES.3.PL delicious.
 Nobody in my family likes ensaimadas but I think they are delicious.
- (68) *Esta película está entretenida, pero mis amigos no piensan lo mismo.*
 That movie estar.PRES.3.SG entertaining but my friend NEG think.PRES.3.PL CL.DO same
 That movie is entertaining (according to me), but my friends do not think so.
- (69) *A la mayoría de la gente no le gustan las serpientes, pero yo creo que están preciosas.*
 To the most of the people NEG CL.IO like.PRES.3.PL the snakes but I think.PRES.1.SG
 that estar.PRES.3.PL beautiful
 Most people find snakes unpleasant, but for me, they are beautiful.

Clements (2008) also offers an example of *estar* being used to describe a subjective sensorial experience. According to him, *estar* is contextually licensed in this case because it describes the speaker’s experience-based assessment of the taste of the mandarins and subjective evaluation that the taste is most delicious.

- (70) a. **Context:** I have just come back from the market.
 b. *¡He comprado unas mandarinas que están riquísimas!*
 have.SING.1. buy.PAST.1.SG some mandarins that estar.PRES.3.PL delicious
 I have just bought some mandarins that are delicious. (CREA: Clements 2006:188)

These and similar examples show that the use of *estar* has an evaluative subjective effect, i.e. it conveys that the extension of the predicate at a circumstance of evaluation is dependent on speaker opinion rather than deriving from objective facts. In fact, speakers report a clear felt difference between the two copulas in such cases. The use of *ser* tends to convey that the entity is judged to have the relevant property in general while the use of *estar* restricts the judgement to the speaker in contrast with other individuals, as in (67), (68), and (69).

To handle such cases, we let the contextually relevant parameter be the agent parameter. Let the value for the agent parameter at the circumstance *i* at which the prejacent is asserted be the speaker of the context. For *estar* to be felicitous at *i*, there should be a no-weaker falsifying circumstance *i'* for the prejacent in *Circ(c)*. This role can be filled by any circumstance identical to *i* w.r.t all parameters other than the agent parameter, whose value could be a plural individual containing the speaker or any atomic individual disjoint from the speaker. In the examples above, the possible values for such plural individuals would be some subset of the speaker’s family members, friends, or people in general. The prejacent is expected to register false at some such stronger circumstance *i'*, satisfying the first condition. The second condition (that *i* is a maximal verifying circumstance) is satisfied if we assume that the speaker restricts the assertion to their own experience without extrapolating from the observation to any larger set of experiencers. This is essentially

Alternatives that vary along the location parameter: Spatially bounded readings

(71) **Context:** A journalist is reporting on the Pan-American highway and she is now near Lima.

The road estar.PRES.3.SG wide

Our analysis is designed to handle such cases. Let the contextually relevant parameter be the location parameter. For *estar* to be felicitous, *Circ(c)* must contain a falsifying circumstance i' that is not weaker on the location parameter than the circumstance of evaluation i . This would hold if the value for the location parameter for some i' is a part of the Pan Americana that is not wide and that does not overlap with the location of i (the other parameters remaining identical).³⁵ The other condition, that there be no strictly stronger verifying circumstance i'' than i on the location parameter, is met if we assume that in *estar* claims, speakers restrict their assertion to the maximal region of observation without extrapolating from the observation to make claims about larger spatial regions.

This section demonstrated how the analysis of §4 applies to a range of cases in which *estar* appears. It was shown that contexts could be construed as bounded along distinct parameters and that in interaction with contextual expectations, the boundedness of a context can give rise to both upper-bounding and scalar-additive like readings, in addition to neutral readings for clauses containing either copula. Specific instances of such effects were explored, primarily in the class of gradable individual-level adjective predicates, but also elsewhere. In the following section, we show how our analysis is able to handle the range of uses of *ser* with nominal, adjective, and locative predicates. Since nominal predicates predominantly appear with *ser*, we have chosen to also discuss the relatively marginal use of *estar* with nominal predicates in the context of that discussion.

40

5.2 Ser

5.2.1 *ser* (and *estar*) with nominal predicates

A central puzzle in the Spanish copula distribution has to do with why *ser* is virtually obligatory with nominal predicates (as in examples repeated in (72)). Although the property of being an architect or a cobbler is not entirely permanent (i.e. it may not hold of an entity throughout their life), the preferred copula is *ser*.

- (72) a. *Julia es/*está arquitecta.*
 Julia ser/estar.PRES.3.SG architect.FEM
 ‘Julia is an architect.’
- b. *Soy/*estoy zapatero.*
 ser/estar.PRES.1.SG cobbler.MASC
 ‘(I) am a cobbler.’

We find that *estar* is sometimes (but not necessarily) used with nominal predicates if the property denoted by the nominal is understood to hold very temporarily or in a non-intrinsic way of the subject referent. In such cases, *estar* cannot directly combine with a nominal predicate (an NP or DP) and requires it to be turned to a prepositional phrase (a PP headed by *de*).³⁶

- (73) a. **Context:** Julia majored in Biology with honors, but due to the economic crisis, she has been unable to find a job as a biologist. I ask a friend about what she is doing these days. My friend says:
- b. *Me han dicho que está de camarera en un restaurante en Madrid.*
 CL-IO have.PRES.3.PL told that estar.PRES.3.SG of a waitress.FEM in a restaurant in Madrid.
 I have been told she is waitressing in a restaurant in Madrid.
- (74) a. **Context:** Rocio wants Laura to go to the movies with her tomorrow, but Laura needs to take care of the neighbors three-year old child, Laura says:
- b. *No puedo ir al cine, estoy de niñera toda la noche.*
 NEG can.PRES.1.SG go.INF to the movies estar.PRES.1.SG of babysitter all the night
 I cannot go to the movies, I am **babysitting/ working as** a babysitter the whole night.

We suggest that the source of this pattern of distribution lies in the contrast between the sort of meanings encoded by nominal vs. adjectival expressions. Specifically, we propose that the function of nominal and adjectival expressions in predicative position are distinct: the attribution of a nominal property N to an entity *x* is an instance of classification while the attribution of an adjectival property A to an entity *x* is an instance of description. To elaborate, although the extensions of nominal expressions may change depending on the world and time of evaluation, the criteria by which an entity *x* “counts” as being an N remain unchanged.

³⁶Explaining this syntactic restriction is beyond the scope of this paper.

The membership criteria for adjectival expressions, on the other hand, i.e. the basis on which an entity x “counts” as having adjectival property A , vary from context to context. This entails that for any entity x that has nominal property N , if x does not undergo any change, then x should retain N across circumstances. However, this is not guaranteed for adjectival properties A . Whether x has A across circumstances depends, in several cases, also on the circumstances and not only on x . Once we recognize this distinction between nominal and adjectival predicates, the preference for *ser* with nominal predicates becomes partly tractable.

The reason for the observed copular pattern is that the relevant parameters in assessing the truth of a sentence containing a nominal predicate like *architect* or *cobbler* may only be the time, location, and world parameters.³⁷ The question then is, is it possible for there to be a bounded context, i.e. a context that satisfies the conditions in (50), in which a speaker may utter a sentence containing a nominal predicate? In most contexts, individuals are said to be assigned to some class denoted by a nominal predicate because there is an expectation that they retain that classification over long stretches of time and certainly over arbitrarily large locations. After all, in order to determine whether an individual belongs to some class, they must exhibit supporting evidence for this across several distinct times and locations. This means that the classification cannot be supported if the speaker restricts their assertion only to the circumstance of observation.

There are three possible parameters along which a bounded context may be determined – the time, the location, or the world parameter. Consider (72-a) and let the relevant parameter be the time parameter. This will be any context in which the question under discussion concerns Pedro’s current occupation. In such a case, $Circ(c)$ will contain circumstances that are no weaker than i that differ only along the time parameter. these will be circumstances i' identical to i except for containing either intervals $t_{i'}$ that are disjoint with t_i or intervals $t_{i''}$ that are superintervals of t_i . For the first condition (50-a) of a bounded context to be satisfied, there must be a no-weaker falsifying circumstance on the time parameter in $Circ(c)$. This could be some i' containing an interval $t_{i'}$ that is prior to Pedro becoming an architect, which would be disjoint from t_i of i .

(50-b), the second condition on bounded contexts, requires i to be a maximal verifying circumstance for the prejacent in $Circ(c)$. This condition clashes with the assumption that classification (unlike evidence-based description) requires the prejacent to be true at multiple distinct circumstances of evaluation, beyond the circumstance at which the prejacent is observed to hold. Here is how the interaction works: Since *estar* conveys that i is a maximal verifying circumstance, its use signals that the speaker does not believe there to be a strictly stronger circumstance than $i \in Circ(c)$ at which the prejacent can be asserted to be true. This means that (as far as the speaker is concerned) there is no $i'' \in Circ(c)$ such that $t_{i''} \supset t_i$ (with all other parameters having identical values) and the prejacent is true at i'' .

But it is necessary that at least some no-weaker and possibly strictly stronger circumstance besides i in $Circ(c)$ be a verifying circumstance. This follows from the assumption that classification (unlike evidence-based description) requires the prejacent to be true at multiple distinct circumstances of evaluation. But the *estar* claim does not entail the presence of a no-weaker verifying circumstance besides i while a *ser*

³⁷Delineation function and agent parameters will be irrelevant in the case of nominal predicates – any differential value for these parameters will not make a difference to assessing the truth of copular sentences containing nominal predicates. This is because nominal expressions (like *baker*, *waiter*, *cobbler*) are typically not interpreted along a scale of values, neither is their extension dependent on subjective evaluations of agents.

claim (given *ser*'s anti-presuppositions) does. Thus, if it is necessary that there are no-weaker verifying circumstances besides i in $Circ(c)$, then the copula of choice should be *ser* and not *estar*.

Thus it is that *estar* is generally deemed unacceptable with nominal predicates. For the limited class of cases in which *estar* appears with nominal predicates realized by prepositional phrases (as in (73-b) and (74-b)), our explanation is simple. In these cases, prepositional phrases like *está de camarero* and *está de panadero* do not serve to classify entities but rather to describe entities. The predicates *de camarero* and *de panadero*, unlike their nominal counterparts *camarero* and *panadero*, have context-sensitive extensions, since what it means to be “as a baker” or “as a waiter” is determined at the circumstance of evaluation. Since the speaker is not committed to a classification of the entity (which requires the prejacent to be true at multiple no-weaker circumstances of evaluation), the speaker can restrict their assertion to the interval of observation, making *estar* the appropriate copula to use.

5.2.2 *ser* with locative predicates

As we noted in §2.1.1, *ser* is not entirely unavailable with locative predicates. Our analysis predicts that locative predicates should not be entirely banned with *ser* (since there is no syntactic restriction), but be able to occur with *ser* in contexts in which the felicity conditions of *estar* are not met. (75), repeated from (6), is a case in which the copular clause is embedded under a factive verb and therefore its contents may (but need not) be taken to be common knowledge.

- (75) a. **Context:** Today, we have an exam on Spanish architecture.
 b. *Tengo que recordar que la Casa Batlló es/está en Barcelona.*
 Have.PRES.1.SG that remember that the house Batlló ser/estar.PRES.3.SG in Barcelona
 I need to remember that the Batlló House is in Barcelona.

Here we follow recent work by Simons et al (2017) that shows that factive verbs do not lexically presuppose the truth of their complements. The implication that the complement is true (i.e. it obtains at every world in the Common Ground) depends on whether the content of the complement is at-issue or not in the context. If the content of the complement (*the-Batlló-House-be-in-Barcelona*) is taken to be known in the context, then every circumstance in $Circ(c)$ is a verifying circumstance. This means that the context cannot be a bounded context (since there is no no-weaker falsifying circumstance) and this justifies the use of *ser*. If the content of the complement is taken to be at-issue, i.e. when it is not common ground that Batlló House is in Barcelona, then $Circ(c)$ must contain no-weaker falsifying circumstances on the world parameter.³⁸ Since there is no stronger world than w_0 , if we take w_0 to be the world of circumstance i at which the prejacent is asserted to be true, i is a maximal verifying circumstance and the use of *estar* is licensed.

We can verify that at-issue status determines the use of *ser* with locative predicates by constructing a minimally distinct context from (75-a) which entails that the content of the complement is not common ground. In (76-b), which is uttered in such a context, native speakers report a distinct preference for *estar* and degraded status of *ser*.

³⁸As a reminder, these are worlds that are equivalent to the actual world w_0 except with respect to p (= *Batlló House is in Barcelona*) and its causal ancestors.

- (76) a. **Context:** I am trying to revise for the exam on Spanish architecture and I don't know all my facts.
 b. *No recuerdo si la Casa Batlló #es/está en Barcelona or in Madrid.*
 NEG remember.PRES.1.SG if the house Batllo ser/estar.PRES.3.SG in Barcelona or in Madrid.
 I do not remember whether the Batllo House is in Barcelona or in Madrid.

Another effect of the *ser/estar* contrast with locative predicates has been mentioned in Roldán (1974: 68) who translates (77-a) and (77-b) differently.

- (77) a. *¿Donde es la salida?*
 Where ser.PRES.3.SG the exit-door?
 Where is the way out?
 b. *¿Donde está la salida?*
 Where estar.PRES.3.SG the exit-door?
 Where is the exit door? (Roldán 1974: 68)

Native speakers agree with the judgement that a question like *Where is the door?* asked using *estar* conveys that the speaker is interested in the location of the exit door, while the same question, asked with *ser* conveys that the speaker is interested in finding the way out of the building. This subtle difference in the meaning of the two questions can be accounted for under our analysis. While the question in (77-a) can be represented as in (78-a), the question in (77-b) has the representation in (78-b).

- (78) a. $\{p \mid p = \lambda i. \llbracket \text{the door} \rrbracket^i \text{ is in } x \text{ in } i \mid \text{location}(x)\}$
 b. $\{p \mid p = \lambda i : \mathbf{bound}(c_0, i, \text{the-door-is-in-}x). \llbracket \text{the-door} \rrbracket^i \text{ is in } x \text{ in } i \mid \text{location}(x)\}$

The question in (78-a) partitions the set of circumstances by where the door (to the contextually salient building) may be located at those circumstances. The question in (78-b) restricts the set of circumstances to those circumstances in *Circ(c)* that are maximal verifying circumstances for some proposition of the form *the door is in x*. Since the strongest circumstances are those containing worlds exactly like the real world except with respect to the location of the door, the question amounts to a set of alternative propositions about the possible location of the door of the actual world. This is what gives rise to the felt difference between the two questions, where the first is understood to be about a way to exit the building while the other is understood to be about the location of a physical object.

5.2.3 *ser* with adjectives

Individual-level adjectives: Individual-level adjectives naturally occur with *ser* rather than *estar*. It is part of our common lexical knowledge that properties described by such adjectives (like *intelligent*, *polite*, *discreet*) hold of individuals indefinitely over time and do not vary if the spatial location of individuals is changed. The comparison class that determines the contextual standard by which it is determined that a property occurs in an individual to a sufficient extent is also vaguely defined in most contexts. Given these lexically and contextually derived background assumptions, there is a strong expectation in most

contexts that the value for the contextually relevant parameter p_c be greater than its value in i , the specific circumstance at which the prejacent is asserted to be true. The use of *estar*, as discussed extensively in several sections in §5.1.2, in such contexts, conveys that the context of use, c_0 is bounded with respect to the circumstance of evaluation i and the prejacent. The effect of this presupposition is that, depending on specific contextual conditions (specifically the relevant parameter of the circumstance), the property attribution may be understood as temporary, surprising, restricted to the actual world, and so on.

In contrast, asserting that the prejacent is true at i using *ser* is neutral, as described in (55-a). It is consistent with (but does not invoke) the implication – an antipresupposition – that all no-weaker and strictly stronger circumstances than i in $Circ(c)$ are verifying circumstances for the prejacent. Repeated from (54):

- (79) a. $\neg \exists i' \in Circ(c) : i' \not\prec_{p_c} i \wedge \llbracket P(x) \rrbracket^{i'} = 0$
b. $\neg \forall i'' \in Circ(c) : \llbracket P(x) \rrbracket^{i''} = 1 \rightarrow i \succeq_{p_c} i''$

Basically, *ser* is the appropriate copula for conveying that the prejacent's truth is not relativized to any circumstance and can be established at any circumstance in $Circ(c)$. This makes it especially compatible with the meaning of individual-level adjectives.

Stage-level adjectives: With stage-level adjectives, there is a strong expectation that the described property holds over limited temporal durations. The relevant circumstances (those in $Circ(c)$) for asserting whether such a property holds of an individual therefore would vary at least along the time parameter. For any prejacent containing a stage-level adjective, which is asserted to be true at some $i \in Circ(c)$, there is no expectation at c that the value for the contextually relevant parameter p_c (often time) be much greater than its value in i .³⁹ Part of the anti-presupposition of *ser* – that all no-weaker and strictly stronger circumstances than i are verifying circumstances – is inconsistent with this expectation. The use of *ser* with such adjectives leads to the accessing of a meaning of the adjective that is more compatible with its anti presupposition. As described in (55-b-i), the adjective is construed as describing a property which is not bound to a maximal circumstance. Several examples were given in (10)–(13) in §2.1.2. One example (80), is repeated below as a reminder.

- (80) a. *El reportero es sucio*
The reporter ser.PRES.3.SG dirty
The reporter is dirty-minded (thinks in a perverted way) OR is corrupt.
- b. *El reportero está sucio*
The reporter estar.PRES.3.SG dirty
The reporter is dirty (and needs a shower)

On our analysis, even if some linguistic context contains material that appears to not support the implications associated with *ser* (such as a context with stage-level adjectives), the use of *ser* is still acceptable if there is another property associated with the same lexical item that is consistent with the implications of *ser*. This

³⁹Let us assume as before that the time parameter of i is taken to be t_0 – a short interval corresponding to the time of utterance at which the prejacent is observed to obtain.

well-discussed observation, that a class of adjectives exhibit stage-level and individual-level senses/readings which surface with *estar* and *ser* respectively, suggest that these senses emerge only in contexts which are consistent with their lexical entailments.

5.2.4 Semantic effects on the interpretation of nominal subjects

A second kind of effect of the anti-presupposition associated with *ser* is that, in the case of certain adjectives, *ser*, if acceptable, affects the interpretation of the subject nominal (55-b-ii). As shown in the examples below, repeated from (81) and (82), the use of *estar* correlates with a referential interpretation of the nominals *el acero* and *el verano* while the use of *ser* correlates with a kind interpretation of both nominals.

- (81) a. *el acero está duro*
the steel *estar*.PRES.3.SG hard
This steel is hard.
- b. *el acero es duro*
the steel *ser*.PRES.3.SG hard
Steel is hard. (Roldán 1974: 68)
- (82) a. *el verano está caluroso*
the summer *estar*.PRES.3.SG hot
The summer is hot.
- b. *el verano es caluroso*
the summer *ser*.PRES.3.SG hot
Summer is hot.

Definite descriptions in Spanish (as in English) can be used to refer to ordinary individuals as well as kinds.⁴⁰ That these uses surface in the presence of particular copulas comes out naturally on our analysis. The boundedness presupposition of *estar*, which conveys that the circumstance *i* at which the prejacent is asserted, is a maximal verifying circumstance, makes *estar* the appropriate copula for describing the state in which an entity is observed to be at the given circumstance. The hearer, by quantity, reasons that the speaker is not in a position to make a stronger claim by asserting the prejacent as being true at stronger circumstances by using *ser*. Therefore, the speaker is understood to be restricting the assertion to the circumstance of observation and therefore to some specified quantity of steel, or a specific summer observable at the circumstance *i*.

⁴⁰Consider the following examples from the Corpus del Español (Davies 2002) (<http://www.corpusdelespanol.org>):

- (83) a. *el perro es un animal social*
the dog *ser*.PRES.3.SG an animal social
The dog is a social animal. [Corpus del español, 2016; Iberian Spanish, Source: www.spaniards.es]
- (84) a. *El león es más poderoso y temido que todas las demás bestias.*
the lion *ser*.PRES.3.SG more powerful and feared than all the other beasts.
The lion is more powerful and feared than any other beast. [Corpus del español, 2016; Mexican Spanish, Source: <http://www.alquimistasdelapalabra.com/>]

In contrast, by using *ser* the speaker conveys that the prejacent is true at all no-weaker and strictly stronger circumstances than *i* in *Circ(c)*. This attributes the property of being hard or strong to the steel or the summers that obtain at all such circumstances. The speaker is, in this case, understood to describe properties of the kind *steel* or *summer*, which hold across circumstances.

5.2.5 Summary

This section demonstrated how the analysis of §4 applies to a range of cases in which *ser* is the copula of choice. We provided a reasoned account for why nominal predicates appear predominantly with *ser* and the limited set of cases in which *ser* appears with locative predicates. We also described how the various effects of the use of *ser* with different classes of adjectives stem from the semantics of *ser* and *estar* and the interaction between them.

5.3 Adjectives associated with only one copula

§2.1.2 reported that several researchers have claimed the existence of adjectives that are obligatorily associated with either *ser* or *estar*. The literature offers several lists of such adjectives but fails to attempt an explanation for why such categorical associations between copular form and lexical items might exist. A unified analysis of the two-copula phenomenon must offer an explanation for this behavior, if it really exists, and our analysis has not addressed the issue so far. In this section, we offer an understanding of why certain adjectives may exhibit quasi-categorical tendencies of appearing with one or the other copula. But we note that we do not see the phenomenon as one involving obligatory associations but rather as a tendency that emerges from the interactions between the lexical meanings of the copula and particular adjectives.

5.3.1 *estar*-only adjectives

Consider the lists (repeated from (16)) for *estar*-only adjectives given below. Additional *estar*-only adjectives like *intactos* ‘intact’ and *incontaminado* ‘uncontaminated’ have been mentioned in Roldán (1974: 72) (repeated in (86)).

- (85) a. *ausente* (away), *solo* (alone), *próximo* (near), *vacío* (empty), *lleno* (full), *descalzo* (barefooted), *harto de* (fed up with), etc. (Maienborn 2005: 159)
- b. *levantado* (standing); *descalzo* (barefooted); *roto* (broken); *previsto* (anticipated) (Clements 2008: 161–162)
- (86) a. *antes de usar asegúrese que los sellos estén intactos*
 Before of use ensure.IMP that the seals estar.SUBJ.3.PL intact
 Before using, make sure that the seals are intact. (Roldán 1974: 72)
- b. *En Norteamérica hay pocos lagos que estén incontaminados.*
 In North America have few lakes that estar.SUBJ.3.PL unpolluted
 In North America, there are a few lakes that are uncontaminated. (Roldán 1974: 72)

As noted in §2.1.2, it is quite possible to come up with contexts in which many of these adjectives are acceptable with *ser* (with changed interpretations for the adjectives). Therefore we take these lists as indicating only a strong preference for these expressions to occur with *estar*. On our analysis, there is a straightforward explanation to this preference – the lexical content of these adjectives, on their predominant interpretation, guarantees that the boundedness presupposition of *estar* is satisfied, leading to the use of this copula in almost every context. Three properties unify the adjectives in (85) and (86):

- (87) a. They all describe a relationally dependent, contingent property.⁴¹ By this we mean a property whose occurrence in an entity necessarily depends on a specific relation holding between that entity and other entities/events at a specific circumstance.⁴²
- b. They all render an alternative, closely-related absolute property salient.⁴³
- c. They all lexically entail that the presence of this alternative property is possible at any temporally or locationally stronger circumstance than the circumstance of evaluation.⁴⁴

These lexical properties of the adjectives listed above guarantee that any context comes out as a bounded context, requiring the use of *estar*. If any prejacent containing one of these adjectives is true at a circumstance $i \in \text{Circ}(c)$, it follows that $\text{Circ}(c)$ contains no-weaker falsifying circumstances – these may differ on the world and/or time and/or location parameters. The second condition for the use of *estar* is satisfied because, given (87-c), the speaker cannot feasibly extrapolate from the circumstance of observation to strictly stronger circumstances. The speaker therefore is forced to restrict their assertion to the circumstance of observation i , specifically the world/time/location at which the observation is made. Thus, i comes out as a maximal verifying circumstance in $\text{Circ}(c)$ for the prejacent, leading to the use of *estar* being felicitous.

⁴¹This characterization is similar to and applies to some of what Lewis (1983, 1986) calls extrinsic properties.

A sentence or statement or proposition that ascribes intrinsic properties to something is entirely about that thing; whereas an ascription of extrinsic properties to something is not entirely about that thing, though it may well be about some larger whole which includes that thing as part. A thing has its intrinsic properties in virtue of the way that thing itself, and nothing else, is. Not so for extrinsic properties, though a thing may well have these in virtue of the way some larger whole is. (Lewis 1983: 112)

We note that many properties described using *estar* appear to have the status of extrinsic properties on the Lewisian classification, especially properties having to do with location. But we do not explore further the intrinsic–extrinsic distinction, which has proved to be notoriously difficult to provide an independent characterization of.

⁴²To elaborate: To be absent is to be away from a salient location; to be alone is to not be with another entity; to be near is to be located in the proximity of some other contextually salient entity; to be empty is to be unoccupied by some substance (concrete or abstract); to be full is to be occupied by some substance; to be barefooted is to not have one's feet contained in footwear; to be fed up with is to be repeatedly irked by some other entity/situation to a tipping point; to be standing is to be supported in vertical position by some other entity; to be broken is to be in the patient relation to a breaking event; to be anticipated is to be expected by some entity; to be intact is to not have been evidently modified from its original condition through some event; to be uncontaminated is to be free from contaminants.

⁴³In fact, most, but not all of the adjectives in this set are members of a pair of contradictory adjectives, where the use of the adjective in a statement entails the falsity of the corresponding antonym statement and vice versa. The property rendered salient is the negation of the original property.

⁴⁴Note that most of the adjectival expressions are absolute adjectives with objectively determined criteria for application, making the delineation function and agent parameters irrelevant in determining their truth.

5.3.2 *ser*-only adjectives

For a class of adjectives, it has been said that they resist *estar* quite stubbornly, regardless of the context of occurrence. A sample list from Marín (2010) (repeated from (20)) follows:

- (88) *catalán* ‘Catalan’, *cauto* ‘cautious’, *constante* ‘constant’, *cuidadoso* ‘careful’, *(des)cortés* ‘(im)polite’, *(des)leal* ‘(dis)loyal’, *(im)prudente* ‘(im)prudent’, *(in)discreto* ‘(in)discreet’, *(in)capaz* ‘(in)capable’, *(in)justo* ‘(un)just’, *immoral* ‘immoral’, *(in)mortal* ‘(im)mortal’, *inteligente* ‘intelligent’, *listo* ‘clever’, *llevadero* ‘bearable’, *sabio* ‘wise’, *socialista* ‘socialist’, *temerario* ‘reckless’, *vegetariano* ‘vegetarian’.

We ourselves do not subscribe to the categorical nature of the *ser*-only constraint on such adjectives, considering it entirely possible to construct contexts in which they are compatible with *estar*. However, as we have stated before, we approach the problem as one about identifying the relation between the lexical meanings of these adjectives and the typical set of contexts in which they might appear.

We suggest that just like with *estar*-only adjectives, it is the lexical content of *ser*-only adjectives that determines their distribution. Specifically, the lexical content of such adjectives is incompatible with the boundedness presupposition of *estar*, rendering the use of this copula unacceptable in the majority of contexts. While these adjectives are not unifiable across the board, they exhibit one of the following two properties:⁴⁵

For some adjectives in (88), if the property they denote can be truthfully applied to an argument at a circumstance $i \in \text{Circ}(c)$, this entails that it can be truthfully applied at every stronger circumstance in $\text{Circ}(c)$, provided certain conditions are met.⁴⁶ This is the case for the adjectives *indiscreet*, *immoral*, *immortal*, *incapable*, *imprudent*, *disloyal*, *impolite*, and *unjust*.

Note that these are minimum-standard negative adjectives built off upper-closed scales. They also describe properties that hold of an entity (or an action) by virtue of how they relate to social and moral norms (or biological facts, for *immortal*), which are all expected to be propositions in the common ground. If an entity has one of the properties described by the adjectives in the list at some circumstance, they have it by virtue of how some action they participate in relates to social and/or moral norms. At every stronger circumstance *at which the action obtains*, the entity is entailed to have the property. The use of *estar*, which conveys that the circumstance at which the prejacent is asserted is the strongest verifying circumstance, is not appropriate for prejacentes containing these adjectives.

For some adjectives in (88), the property they denote can be truthfully applied to an argument at a circumstance $i \in \text{Circ}(c)$, only if the argument instantiates that property at stronger circumstances of evaluation. This condition obtains for the adjectives *discreet*, *moral*, *mortal*, *capable*, *prudent*, *bearable*, *loyal*, *constant*, *careful*, *polite*, *just*, *reckless*, *vegetarian*. Note that several of these are maximum-standard positive

⁴⁵*Catalán* seems to be an exception to these but it does have the flavor of a nominal (an expression used to classify rather than describe an entity). Other adjectives describing national or ethnic affiliation (like *americano*, *nigeriano*, *hindú* etc.) also behave similarly with respect to appearing invariably with *ser*.

⁴⁶The relevant parameters here are the world and time parameters and we restrict our attention to the set of relevant circumstances, considering circumstances that vary from i in having stronger worlds or super-intervals as the values of their world and time parameters respectively.

adjectives built off upper-closed scales and have the same relation to social/moral norms or biological facts as the subset above. To be moral, prudent, loyal, constant, careful, polite, just, vegetarian is to not exhibit any evidence of immorality, imprudence, disloyalty, sign of ceasing, carelessness, impoliteness, injustice, or meat-consumption regardless of the circumstance of evaluation.⁴⁷ Once again, the use of *estar*, which conveys that the circumstance at which the prejacent is asserted is the strongest verifying circumstance, is not appropriate for prejacentes containing these adjectives.

Thus, on our analysis, the observed dispreference for the use of *estar* in clauses containing these predicates is explained as a natural consequence of the incompatibility between their lexical content and the lexical content of *estar*.

6 Conclusion

The basic ingredients of the analysis proposed here are:

- (89) a. *ser* and *estar* are best analyzed as presuppositional variants.
- b. The presuppositional content associated with *estar* makes reference to alternative circumstances of evaluation in the context which are ordered by strength.
- c. The use of *estar* requires satisfaction of two conditions in the context – (89-c-i) and (89-c-ii). These together define a bounded context w.r.t to the prejacent and the circumstance of evaluation.
 - (i) There must be accessible no-weaker alternative circumstances in the context at which the prejacent is false.
 - (ii) The circumstance of evaluation must be a maximal verifying circumstance for the prejacent in the context.
- d. The use of the neutral variant *ser* licenses the inference that the condition for bounded contexts is not met; the outcome is that the prejacent is understood to be true at strictly stronger circumstances of evaluation.
- e. The observed distribution of the two copulas, i.e.
 - (i) Syntactic category correlations (predicates expressed by prepositional phrases occur with *estar* and predicates expressed by nominal phrases occur with *ser*)
 - (ii) Copula preferences for adjectives as well as differential interpretive effects when the same adjective is used with different copulas
 - (iii) Quasi-categorical association of some adjectives with a single copula stems from an interaction between the discourse context, the assigned meanings for the two copulas, and the lexical content of different types of predicates.

The analysis opens up a new avenue into furthering our understanding of the structure and evolution of the discourse context in relation to the question under discussion. In particular, it introduces the idea of a strength ordering on contextually relevant alternative circumstances of evaluation relative to a single propo-

⁴⁷It is not clear to us what the scalar properties of *reckless* are.

sition. This amounts to a refinement of the notion of propositional alternatives. In existing frameworks, such alternatives are determined by the question under discussion (Roberts 1996) or the Current Question (Beaver & Clark 2008) and assigned content relative to identical temporal, locational, contextual standard and/or judge parameters. Once this content is fixed, the strength ordering between propositions emerges from the relation between the set of worlds they denote. Stronger propositions are those that denote a subset of the worlds that weaker propositions denote.

On the framework developed here, it is possible for strength orderings to emerge differently.⁴⁸ Propositions, rather than being functions from worlds to truth-values, are taken to be functions from circumstances to truth-values. *Circ(c)*, the set of relevant circumstances, is the counterpart of the Stalnakerian Context Set. Strength orderings on circumstances in *Circ(c)* are not determined by the *lexical content* of propositional expressions but rather by the context, which provides the parameter along which an ordering on *Circ(c)* is established.⁴⁹ It is such an ordering of circumstantial alternatives that certain expressions in languages, such as *estar*, appear to be sensitive to. The presuppositions of *estar* comment on the relative strength of relevant alternative circumstances and are satisfied if the prejacent is asserted at a maximal verifying circumstance with no-weaker falsifying circumstances present in *Circ(c)*.

If this reading of the *ser/estar* phenomenon in Spanish is on the right track, then our analysis leads to an expectation that natural language should contain not only devices that facilitate comment on the relative strength of alternative propositions (e.g. exclusives, (scalar) additives) but also expressions that comment on the relative strength of alternative circumstances of evaluation. There is no cross-linguistically researched systematic array of such devices in existence yet but it is possible that this perspective on the *ser/estar* distinction may trigger a (re-)investigation and (re-)classification of expressions with such contribution. On a first pass, meanings associated with intensifier expressions *really*, *totally*, “*drama so*”, precisifying discourse particles such as *right* (as in *right here* or *right now*) and approximatives (*around*, *sort of*) seem to be amenable to (re-)analysis based on sensitivity to alternative circumstances of evaluation.

References

- [Arche2006] Arche, MJ. 2006. *Individuals in Time: Tense, Aspect and the Individual/Stage Distinction*. Amsterdam/Philadelphia: John Benjamins Publishing Company. doi:<https://doi.org/10.1075/la.94>.
- [Barker2002] Barker, Chris. 2002. The Dynamics of Vagueness. *Linguistics and Philosophy* 25 (1): 1–36. doi:<https://doi.org/10.1023/A:1014346114955>.
- [Beaver and Clark2008] Beaver, David I., and Brady Z. Clark. 2008. *Sense and Sensitivity: How Focus Determines Meaning*. Oxford: Blackwell Publications.

⁴⁸It is indeed possible that the main question in the discourse is the temporal or spatial extent of some property attribution. For instance, we might be interested in the precise interval at which John was hungry or the particular part of a river that is wide. In such a case, it would be the question under discussion that would effect a strength ordering on the set of circumstances. However, in most cases, the question in the context pertains to information that is not directly related to circumstantial strength. This is why we suggest that the strength ordering emerges independently from the question in the context. The precise mechanism by which this happens and how to subsume it under the general question-under-discussion model would be a central aspect of future work aimed at reconciling our proposal with existing frameworks for analyzing alternative-sensitive phenomena.

⁴⁹The actual ordering depends on the domain associated with the circumstantial parameter.

- [Bello1972] Bello, Andrés. 1972. *Gramática de la Lengua Castellana Dedicada al Uso de los Americanos*. Caracas, Venezuela: Ediciones del Ministerio de Educación.
- [Bull1942] Bull, William E. 1942. New Principles for Some Spanish Equivalents of To Be. *Hispania* 25 (4): 433–443. doi:<https://doi.org/10.2307/334262>.
- [Camacho2012] Camacho, José. 2012. Ser and Estar: The Individual/Stage-level Distinction and Aspectual Predication. In *The handbook of hispanic linguistics*, eds. J. I. Hualde, A. Olarrea, and E. O'Rourke, 453–476. New Jersey: Willey-Blackwell. doi:<https://doi.org/10.1002/9781118228098.ch22>.
- [Carlson1977] Carlson, Gregory. 1977. A Unified Analysis of the English Bare Plural. *Linguistics and Philosophy* 1 (3): 413–457. doi:<https://doi.org/10.1007/BF00353456>.
- [Clements1988] Clements, C. 1988. The Semantics and Pragmatics of the Spanish [Copula+Adjective] Construction. *Linguistics* 26 (5): 779–822. doi:<https://doi.org/10.1515/ling.1988.26.5.779>.
- [Clements2006] Clements, Clancy. 2006. Ser-Estar in the Predicate Adjective Construction. In *Functional approaches to spanish syntax: Lexical semantics, discourse and transitivity*, eds. Clancy Clements and Jiyoung Yoon, 161–202. London: Palgrave Macmillan. doi:<https://doi.org/10.1057/9780230522688>.
- [Cresswell1976] Cresswell, M. J. 1976. The Semantics of Degree. In *Montague grammar*, ed. Barbara Partee. New York: Academic Press. doi:<https://doi.org/10.1016/B978-0-12-545850-4.50015-7>.
- [Demonte1979] Demonte, Violeta. 1979. Semántica y Sintaxis de las Construcciones con ‘Ser’ y ‘Estar’. *Revista Española de Lingüística* 9 (1): 133–172.
- [Diesing1992] Diesing, Molly. 1992. *Indefinites*. Cambridge, MA: The MIT Press.
- [Escandell-Vidal and Leonetti2002] Escandell-Vidal, V, and M Leonetti. 2002. Coercion and The Stage/Individual Distinction. In *From words to discourse: Trends in spanish semantics and pragmatics*, ed. J Gutierrez-Rexach, 159–179. Oxford: Elsevier Science.
- [Estrada Acosta2012] Estrada Acosta, Paulina. 2012. Verbos ser y estar en el español: estudio exploratorio de los usos innovadores. Master thesis, Universidad de Sonora.
- [Fábregas2012] Fábregas, Antonio. 2012. A Guide to IL and SL in Spanish: Properties, Problems and Proposals. *Borealis. An International Journal of Hispanic Linguistics*. doi:<https://doi.org/10.7557/1.1.2.2296>.
- [Falk1979] Falk, Johan. 1979. Visión de normal general versus visión de norma individual. *Studia Neophilologica* 51 (2): 275–293.
- [García de Diego1970] García de Diego, Vicente. 1970. *Gramática Histórica Española*. Madrid: Gredos.
- [Gili Gaya1998] Gili Gaya, Samuel. 1998. *Curso Superior de Sintaxis Española*. Barcelona: Vox.

- [Goldsmith and Woisetschlaeger1982] Goldsmith, John, and Erich Woisetschlaeger. 1982. The Logic of the English Progressive. *Linguistic Inquiry* 13 (1): 79–89.
- [Greenberg1998] Greenberg, Yael. 1998. An Overt Syntactic Marker for Genericity in Hebrew. In *Events and grammar*, ed. Susan Rothstein, 125–143. Dordrecht: Kluwer Academic Publishers. doi:https://doi.org/10.1007/978-94-011-3969-4_6.
- [Kaplan1989] Kaplan, David. 1989. Demonstratives: An Essay on the Semantics, Logic, Metaphysics and Epistemology of Demonstratives and other Indexicals. In *Themes from kaplan*, eds. J. Almog, J. Perry, and H. Wettstein, 481–566. Oxford: Oxford University Press.
- [Keniston1937] Keniston, Howard. 1937. *The Syntax of Castilian Prose. The Sixteenth Century*. Chicago: University of Chicago Press.
- [Kratzer1995] Kratzer, A. 1995. Stage-Level and individual-Level Predicates. In *The Generic Book*, eds. Gregory Carlson and Francis Jeffry Pelletier, 125–175. Chicago: The University of Chicago Press.
- [Kratzer1989] Kratzer, Angelika. 1989. Individual-Level vs. Stage-Level Predicates. In *Papers on quantification*, eds. Emmon Bach, Angelika Kratzer, and Barbara Hall, 42–45. Amherst: University of Massachusetts. doi:<https://doi.org/10.1007/BF00627775>.
- [Krifka1998] Krifka, Manfred. 1998. The Origins of Telicity. In *Events and Grammar*, ed. Susan Rothstein, 197–235. Dordrecht: Kluwer.
- [Lasersohn2005] Lasersohn, Peter. 2005. Context Dependence, Disagreement, and Predicates of Personal Taste. *Linguistics and Philosophy* 28 (6): 643–686. doi:<https://doi.org/10.1007/978-94-015-8581-1>.
- [Lewis1979] Lewis, David. 1979. Scorekeeping in a Language Game. *Journal of Philosophical Logic* 8 (1): 339–359.
- [Lewis1983] Lewis, David. 1983. Extrinsic Properties. *Philosophical Studies* 44: 197–200. doi:<https://doi.org/10.1007/BF00354100>.
- [Maienborn2005] Maienborn, C. 2005. A Discourse-Based Account of Spanish Ser/Estar. *Linguistics* 43 (1): 155–180. doi:<https://doi.org/10.1515/ling.2005.43.1.155>.
- [Marín2010] Marín, Rafael. 2010. Spanish Adjectives within Bounds. In *Adjectives: Formal analyses in syntax and semantics*, eds. Patricia Cabredo Hofherr and Ora Matushanksy, 307–331. Amsterdam/Philadelphia: John Benjamins Publishing Company. doi:<https://doi.org/10.1075/la.153.09mar>.
- [Querido1976] Querido, Antonio. 1976. The Semantics of Copulative Constructions in Portuguese. In *Current studies in romance linguistics*, eds. Marta Luján and Fritz Hensey, 343–366. Washington: Georgetown University Press.
- [Ramsey1894] Ramsey, M. 1894. *A Textbook of Modern Spanish*. New York: Spaulding.

- [Roberts1996] Roberts, Craige. 1996. Information structure in discourse: Towards an integrated formal theory of pragmatics. In *OSUWPL*, 49, eds. Jae Hak Yoon and Andreas Kathol, 91–136. The Ohio State University, Department of Linguistics.
- [Roby2009] Roby, David. 2009. *Aspect and The Categorization of States: The Case of Ser and Estar in Spanish*. Philadelphia, PA: John Benjamins Publishing Company. doi:<https://doi.org/10.1075/slcs.114>.
- [Roldán1974] Roldán, María M. 1974. Toward a Semantic Characterization of Ser and Estar. *Hispania* 57 (1): 68–75. doi:<https://doi.org/10.2307/339442>.
- [Rooth1985] Rooth, Mats. 1985. Association with Focus. PhD diss, University of Massachusetts, Amherst.
- [Simons et al.2017] Simons, Mandy, David Beaver, Craige Roberts, and Judith Tonhauser. 2017. The best question: Explaining the projection behavior of factives. *Discourse Processes* 54 (3): 187–206. doi:10.1080/0163853X.2016.1150660. <http://dx.doi.org/10.1080/0163853X.2016.1150660>.
- [Stephenson2007] Stephenson, Tamina. 2007. Judge Dependence, Epistemic Modals, and Predicates of Personal Taste. *Linguistics and Philosophy* 30 (4): 487–525. doi:10.1007/s10988-008-9023-4.
- [Stockwell et al.1965] Stockwell, RP, JD Bowen, and JW Martin. 1965. *The Grammatical Structures of English and Spanish*. Chicago: University of Chicago Press.