

MODIFICATION OF STATIVE PREDICATES

THOMAS ERNST

University of Massachusetts, Amherst, and Dartmouth College

Manner and locative expressions modifying stative predicates, as in *own (something) honestly* and *(be) quiet in the car*, are rare compared to those modifying dynamic predicates, and it has been claimed (for example, in Maienborn 2005 and Katz 2008) that they are systematically excluded on semantic grounds. I argue here that this is not so: in fact, they are perfectly acceptable once the restrictions on them are understood. I propose further that these restrictions take the form of (i) a pragmatic condition that generally bans locative modification of stative predicates, but that may be overridden in certain defined contexts, and (ii) regular semantic incompatibilities between adverbs and stative predicates, which, being semantically ‘impoverished’, have relatively few modifiable semantic features compared to dynamic predicates. These proposals are supported by extensive examples. The conclusions indicate that there is no need to treat states as fundamentally different from other eventualities, whether by invoking Kimian states or by avoiding eventuality variables altogether in their representations.*

Keywords: states, events, stative predicates, locative modification, manner adverbs, eventuality variables

1. INTRODUCTION. Predicates representing stative eventualities, such as *own*, *resemble*, *believe*, *(be) funny*, or *(be) stable*, behave differently from eventive predicates such as *swim*, *collide*, or *twist*. In terms of how they can be modified, it is clear that they are far more restricted: they readily take domain adverbs like *physically* and point-time adverbials like *last year* as in 1a–b, and the gradable adjectives among them normally take degree modifiers (see 2), but neither manner adverbs nor locative adverbials combine with them as easily (3–4).

- (1) a. She resembles her brother physically, but her personality is completely different.
b. They owned several cars last year.
- (2) a. It is {very funny, extremely stable, rather slanted, somewhat sad}.
- b. That is a {remarkably silly, uncannily accurate} portrait.
- (3) *The ground is softly wet.
- (4) *The dog is hot on the porch.

This has led to the view, expressed most notably in the work of Claudia Maienborn (2001, 2003a, 2005, inter alia) and Graham Katz (2000, 2003, 2008), that genuine stative predicate modification involving manner and/or locative expressions is impossible. To account for this, Katz holds that stative predicates have no eventuality variable at all (they are properties of times), while for Maienborn these predicates represent Kimian

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¹ Maienborn excludes from consideration ‘state verbs’ like *stand* and *sleep*, which may seem to represent stative predicates at first look but which act like dynamic eventualities: most importantly, they pass the primary, standard test for (English) dynamic predicates—acceptability in the progressive, as in *She is standing/sleeping as we speak*. For discussion see Maienborn 2005:284ff.; for general consideration of properties of stative predicates, see Maienborn’s discussions as well as Dowty 1979, Bach 1986, Rothstein 2004, Ramchand 2008, Rothmayr 2009, Husband 2012, and references cited in these sources.

states, whose variable is restricted in ways that event variables are not.¹ On a standard Davidsonian analysis, for example, 5a with the eventive verb *hit* would have the representation in 5b (where *b* stands for *her brother*).

- (5) a. She hits her brother.
 b. $\exists e$ [HIT(*e*) & Agent (*e*, she) & Theme (*e*, *b*)]
 (6) a. She resembles her brother.
 b. $\exists k$ [RESEMBLE(*k*) & Holder (*k*, she) & Theme (*k*, *b*)]

If *k* stands for Kimian states, 6a could be represented by 6b (where the ‘Holder’ and ‘Theme’ labels are for convenience only). For Maienborn, Kimian states are abstract objects standing somewhere between events and facts on a ‘spectrum of world immanence’ (Asher 1993); they are defined as ‘abstract objects for the exemplification of a property *P* at a holder *x* and time *t*’ (Maienborn 2005:303). Abstract states of this sort are like dynamic events in that they can be located in time, so sentences like *She was tired yesterday* are fine. However, Maienborn proposes that they have a number of special properties that dynamic predicates do not share: they cannot vary in the way they are realized, they are not accessible to direct perception, and they have no location in space (Maienborn 2005:304). These properties directly account for the unacceptability of locative and manner modification, as shown in 3–4.² (See Maienborn 2003b, 2005, Rothmayr 2009, and Moltmann 2013 for further discussion.)

Katz (2008) provides the examples in 7 (his 16a–d) to support the descriptive ban on manner modification of states, and Maienborn provides German examples that translate directly into English as in 8 for the locative cases (her 2003b 5d–g).

- (7) a. *John resembled Sue slowly.
 b. *She desired a raise enthusiastically.
 c. *They hate us revoltingly.
 d. *She was slowly tall.
 (8) a. *The dress is wet on the clothesline.
 b. *Bardo is hungry in front of the fridge.
 c. *The tomatoes weigh 1 kg beside the peppers.
 d. *Bardo knows (at this moment) the answer over there.

However, a number of writers have provided examples where these modification patterns in fact seem to work. In 9a–b, the locative PPs *in the subway* and *in the back seat of the car* are fine; in 10–11, manner adverbs are acceptable with adjectives and verbs.

- (9) a. In New York, I am scared in the subway. (In Paris, I am not.)
 b. In Germany, John was nauseous in the back seat of the car because of the speed at which we drove. (Rothstein 2005, ex. 4a–b)
 (10) effortlessly elegant, systematically different, charmingly benign (Mittwoch 2005, ex. 30)
 (11) a. John loves Mary passionately.
 b. The house is eerily quiet
 c. visibly/perceivably happy (Katz 2008, ex. 19c–d, 35c)

² In this article I do not discuss the issue of states with perception-verb complements, which Maienborn 2005 claims to be impossible (as in **I saw Carol be tired*). It is not clear that they are in fact impossible, given manner readings in cases like *I see how this painting’s construction mirrors the composition in that Dürer print*; see Higginbotham 2005, Maienborn 2005, Mittwoch 2005, Ramchand 2005, Geuder 2006, and Piñon 2007 for discussion. I also ignore the issue of instrumental and comitative phrases like *with a spoon/with a friend* cooccurring with stative predicates. Deciding whether they can modify stative predicates should not affect the conclusions reached here, though of course any restrictions on acceptability must still be explained.

The two sets of examples—those like 9–11 where modification of states appears to be permitted and those like 7–8 where it is not—must be reconciled. Both major proponents of the ban on state modification recognize the existence of such counterexamples and propose accounts in which they do not truly represent modification of this kind.

Up to now, these counterexamples have provided the main critique of the Maienborn/Katz position, especially in Higginbotham 2005, Mittwoch 2005, Ramchand 2005, Rothstein 2005, and Geuder 2006. These writers also more or less agree on the basic intuition concerning the rarity of locative and manner modification of states. Locatives' behavior with state predicates is rooted in their being 'tendentially stable and not location dependent' (Rothstein 2005:379); thus, in some sense to be further defined, locative adverbials are excluded with states because they are not informative, since, as a default, the state holds regardless of location. As for manner adverbials, their relative rarity results from states being the 'simplest kind of eventuality' (Ramchand 2005:371) or 'monotonous events' (Higginbotham 2005:353), that is, such that their 'internal conceptual structure is too poor to provide a construal for the modifier' (Geuder 2006:111). What these writers do not do—with the exception of Geuder (2006), in a limited way for manner modification—is provide a theoretical elaboration of these underlying intuitions and a coherent, worked-out alternative to the Maienborn/Katz approach.³ While Maienborn does follow this idea to some extent, treating Kimian states as impoverished, for her this is a categorial contrast, justifying a different kind of Kimian state variable (as in 6) with sharply different properties from regular Davidsonian variables. Here, as for Mittwoch 2005, I hold that the different modification possibilities are more a matter of degree, one that does not support such a radical difference in representation.

Thus, the goals of this article are twofold. First, I show that restrictions on locative modification of states result from a pragmatically based condition formalizing the idea that, in the normal (default) case, any individual holder of a state would be in that state regardless of location. I show that the condition does not hold in special contexts where the possibility of an individual's state varying by location is made salient, that do not involve a particular individual, or that in other specific ways deviate from the default.

Second, I present extensive data to show that manner modification of states is more common than has usually been thought, drawing from a database of approximately 1,100 examples (of which about 50% are from published sources), and show why Maienborn's and Katz's attempts to explain examples away are inadequate. I also provide contrasts between more complex (more multidimensional⁴) and less complex (more unidimensional) predicates, to provide a greater underpinning for Mittwoch's (2005:86) assertion that the difference between stative and eventive predicates with respect to modification is a matter of degree, not of an absolute distinction between variable types. This permits an account of why, for example, the more complex predicates *elegant*, *belligerent*, *funny*, and *affectionate* permit more options for manner modification than do the less complex *blue*, *loud*, and *hard*, and of why the relatively small number of stative verbs like *own*, being on the simpler, more unidimensional end of the scale, usually resist manner modification. While counterexamples to Maienborn's and Katz's claims have been around for a while, the discussion here will offer a more systematic account of them and an explanation for

³ Kratzer 1995 represents a different attempt to capture the intuition about the stability of stative predicates, but in a semantic way similar to Maienborn and Katz.

⁴ I use *multidimensional* in one of its senses in current semantic theory, to mean 'having many semantic properties' or 'conceptually complex'. This is unrelated to the sense of *multidimensional* that refers to multiple, fundamentally different kinds of meanings, such as 'at-issue' and expressive meanings, as in Potts 2005. See §3 for further elaboration.

why they are relatively rare—that is, why it has been easy to assert a total ban on manner and locative modification of stative predicates.

Theoretically speaking, two conclusions can be drawn from all of this. One is that the restrictions on stative predicate modification are not broadly formulated, fundamental semantic matters; rather, they involve a pragmatically based constraint for locatives, and garden-variety semantic incompatibilities (type mismatches, given a sufficiently detailed theory of types) for manner modification. A second is that, contra Maienborn and Katz, all eventualities, including states, are represented by regular Davidsonian variables, as advocated by Higginbotham 1985, 2000, Parsons 2000, Ramchand 2008, and others.

2. LOCATIVE MODIFICATION.

2.1. MAIENBORN'S THEORY. Maienborn 2001 lays out a theory of locative modification, in which locative expressions divide into three types: internal, external, and frame-setting. The first of these, exemplified by 12 (her 13a), does not locate a whole event, but rather locates some entity (often a grammatical object) in a particular place.

(12) The cook prepared the chicken in a Marihuana sauce.

In 12, the chicken is in the sauce as part of the preparation, but the (whole) act of preparing is not in the sauce. I have no more to say about this type, since the concern here is with the other two readings. External readings are the canonical locatives that locate a whole event in a particular place.

(13) a. Clarissa wrote the book in London.
b. Alice swam her laps in the pool.

Frame-setting locatives like those in 14 locate some referent—that of a sentence topic or discourse-salient entity—in a particular place and provide a frame (topic) within which the rest of the sentence (comment) is interpreted.

(14) a. In Frankfurt the population has increased.
b. In France, Jerry Lewis is very popular.

I return later to the characterization of frame-setting locatives, when the precise criteria for distinguishing them from external readings are at issue.

Maienborn provides examples like those in 15 (adapted English translations of her 2001 ex. 59a,c) to claim that external locatives cannot occur with stative predicates.

(15) a. *Paul resembles his brother on the street corner.
b. *One bottle of red wine costs 15 euros beside the white wine.

She uses this fact (and others) to argue that stative verbs do not have a standard Davidsonian event argument, in combination with impossible cases of manner modification of statives, as in 16 (English adaptations of her 2005 examples 28a, 29b, and 30b).

(16) a. *Carol was restlessly thirsty.
b. *The table was sturdily wooden.
c. *Paul has a lot of money thriftily.

In particular, Maienborn argues that stative predicates are interpreted by means of Kimian states rather than standard eventualities (Maienborn 2005:302ff.). Kimian states are abstract objects, unlike events; they can be located in time, but are not accessible to direct perception, and so cannot serve as infinitival complements of perception verbs and do not combine with locative modifiers, and, since they cannot have alternative realizations, they disallow manner modification (Maienborn 2005:304).

Maienborn (2005) does admit the existence of locatives with stative predicates, such as 17 (Fernald 2000:24; Maienborn's 15a).

(17) Carol was tired/hungry/nervous in the car.

However, she argues crucially that such sentences do NOT represent regular external modification. She claims that they involve frame-setting modification, in which a locative expression relates in some way to the discourse topic. For 17 the most likely instantiation of this is a topic time (Maienborn 2001:232), yielding a reading roughly equivalent to ‘When she was in the car, Carol was tired/hungry/nervous’. Much of Maienborn’s account of locatives with stative predicates depends on determining the most likely object for the frame-setting locative to modify. That is, her semantics for frame-setting readings (18, her 2001 ex. 90) has the locative expression taking v^x as its object; v^x designates an underspecified referent relating to the discourse topic and requires a pragmatic resolution of this underspecification (α is the comment and *reg* is the region in which v^x is located; the locative PP is adjoined to TopP).

(18) Frame-setting modifiers

[_{TopP} PP_{LOC} [_{TopP} ...]]: λx [$\langle \alpha, x \rangle$ & LOC (v^x , *reg*)]

More specific values for v^x within the discourse topic might be the discourse topic itself, the topic time, the sentence topic (including the sentence subject), or some contextually relevant entity. For example, in 19 (Maienborn’s 2001:233, ex. 92), v^x cannot refer to Trafalgar Square because the latter cannot be restricted to London as opposed to other places—it is always and only in London. Nor can v^x felicitously refer to a time, because being in London is not a temporary property of Trafalgar Square. The remaining alternative is the discourse topic, which might be measures concerning public places in view of public disturbances or the like; thus v^x might be ‘closings off of public spaces’.

(19) In London war Trafalgar Square abgesperrt. (German)
in London was Trafalgar Square closed off

In 20a, by contrast, *in Sweden* could have a temporal reading (Fred was cold while in Sweden), and in 30b it could have an ‘epistemic’ reading, if (say) Fred’s gay marriage is legal in Sweden but not in Saudi Arabia; in 20c v^x may refer to hotels.

- (20) a. In Sweden, Fred was cold.
b. In Sweden, Fred was married.
c. In Sweden, some hotels are made out of ice.

(See Maienborn 2005:289 for further discussion.)

I return below to a fuller comparison of Maienborn’s use of frame-setting readings to account for locatives with stative predicates. For now, it is sufficient to note two *prima facie* difficulties that it presents. First, treating English postverbal locatives like those in 17 as frame-setting locatives is problematic in syntactic terms, because they occur fairly low in clausal structure; frame-setters are supposed to be ‘Chinese-style topics’, which occur high in a clause and take scope over the whole proposition. Second, there are several data points that cannot be explained adequately on this resolution-of-underspecification approach. Among these are the contrasts in 21–22.

- (21) a. *The dress is wet on the clothesline.
b. *Bardo is hungry in front of the fridge.
(22) a. The dress was wet on the clothesline, but is dry now that we’ve put it in the shed.
b. Bardo is (always) hungry in front of the fridge, but forgets about food when he studies in his room.

If 17 is acceptable because *in the car* restricts the sentence’s topic time, then it is not immediately clear why 21a–b are unacceptable, yet essentially the same clauses within

22a–b, featuring explicit contrasts, are acceptable. Similarly, consider the contrast between 21 and ‘descriptive’ cases like 23, which function to present an objective, neutral description rather than make a specific assertion.

(23) The moon is bright in the night sky.

One might treat 23 simply by saying that the sentence topic, the moon, is the entity located in the night sky, as the pragmatically most likely interpretation. But if so, why isn’t 21a acceptable, as saying that the dress is the entity located on the clothesline? Also, this analysis has no explanation for why universally quantified locations are generally fine with states, as in 24.

(24) Dennis is calm no matter where he finds himself.

These problems seem to provide enough reason to investigate an alternative approach. (I return to a more focused comparison between this alternative and Maienborn’s analysis in §2.4.)

2.2. AN ALTERNATIVE, PRAGMATICALLY BASED PROPOSAL. I argue here for a more pragmatically based analysis, following on the basic ideas of Condoravdi 1992 and Rothstein 2005:379–80. In particular, I focus on the intuition that states are ‘tendentially stable’—that is, the usual assumption is that, for some individual in some state, the location is irrelevant: by default, an individual stays in a given state irrespective of location. This core notion is stated in 25.

(25) The default, contextual-knowledge assumption for stative predicates is that, for a given individual *i*, location is irrelevant to *i* being in that state: if *i* changes location, *i* normally ‘carries’ the state along to a new location.

The notion in 25 can be formalized as in 26 (with some additions that will be useful later), for external modification.

(26) THE STATE-LOCATION DEFAULT AXIOM (SLDA): FORMAL VERSION: In sentences where focus on a locative expression is possible, for any individual state *s*, holder *h*, and location *l*, in all DEFAULT_{ck} worlds *w*, if [$\text{HOLDER}_w(s, h) \ \& \ \text{HOLD}_w(s, h) \ \& \ \text{AT}_w(s, l)$], then for all nearby normal_{ck} worlds *w'*, where $l \neq l'$, [$\text{HOLDER}_{w'}(s, h) \ \& \ \text{HOLD}_{w'}(s, h) \ \& \ \text{AT}_{w'}(s, l')$].⁵

Put less formally, the SLDA amounts to 27.

(27) THE STATE-LOCATION DEFAULT AXIOM (SLDA): INFORMAL VERSION: In sentences where focus on a locative expression is possible, in all DEFAULT_{ck} worlds, if an individual is in a state at some location, then that individual would be in that state at any location.

I take the SLDA as part of the grammatical (semantic) system, making allowance for pragmatic knowledge. Specifically, DEFAULT_{ck} worlds are those worlds consistent with normal, commonsense assumptions about states. As defaults, they represent something that can be overridden, where the context strongly implies that the location of the stative predicate in question is variable (the *ck* subscript stands for contextual knowledge). Thus:

(28) Worlds in which the location of a state *s* is saliently variable are not DEFAULT_{ck} worlds.

⁵ I do not flesh out the notion of ‘nearby normal worlds’ here, but they should be like the ‘most similar’ accessible worlds invoked in the Stalnaker-Lewis analysis of conditionals; see Stalnaker 1968, Lewis 1973, and (for general discussion) Kratzer 1991.

(There are other ways to make the SLDA in 26 inapplicable aside from 28; these are discussed below.) Note that this is similar to Chierchia's (1995:207–9) proposal for the ban on locatives with individual-level predicates (ILPs),⁶ as illustrated in 29b (cf. 29a). To simplify somewhat, Chierchia proposes that ILPs involve a generic operator GEN saying that the eventuality in its scope occurs in all locations, parallel to 26.

- (29) a. John knows Latin.
 b. *John knows Latin in his office.

Thus 29b is bad because the relevant restriction, [in (j, s)] (representing *the situation is in John's office*), conflicts with the fact that 'Any situation s where John is or might be located ... is a situation in which he is in his office' (Chierchia 1995:208). It is important to note, though, that there is a difference between ILPs and SLPs with locatives: the pattern in 29a–b with ILPs is absolute, so ILP statives modified by locative expressions are uniformly bad. As exemplified in 9 above, however, SLPs modified by locatives are common. Thus in the discussions below, we must be careful to avoid data using ILPs; we must also eventually explain why the two types of stative predicates display this difference.

My solution for the problem posed by stative predicates with locative PPs is based on Magri (2009), who accounts for 30a–b in terms of scalar implicatures.

- (30) a. #A father of the victim arrived late.
 b. #John is sometimes tall.

Both sentences trigger implicatures (for 30a: the victim has more than one father; for 30b: John is not always tall) that clash with common knowledge about fathers and ILPs. In Magri's grammaticized-pragmatic account, the MISMATCH HYPOTHESIS (2009:258, ex. 33), slightly simplified in 31, exploits this clash to rule such sentences out.⁷

- (31) MISMATCH HYPOTHESIS: If the blind strengthened meaning of a sentence P is a contradiction given common knowledge, then P is odd.

The process of strengthening statements like 30a–b is like applying an *only*-style focus operator, such that P is asserted true, but the relevant alternatives are false. For 30b, then, strengthening has the effect that John is tall at some times but, crucially, not at all times. The mismatch hypothesis can now be applied to cases like 8a–d, given the characterization of the relevant common knowledge in 26, and focus is taken to be on the locative modifier.

- (8) a. *The dress is wet on the clothesline.
 b. *Bardo is hungry in front of the fridge.

To take 8a as an example, the strengthened meaning of this sentence is that the dress is wet on the clothesline and not wet anywhere else. This conflicts with the common knowl-

⁶ Individual-level predicates, or ILPs, are those that are taken to persist through time and do not change for a given individual: *be tall*, *be French*, *be smart*, *know*, and so forth. Stage-level predicates, or SLPs, denote more temporary eventualities and are seen as changeable, as with *be hungry*, *be available*, *be quiet*, or *fall*. The terms originate in Carlson 1977; see Carlson 1982, Diesing 1992, Kratzer 1995, Jäger 2001, Maienborn 2004, and references therein for discussion.

⁷ Example 31 omits the formalized part of Magri's 33, which is not needed for the less formal account here. *Blind* refers to meanings that do not take common knowledge into account. Thus, for example, for the oddness of 30a to be explained by the mismatch hypothesis, its meaning must not incorporate the knowledge that fathers are unique. That is, this knowledge must be kept separate from the semantics-only meaning of 30a—specifically, 'A single father of the victim arrived late'—so that the latter can trigger the (false) implication that there may be more than one father, which then forces the contradiction with this common knowledge, triggering 31. See Magri 2009 and references cited there for more detailed discussion.

edge embodied in the SLDA, by which the dress is wet everywhere. Since this is a contradiction, the sentence is ruled out by 31. Similarly, 8b's strengthened meaning includes Bardo not being hungry in places other than in front of the fridge; this contradicts the SLDA's proposition that he is hungry everywhere, so 31 again excludes this as an acceptable sentence. Many acceptable cases, like 9a–b, are those cases where the salience of the location's variability makes 26 inapplicable, as common knowledge is overridden.

In other cases, 26 is inapplicable for other reasons. In one of these, no focus on the locative expression is possible in 'descriptive' sentences (e.g. *When we arrived, she was deep in thought on the porch*). This is captured in the first clause of the SLDA, which makes the possibility of focus on the locative phrase necessary for 31 to be triggered. This and other examples where the SLDA is inapplicable are discussed in the next section.

2.3. EXAMPLES AND ELABORATION. The SLDA analysis embodied in 25–28 and 31 can be used to account for several different kinds of locative modification of stative predicates. In this section I discuss five kinds, organized according to the reasons why the sentences are acceptable—that is, how they escape the contradiction created by the SLDA (26) and the mismatch hypothesis (31).

SALIENT VARIABILITY. In this type, the context implies that the state in question may or may not be manifested in a given individual in different locations—that is, that the state is variable by location. Thus, since (i) (by 28) the world described is not a $DE\text{-}FAULT_{ck}$ world, (ii) the SLDA in 26 does not hold; therefore, (iii) the sentence's implicature does not clash with the common knowledge represented in the SLDA, and the sentence is not ruled out by the mismatch hypothesis in 31.

Of course, we must specify more fully how variability is implied. There appear to be at least four main types of salient variability contexts, as in 32. (These may overlap, especially time and contrast; I treat time as a subcase of contrast but note it separately here.)

- (32) Main types of salient variability for stative predicates with locatives
- a. Location causes variation (change) in state. (CAUSE type)
 - b. Existence of the state *s* at location *l* is unexpected or unusual. (SURPRISE type)
 - c. Location indirectly indicates a time when the state obtained. (TIME type)
(Special subcase: The state is a description of a set of actions that obtain in a predictable series of occurrences in different locations. (SERIES type))
 - d. Two locations are set in a contrast (which of course explicitly indicates that the default is inapplicable). (CONTRAST type)

Here are some examples.

- (33) CAUSE
- a. The dog is pretty hot on the porch; why don't we let her in?
 - b. Bill was accidentally beamed into this forest, and boy is he confused up in that tree!
 - c. The chair is pretty unstable on this (warped) floor.
 - d. This train is slow on upgrades/hills.
 - e. In New York, I am scared in the subway. (In Paris, I am not.)
(Rothstein 2005, ex. 4a)
 - f. John felt faint in the stuffy room.
(Mittwoch 2005, ex. 25c)
- (34) SURPRISE
- a. (Amazingly,) The baby was quiet on the plane.
 - b. Students (actually) own a lot of houses here (in this college town).

- c. Fred was naked out in the street again yesterday.
 - d. Hmm. Dad has been awfully quiet in the basement all afternoon.
 - e. Even the bravest of our recruits is afraid on this cliff.
 - f. Wow—Al really rocked at that nightclub last night.
- (35) TIME [including SERIES (c–d)]
- a. She was grumpy in New York (but cheered up by the time we got to Boston).
 - b. Alice was (already) tired on the bus (and she seems to be getting sick now that we've arrived).
 - c. She [an athlete] was faster in NY than she was in LA.
 - d. Olivier was brilliant (on stage) in London that year.
 - e. Carol was tired/hungry/nervous in the car. (= 17)
 - f. Sam was a bit distracted at the concert.
- (36) CONTRAST (see also 35a and 35c)
- a. Sam is hungry in front of the fridge, but usually is oblivious to food in his study.
 - b. Our dog is quiet in the city, but noisy at our country house.
 - c. The new Chameleon Car can be red in your driveway and green in the forest.
 - d. He has mood swings; he was sad (this morning) in the garden, but happy in the kitchen (at supptime).
 - e. Cultural differences are weird. I always talk the same way and yet I am funny here at home and I am rude in America. (Rothstein 2005, ex. 12b)

The four sets above all involve contexts where the variability of the state from location to location is salient. Cause readings entail this variability because, if something caused the state to obtain, it necessarily did not obtain at a previous time; since it changed, it could have changed along with being in a new location. Surprise readings entail it (at least in the speaker's belief world) because, while the speaker asserts that the state holds, she also expected it not to, and thus believed that it possibly does not hold in some instances. Thus, likewise, it could hold or not hold in different locations. The effect of surprise is confirmed by the fact that adverbs indicating unexpected situations, such as *even* and *actually*, generally favor locative modification of stative predicates, as 37 illustrates.

- (37) a. Even Fred, who grew up in Minnesota and goes winter camping in his shorts, is cold in Antarctica.
 b. Actually, that four-year-old is pretty self-composed in the middle of Grand Central Station.

Now consider time and contrast. For the latter, as noted by Rothstein 2005 with respect to 36e, the contrast helps indicate why the state is variable (location-dependent). There is either an explicit statement of contrast in location at different times, and thus necessarily variability in the state's location (as in 35a–b), or general knowledge of the context—such as a series of events, as in 35c–d—requires that there be variability. This explanation is supported by the use of *elsewhere* or *in other places*, illustrated in 38, since these expressions explicitly invoke a context in which the state can vary by location.

- (38) The dog is quiet elsewhere.

The time interpretation may also involve an explicit contrast (as in 34a–b), or an implicit one, as in 39a–b.

- (39) a. Why aren't you eating? You were hungry in front of the fridge just now.
 b. Sam was already tired at the starting line.

We may take a temporal interpretation ('X happened during the time that something was in location l') as pragmatically derived from a true external locative expression. It is well known that time and location can often stand in for each other, as 40 illustrates.

(40) We should be more careful of mistakes, {when/where} children are involved. And a temporal interpretation is perfectly possible for garden-variety external locatives with eventive predicates.

- (41) a. She was painting in Paris (but doing sculpture in New York).
 b. Clarissa wrote the book in London. (= 13a)

The temporal interpretation can be derived in contexts where contrast is appropriate. In such a context—where the variability of the state is salient—the state may be taken not to hold in other locations; otherwise there is no communicative function in using the locative. And since individuals are assumed not to be in two places at once, different locations entail different times. This is supported by a science-fiction context like that in 42, where Zarkon is able to be in two places at once (I am indebted to Marcin Morzycki for this example).

- (42) Zarkon was (simultaneously) visible in New York, but practically invisible in Boston.

There is no temporal interpretation here, because Zarkon can simultaneously be in two cities.

DESCRIPTION. External locatives are acceptable with neutral, 'scene-setting' descriptions of situations. This DESCRIPTIVE type is illustrated by the sentences in 43, which have the flavor of a neutral narrator, an observer looking at a scene and giving a snapshot of it.

- (43) a. The citizens were generally happy in the cafés of Paris that year.
 b. Everyone was quiet in the auditorium as Mandela began to speak.
 c. When we arrived, he was deep in thought on the lawn.
 d. The moon is bright in the night sky. (= 23)

I suggest that these are a subtype ofthetic sentences (see Lambrecht 1994, McNally 1998, Erteschik-Shir 2007, and references therein), which can be seen as bare descriptions of an eventuality, rather than as predicating some state (property) of an individual. This may explain the contrasts in 44, where the context in brackets in (b) and *over there* in (c) favor the descriptive function of the sentence.

- (44) a. #Jim is quiet in the car.
 b. [On a postcard, the writer describing the real-time situation to a friend:]
 The birds are singing. I am sitting on a bench watching a squirrel eat an acorn. Jim is quiet in the car.
 c. Hey, Jim is really quiet over there in the car.

Such sentences also seem to be common in real-time sports announcing.

- (45) a. Jeter is relaxed out there at shortstop as he waits for the batter to step in.
 b. Cech is on full alert at his end of the pitch even before Ronaldo crosses the halfway line.

Here are some published examples. For 46, it has been established that the protagonists are on top of a building to watch a compatriot blow up a ship in a harbor. After a wait, the compatriot appears.

- (46) '[The saboteur] walked up the gangplank.
For a moment, they were very quiet on the roof.'

(Dennis Lehane, *Live by night*, p. 212)

Example 47 is a caption for a photo of a dead seal pup and birth lair taken by the author, who describes the circumstances—an almost literal example of taking a picture of a scene.

- (47) 'A ringed seal birth lair washed away by an unseasonably early rain. The pup was dead on the ice.'

(Ian Stirling, *Polar bears*, p. 298)

Further examples are given in 48, where two protagonists make a long, arduous trek through an underground tunnel on Mercury. To pass the time, one of them, Wahram, tries whistling and later helps the injured Swan survive; afterward, they are rescued, and Swan ends up in the hospital.

- (48) a. 'But it had to be said that even as single tunes, inexpertly whistled, the magnificence of Beethoven's music was palpable in the tunnel.'
b. 'Swan was left to think about her stupid foolishness. Her body, emaciated on the bed, swimming under her gaze like someone else ... was resilient.'

(Kim Stanley Robinson, *2312*, pp. 173, 225)

Finally, consider a context of the beginning of a play (suitably altered for tense, these will work also as stage directions).

- (49) The curtain went up, and ...
a. Major Farquhar was perfectly still on the deck of his flagship.
b. The obligatory damsel was already in distress in a castle tower.
c. The colonel was ramrod-stiff in his study.

I suggest that the descriptive type is allowed, *qua* thetic sentences, because no focus is allowed on any particular subpart of the sentence: if there is a focus at all, it is on the whole proposition (Lambrecht 1994:137). The purpose of such sentences is to merely present or paint a picture of the scene, not to make any assertions about any aspect of it. Since no focus is possible, the SLDA in 26 is inapplicable, because its first clause ('In sentences where focus on a locative expression is possible') is unfulfilled. This clause of the SLDA is relevant, and crucial, because the strengthening required by the mismatch hypothesis in 31 is essentially a focusing operation: if the determination of a set of alternatives to the focus is impossible, the sentence cannot be strengthened.

SEMANTICALLY BLEACHED SUBJECTS. When a stative predicate has an expletive subject, or certain types of subject that seem to act like expletives, locatives are acceptable, as in 50 (this type includes weather-sentences, as in 50d).

- (50) a. It's tense in the kitchen right now.
b. All is quiet on the western front.
c. Things are chaotic on the street at the moment.
d. It's rainy in London.

In 50a, there is no individual holder of a state who is normally assumed to be in that state in all locations; in some way, all of these sentences might be paraphrased as 'There is tension/quiet/chaos/rain in location l'. Thus the relevant part 'for any ... holder h' of the SLDA's antecedent is undefined, so the SLDA does not apply. Therefore there is no contradiction to trigger oddness via the mismatch hypothesis in 31.

Nevertheless, there is more to say here (as noted by a referee). One might well treat 50a–b as having a holder of the state—perhaps all relevant entities on the western front, or those on the street—and with the expletive subjects in 50a,d, perhaps the holder is

people or weather, respectively. And if 50a,d are taken as existential sentences along the lines of *There is tension in the kitchen* or *There is rain in London*, the holders might be tension and rain, with the predicate *exist*. For the moment, I assume that on the SLDA approach, the holder in 26 (and individual in 27) can be defined to exclude such ‘generic’ or ‘bleached’ entities in states. (Since this data set does not provide a crucial difference between Maienborn’s and the current analyses, I leave this issue open, but see §2.5 for brief further discussion.)

UNIVERSALLY QUANTIFIED LOCATIVES. Stative predicates are perfect when a modifying locative is universally quantified, as 51 illustrates. This would seem to follow naturally, because there is no implicature that the holder is in the state in some locations but not others.

- (51) a. Ken is quiet everywhere he goes.
 b. Alice is grumpy in all of our branch offices.

However, as Gennaro Chierchia has pointed out to me, sentences like these ought to come out as redundant, since the entailment embodied in the SLDA still holds. The solution to this problem is rooted in the maxim of RELEVANCE, in that there would be no reason to utter such sentences (via the maxim of QUALITY) if the SLDA is in force—that is, given a DEFAULT_{ck} world. Thus, such sentences are informative only if the default is overridden, with the variability of the state in question assumed. If so, the SLDA does not hold, and the sentences are acceptable.

LEXICAL EXCEPTIONS? Finally, there seem to be at least two exceptional predicates: for some reason, *asleep* and *drunk* seem acceptable with locatives most of the time.

- (52) a. The children are all asleep in their beds.
 b. Fred is drunk in some bar across town again.

Alone also goes easily with locatives (see 53a).

- (53) a. Carol is alone in her room.
 b. ?Carol is unaccompanied in her room.

On the one hand, perhaps locatives with *alone* are acceptable because common knowledge tells us that people are not always alone, and location is always relevant to establishing aloneness (since one has to know the area within which one looks for other individuals). So the fact that the location where one is alone may vary is salient. On the other hand, the same ought to apply to *unaccompanied* in 53b, which is not awful, but has a different feel from 53a. So maybe *alone* goes with *drunk* and *asleep* as special lexical cases.

SOME ADDITIONAL EXAMPLES. There are a few other examples that I cannot explain easily on the grounds discussed above, yet seem to be acceptable; despite the lack of an explanation, they seem to be counterexamples to Maienborn’s claims.

- (54) For the first part of the trip, the boys were pretty well-behaved in their motel room.
 (55) (Bill was spouting all sorts of nonsense on the bus on the way back to college.) Well, yeah, he was pretty high on the bus.
 (56) Alice was a bit obnoxious in the conference room this morning, don’t you think?
 (57) ‘[The hotel was a] hideaway for various agents, headed here or there, and best not to see the others, or let them see you. He did hear them, though they were quiet in their rooms, and broke the rule only inadvertently ...’

(Alan Furst, *Dark voyage*, p. 158)

The conclusion from the data in this section is that external locatives are indeed possible modifiers of stative predicates, and so provide no evidence for such predicates representing Kimian states and excluding regular eventuality variables. Locative modification is conditioned by the SLDA in 26, the characterization of default worlds in 28, and the mismatch hypothesis in 31. The relative rarity of commonly found examples is due to the restricted number of contexts, described here, where the SLDA is inapplicable.

2.4. THE FRAME-SETTING ANALYSIS. As noted earlier, Maienborn claims that the sentences discussed in §2.3 can be treated as cases of frame-setting locative modification, thus preserving the idea that stative predicates take Kimian variables instead of standard Davidsonian eventuality variables. Here, I briefly describe her proposal, and then show that the SLDA analysis does a better job of explaining the data. It should be noted that I have no quarrel with Maienborn's analysis of clause-initial frame-setting locatives, and in general I accept her proposals for resolving underspecification in context. The critique offered here is only against using them to explain the types of English postverbal locatives with states examined here.

Recall that Maienborn's schema for frame-setting locatives, in 18 (repeated here), requires a pragmatic resolution to determine the actual object v^x that is located in the region designated by the locative expression.

(18) Frame-setting modifiers

$[\text{TopP PP}_{\text{LOC}} [\text{TopP} \dots]]: \lambda x [\langle \alpha, x \rangle \ \& \ \text{LOC} (v^x, \text{reg})]$

v^x can refer to three things: the sentence topic (often the sentence's subject, but not always); the topic time; or some contextually relevant object relating to the discourse topic. Pragmatics must resolve which of these serves as the locative's object—that is, which item is located in the designated region of space—according to which of the three options is most appropriate in context. If none of them is appropriate, the sentence is unacceptable.

For many cases of locatives modifying stative predicates, Maienborn claims (2005: 289, *inter alia*) that they are frame-setting modifiers that represent temporal readings. Example 33a would be interpreted as saying that the dog is hot at such time as she is on the porch, in 33b Bill is confused during the time he is in the tree, in 34a the baby was quiet during the time she was on the plane, in 35a she is grumpy while in New York, and so on.

- (33) a. The dog is pretty hot on the porch; why don't we let her in?
 b. Bill was accidentally beamed into this forest, and boy is he confused up in that tree!
- (34) a. (Amazingly,) The baby was quiet on the plane.
- (35) a. She was grumpy in New York (but cheered up by the time we got to Boston).

There are several problems with this approach. First, if the PP merely refers to the topic time, we have no explanation for why simple sentences like 4 and 58–60 are much less acceptable, with no special context.

- (4) *The dog is hot on the porch. (cf. 33a)
 (58) *Bill is confused in that tree. (cf. 33b)

Maienborn's analysis must explain why 33a is acceptable with the context it creates, while 4 is unacceptable (without that context). Similarly, the pragmatic resolution mechanisms assumed in Maienborn's analysis do not explain why 34a and 35a are fine with temporal readings, but 59–60 are not (again, lacking the context of the more complex sentences).

(59) *The student was quiet on the chair. (cf. 34a)

(60) *She was grumpy in New York. (cf. 35a)

Maienborn's system does allow possibilities aside from times; *on the porch* may be taken as giving the location of the dog, or of the topic situation (perhaps, for 4, the dog's sensitivity to excessive heat). But if so, the same point holds: since it seems reasonable to say, for example, *The dog on the porch is hot* or perhaps *The dog's sensitivity to excessive heat is located on the porch*, why is 4 unacceptable, while 33a is acceptable (similarly for 59/34a and the other pairs)?

The SLDA approach does predict these contrasts. Reference to being beamed into a tree makes causation salient, the combination of babies and planes (especially with *actually*) makes surprise salient, and an explicit contrast as in 35a makes variable locations salient. All of these defuse the SLDA by bringing in nondefault worlds. Consider also description cases like those in 43, which the SLDA analysis predicts are acceptable.

- (43) a. The citizens were generally happy in the cafés of Paris that year.
 b. Everyone was quiet in the auditorium as Mandela began to speak.
 c. When we arrived, he was deep in thought on the lawn.

Compare 61a–c, with the sentences of 43 altered as appropriate to make an assertion about a particular instance of a state, rather than an observer's neutral description.

- (61) a. *Ken is happy in the café.
 b. *My friends are quiet in the auditorium.
 c. *He is deep in thought on the lawn.

Maienborn's schema has no apparent explanation for why temporal (or other) readings for the locative would result in these contrasts.

A second, related problem comes from universally quantified locatives, which are generally fine with states (see 51, repeated here).

- (51) a. Ken is quiet everywhere he goes.
 b. Alice is grumpy in all of our branch offices.

- (62) a. *Ken is quiet in the backyard.
 b. *Alice is grumpy in the living room.

The contrasting 62a–b are not acceptable (unless one imposes a context favoring causation, surprise,thetic description, etc.). These do not even seem to be treatable as cases of temporal interpretations, as in the sentences seen above; nor does it seem useful to take Ken and Alice, or some topic situation, as the located entity in 51, since the same ought to be possible in 62. There does not appear to be anything in Maienborn's theory of frame-setting locatives to predict the difference.

The third problem for Maienborn's analysis is that it is not clear that English postverbal locatives with stative predicates, as in 34–35 and 43, genuinely have the properties of frame-setting locatives. Syntactically, Maienborn (2001:231) takes this type's position to be high in a sentence (adjoined to TopP, though exact structural details are not crucial), but this clearly does not hold for these English postverbal expressions. Maienborn 2004 admits the possibility that they may instead be adjoined to vP, and in fact data like 63–65 support this, because the standard c-command-based tests (negative polarity item (NPI) licensing in 63b, focus of *only* in 64b, and scope of adverbs like *probably*, *not*, and *often* in 65b) show the locative to be below Tense and Neg heads.⁸

⁸ See Rothstein 2005:378 for similar remarks. Maienborn makes her claim about frame-setting locatives' BASE positions, and so leaves open the possibility that all such locatives, including these English postverbal locatives, are adjoined to TopP. If so, there must be elaborate operations preposing other parts of the sentence

- (63) a. Many children were hungry in the regions I visited.
 b. The children weren't hungry in any of the regions I visited.
- (64) a. She's very quiet in the classroom.
 b. She's only quiet in the classroom, not on the playground.
- (65) a. Bill was naked yesterday out in the street.
 b. With his new medication, Bill probably hasn't often been naked out in the street this year.

Since adjunction to vP (or a position just below that) is standardly taken as the (or one possible) position of external locatives, this shows that syntax cannot be a guide to whether postverbal English locatives are frame-setting or external (though Maienborn 2001:198/207 claims that the readings have distinct base positions). Similar evidence can be given to demonstrate locatives' low position for the other examples given above.

Now consider Maienborn's conception of the semantic properties of frame-setting locatives. Conceptually, she takes them as Chinese-style topics, citing Chafe's 1976 characterization of them as setting 'a spatial, temporal, or individual framework within which the main predication holds'. She identifies at least the three specific properties in 66.

- (66) a. Frame-setting locatives restrict the overall proposition.
 (Maienborn 2004:161)
- b. Frame-setting locatives take negation, frequency adverbs, etc., in their scope.
 (Maienborn 2001:206ff.)
- c. Sentences with frame-setting locatives do not entail the sentence without the locative.
 (Maienborn 2001:194)

It is clear from the postverbal examples above (as Maienborn confirms, p.c.) that the restriction referred to in 66a need not be on the entire proposition; in fact, there must be a smaller range of what can be restricted, since the locatives in cases like 63–65 do not restrict the 'upper' parts of the proposition, such as negation and the epistemic adverb *probably*. The same data show that 66b does not apply to these postverbal cases in English. And 67 is evidence that, at least for temporal readings, 66c does not necessarily hold either.

- (67) She was very quiet in the classroom.
 → She was very quiet.

The example in 67 is in the past tense; Maienborn (p.c.) claims that the entailment fails in the present tense, as in 68, but this is because the most normal reading of 68 is a generic reading, and this is the normal pattern for generics (cf. 69).

- (68) She is very quiet in the classroom.
 NOT → She is very quiet.
- (69) She generally sings in classrooms.
 NOT → She generally sings.

to derive the surface order. This seems implausible, since NPI licensing, focus by *only*, and adverbial scope are fairly well established as being surface phenomena, yet the correct c-command configuration would not obtain after the necessary movements. For example, for the relevant part of 51b the structure would have to be something like (i).

- (i) [Bill probably hasn't often been naked]_i out in the street t_i.

While more elaborate extraction movements might save the analysis, there is considerable evidence against such unconstrained and overly complex derivations. See Ernst 2002, 2014 and van Craenenbroeck 2009 for discussion.

On an episodic reading of 68, the entailment holds.

(70) She is very quiet in the classroom now (but won't be when the teacher leaves).

→ She is very quiet.

In the other cases, the entailments also hold.

(71) The dog is pretty hot on the porch; why don't we let her in? (= 33a)

→ The dog is hot.

(72) Fred was naked out in the street again yesterday. (= 34c)

→ Fred was naked.

The upshot of all of this is that the English postverbal locatives do not show most of the characteristics of frame-setting locatives; the only consistent distinguishing characteristic is that they restrict the interpretation of something in the sentence. Restrictiveness need not arise from frame-setting semantics, however, and may obtain even with garden-variety external locatives in eventive sentences, as 73 illustrates.

(73) George was running on the beach (but not on the roads).

One contextual interpretation of 73, especially given the clause in parentheses, is that George's running happened only on the beach; this is parallel to Fred being naked out on the street, but not necessarily elsewhere (in 72). The sense of restrictiveness is in fact often triggered with statives, since explicit or implicit contrasts are often used to make the variability of the location salient.

Finally, it should be noted that where there is a sense of restriction by a locative expression, the SLDA account has an alternative, pragmatic explanation. Consider sentences like 74a–c (taken from 35).

(74) a. She was grumpy in New York (but cheered up by the time we got to Boston).

b. Olivier was brilliant [on stage] in London.

c. Carol was tired/hungry/nervous in the car.

On the SLDA account, where these are external locatives, 74a–c are acceptable only because something in the context makes the variability of the state across locations salient (e.g. explicit contrast in 74a, or contextual knowledge about stage performances in 74b). As noted above, this allows a temporal interpretation, since we assume that one individual cannot be in two places at once, so the existence of two different locations entails two different times. This creates the sense of domain restriction. In the science-fiction context of 42, any sense of domain restriction comes from the explicit contrast. Note also that in three of the data sets above (description, semantically bleached subjects, and universally quantified subjects), the sense of domain restriction seems to be lacking. These are precisely the types where the variability of a state across locations is not specifically invoked. This difference is to be expected if the sense of domain restriction is a contextual implication rather than something required by frame-setting semantics.

Thus, given the syntactic and semantic facts reviewed above, there do not seem to be solid grounds for taking the locatives discussed here as frame-setters.

To summarize, Maienborn attempts to account for English postverbal locatives with states as frame-setting locatives (primarily with temporal readings), but problems arise. First, the analysis cannot explain why many simple sentences are unacceptable in neutral contexts, while more complex sentences (where contrast, causation, surprise, and other special contexts obtain) are fine. This is because the frame-setting analysis cannot clearly explain why, in a given case, all of the possible readings are excluded. Second, this point holds as well for certain simple sentences, universally quantified locatives.

Third, these English postverbal locatives do not display the usual criteria for frame-setting locatives.

By contrast, the SLDA analysis treats these cases as external locatives, in a simple way. Most of the simple sentences are bad because they lack the necessary contexts to override the SLDA; the more complex sentences supply such contexts. Universally quantified locatives are fine even without special contexts, for reasons discussed above. And the lack of the frame-setting properties in 66 is expected if they are external locatives adjoined low in a clause, with the sense of restriction being pragmatically derived from the existence of a contrast.

2.5. THREE MORE TYPES. Three types of stative sentences with locatives can probably be accounted for on Maienborn's analysis. I examine them briefly here, but note that they reinforce some of the problems noted above. The first type comprises semantically bleached subjects. As noted for 50 (repeated here), when a stative predicate has an expletive subject (or the functional equivalent), locatives are acceptable.

- (50) a. It's tense in the kitchen right now.
 b. All is quiet on the western front.
 c. Things are chaotic on the street at the moment.
 d. It's rainy in London.

Maienborn's proposal for the resolution of underspecification, outlined above, performs fairly well in this case: parallel to the Trafalgar Square example (19), it may be the topic situation that is situated in the location provided. On this account, the fact that such sentences are easy to construct and accept might be due to the lack of a subject referent, since this facilitates the pragmatic calculation of the located object's identity. As noted briefly earlier, however, if the topic situation is generally available as the located entity for frame-setting locatives, why doesn't this option 'save' sentences like 4 or 8a?

- (4) *The dog is hot on the porch.
 (8) a. *The dress is wet on the clothesline.

It seems natural to take 4 in a context where the dog's sensitivity to heat is the topic, perhaps when discussing an aged, infirm dog on a July day; why is 4 not acceptable under these conditions? Similarly, why doesn't 8a work when, say, we have to go to a party in half an hour, so the party dress's being wet is topical? In other words, even though 50a–d are covered by Maienborn's proposals, the price is to cast the net too wide. As it stands, her theory does not explain why all of the available options for the object of LOC are excluded in the unacceptable sentences.

Second, in certain cases with indefinite subjects of stative predicates, locatives are acceptable.

- (75) a. Somebody must have been confused in the press room this morning.
 b. Nobody is perfectly clean in this factory.
 c. Mom? Something's burnt in this pan.
 d. [Hard-boiled detective upon entering, thinking to himself:]
 Something's fishy in this joint.
 e. [News announcer:] Four people are dead in the downtown area tonight, as a truck lost control and ...

Maienborn (p.c.) suggests that her theory can treat all of these cases as frame-setting locatives. But it is not clear that this is tenable, given the properties in 66. For example, 75a entails that someone was confused, and 75e that four people are dead, so the entailment criterion 66c fails. Also, there seems to be no sense of the locative providing a re-

striction (the criterion in 66a). Finally, these locatives have positions low in the clause, as shown by NPI licensing in 76a and the scope of *only* in 76b.

- (76) a. Nobody is perfectly clean in any of these factories. (cf. 75a)
 b. Something's only burnt in THIS pan. (cf. 75c)

Examples 75a–e might be assimilated to those in 50 and treated as noted above, either by (i) defining *holder* in such a way as to exclude such subjects for the SLDA, or (ii) taking them as having a hidden existence predicate, which generally allows locative modification; whatever licenses the sentences in 77 ought to license sentences like 75.

- (77) a. Does life exist on Mars?
 b. There are/exist many wombats in Australia.

In the first case, at least, the account offered here provides a partial explanation for why these kinds of subjects should more easily allow locative modification.

Third, consider stative predicates with mass and plural subjects. Locative modification is possible when the subject is plural (as in 78a), represents masses that can be seen as composed of different submasses (78b), or is singular but representing one individual in a contextually defined set (78c–d).

- (78) a. Men are very tall in some parts of the Sudan.
 b. The water's cold over there, come swim here.
 c. The stock market is up in Tokyo this morning.
 d. (Hey, you weren't such a klutz when we met for lunch last month!)
 Well, yeah, the table wasn't so wobbly in New York.

One can argue that cases like 78 do not involve true locative modification of a stative predicate, but rather an extraposed phrase representing a restriction on the subject quantifier (as does Chierchia 1995:192, n. 2). Though possible, this would not explain why examples like those in 78 are fine, while 79a normally is not unless referring to a single group of men, as in 79b.

- (79) a. #The(se) men are cold over here.
 b. These men over here are cold.

Such sentences probably do not offer clear evidence for external locative modification with stative predicates under the SLDA, if only because they are fine with ILPs (as in 78a) and so differ from the examples provided in §2.3. Still, it is worth noting that they pattern according to the intuition in 25, in that locative modification is possible where DIFFERENT individuals (or submasses) are involved. Though speculative at this point, this suggests the viability of a general, unified analysis of states and locations based on the implicature associated with 26 and 31, following Chierchia and Magri, rather than Maienborn's less flexible, in-principle ban on external locatives with states.

There is a larger point that this leads to, encompassing all of the different readings discussed in this section. Although treating English postverbal locatives as frame-setting modifiers does work in some cases, doing so does not explain the overall pattern: that the acceptable cases are precisely those that imply variability across space for a given individual, or that have no individual for which the state holds, or that make no assertion that allows focus. This pattern is exactly what is predicted by an analysis in terms of external locatives as conditioned by the SLDA.

2.6. SUMMARY AND THEORETICAL IMPLICATIONS. I have proposed an analysis of English postverbal locatives in terms of the SLDA in 26, with associated assumptions and the mismatch hypothesis in 31. The key point is that external locatives may modify stative predicates if and only if the SLDA is somehow neutralized, so that no contradiction

is created. This can be done in contexts of salient variability of location (surprise, causation, and contrast readings, and temporal readings derived from contrast),thetic description, semantically bleached subjects, universally quantified subjects, and a handful of lexical exceptions. By contrast, the frame-setting analysis of these locatives fails in a number of ways. So it seems that they ought to be analyzed as garden-variety external locatives.

This conclusion has several theoretical implications. First, the existence of regular, external locative modification is evidence that stative predicates do not represent Kimian states, but are on par with dynamic predicates in taking a regular eventuality variable. Second, the SLDA analysis provides an explanation for the relative rarity of such sentences, and for why they are common when they have one or more of a set of specific characteristics including theticity, expletive subjects, universally quantified subjects, and overt contrasts. Third, the acceptability of stative sentences with universally quantified locatives points to a potential (if speculative, at this point) virtue of the SLDA account, in that it plugs into a unified system that potentially explains both time and locative modifiers with both SLPs and ILPs. Magri's 2009:271, ex. 70 (simplified and adapted), is essentially as in 80.

- (80) For any individual holder h of a state s , state s , and time t , in all worlds w_{ck} ,
if $\text{HOLD}_w(s, h) \ \& \ \text{AT}_w(s, t)$ then $\forall x: \text{time}(x) [\text{HOLD}_w(s, h) \ \& \ \text{AT}_w(s, x)]$.

Together with 31, 80 is meant to explain the unacceptability of temporal modifiers with ILPs. The only big difference between 26 and 80 is that the latter applies to ALL contextual-knowledge worlds, not just normal (default) ones; as a result, the oddness of ILPs with time modifiers, as in 7d, cannot be circumvented as is allowed for locatives with SLPs. If 80 has a parallel for locations with ILPs (a reasonable possibility, given common knowledge; see Chierchia 1995), we can explain the contrasts between ILPs disallowing both time and locative modification on the one hand, and, on the other, SLPs only disfavoring locative modification, but freely allowing time modification (for which no condition like 26/80 applies at all).

3. MANNER MODIFICATION.

3.1. PREVIOUS ACCOUNTS. Maienborn aims to account for the purported nonoccurrence of manner modifiers with stative predicates by saying that the latter represent Kimian states, which cannot be realized in different ways. She provides examples like those in 16.⁹

⁹ Throughout the discussion below, I use manner-adverb modifiers instead of PPs, as in (i)–(ii).

- (i) a. 'Happy families are all alike; every unhappy family is unhappy in its own way.'
(Leo Tolstoy, *Anna Karenina*, Ch. 1, first line)
b. '[Rumsfeld] was very uncooperative in a petty way ...'
(Robert Draper, *GQ Magazine*, 5/20/09)

- (ii) a. George was quiet, but in a very intrusive manner.
b. Alice resembled her sister in a very unusual way.

Examples like these are often better than those with the corresponding manner adverb; for example, most people take (iiia) as better than (iiib).

- (iii) a. The two brothers resemble each other in an odd way.
b. The two brothers resemble each other oddly.

Nevertheless, since the difference between adverb- and PP-modification is not well understood, I take the conservative tack of showing that manner adverbs can indeed modify stative predicates; if PPs like those in (i)–(ii) are genuine manner modifiers that work the same way as adverbs, the conclusion is all the stronger.

- (16) a. *Carol was restlessly thirsty.
 b. *The table was sturdily wooden.
 c. *Paul has a lot of money thriftily.

She claims that Kimian states cannot vary in their realization as Davidsonian states can, and so they disallow manner modification. Katz (1997, 2003, 2008) proposes a different treatment, saying that stative predicates have no eventuality variable at all, thus accounting for the examples in 7 because the manner adverbs require such a variable.

- (7) a. *John resembled Sue slowly.
 b. *She desired a raise enthusiastically.
 c. *They hate us revoltingly.
 d. *She was slowly tall.

As has been noted previously (Mittwoch 2005, Rothstein 2005), for many proffered examples of this sort there are lexicosemantic clashes that explain the unacceptability easily. In both 7a and 7d, for example, the predicates *resemble* and *(be) tall* denote states that are normally stable and do not change over time, while *slowly* necessarily describes a rate of change over time. Thus these examples have nothing to do with a restriction on manner modification per se, but rather with a simple semantic incompatibility between the particular predicate and this adverb. In a similar way, the agent-oriented adverbs are bad in 81a–b not because they function as manner adverbs, but because agent-oriented adverbs require that the agent have control over an eventuality (in the sense of at least being able to choose whether to enter into it, if not to control it in other ways; see Ernst 1984, 2002); neither *resemble* nor *(be) eager* permits such an interpretation.

- (81) a. *She is cleverly eager to do her job.
 b. *Harold resembles his sister intelligently.

In 81a (with *cleverly* interpreted as a manner adverb, not with the clausal reading in ‘she was clever to be eager’, but ‘she was clever in the way she was eager’), we cannot accept *cleverly* given the usual assumption that eagerness is a mental state that simply occurs, without the experiencer’s control (though 81a might be acceptable if it refers to her deliberate manifestations of cleverness). Similarly, we do not normally think of a resemblance, as in 81b, as being controllable. Still, in a science-fiction context, if Harold is a shape-shifter and can make himself resemble other people in various different ways, 81b seems all right. These points explain why whole subclasses of manner adverbs are highly restricted with stative predicates: they require semantic properties, such as change over time and agentivity, that are often absent from states.

Katz points out some apparent cases of manner modification, such as those in 82 (his 2003:467, ex. 29).

- (82) a. Peter knew Maria well.
 b. Lisa firmly believed that James was innocent.
 c. Mary loves Max passionately.

I also largely ignore examples involving PP predicates modified by manner adverbs, as in (iv). I can detect no important difference between such cases and those where the stative predicate is represented by an adjective.

- (iv) a. ‘Robigus, Lord of Fungus, is still furiously among us, but these days he’s collecting his sacrificial spoils personally.’
 (New York Times, 5/26/09, p. D1)
 b. ‘Madame Chiang ... was also deeply involved in the endless maneuverings of her husband, Chiang Kai-Shek, who was uneasily at the helm of several shifting alliances with Chinese warlords ...’
 (New York Times, 10/24/03)

Katz analyzes 82a–c as involving (respectively) degree modification, special ‘adverbial collocations’, and covert modifications of a collection of dynamic events associated with a state. In what follows I concentrate on other types of examples that cannot be analyzed in these ways, and I return to Katz’s suggestions for examples like 82a–c in §3.5.

3.2. PRELIMINARIES. Before presenting an analysis, it is necessary that I look briefly at the nature of manner readings and of other readings that are sometimes mistaken for manner. The main criterion used here for manner readings is the possibility of a paraphrase with ‘in an X manner’ or ‘in an X way’, along with the judgment that modification is restrictive, picking out a subset of the eventualities denoted by the predicate. By these criteria, a phrase like *sing quietly* involves manner modification because one can say ‘She sang in a quiet way’, and events of singing quietly form a subset of events of singing; the same holds for *quietly elegant*: ‘She is elegant in a quiet way’ where this describes a subset of states of being elegant. There is no standardly accepted view of what a manner actually is, or how it should be represented formally, though one option is to employ a manner variable *m*, as exemplified in 83b for 83a.¹⁰

(83) a. She sang quietly.

b. $\exists e$ (Sing (*e*) & Agent (*e*, she)) & $\exists m$ (*m* (*e*) and Quiet (*m*))

The precise formal representation of manner adverbs is not relevant to the issues taken up here; for discussion, see McConnell-Ginet 1982, Parsons 1990, Eckardt 1998, Geuder 2000, Ernst 2002, Schäfer 2005, Piñon 2007, Morzycki 2011, and Maienborn & Schäfer 2012.

Manner adverbs are sometimes confused with other types when they modify stative predicates, especially adjectives. This is important, among other reasons, because Maienborn, Katz, and others discuss apparent examples of manner modification of stative predicates, which, they argue, are not true examples of this type of modification; in some of these cases I believe they are mistaken (see below), but for other cases the examples must genuinely be excluded.

¹⁰ A commonly seen representation for manner adverbs would treat them as predicates directly modifying an event variable, as in (ii) for (i).

(i) She sang quietly with her brother on Thursday.

(ii) $\exists e$ (Sing (*e*) & Agent (*e*, she) & Quiet (*e*) & With (*e*, her-brother) & AT (*e*, Thursday))

This representation dates to the early days of Davidsonian work on adverbs, but recent evidence has exposed some problems and opened the way for other analyses. First, representations like (ii) do not properly make a distinction between the two event-related readings of subject-oriented and evaluative adverbs, which have both a clausal reading and a manner reading, shown in (iii–b) and (iv–b), respectively.

(iii) a. Karen cleverly fixed the hinge.

b. Karen fixed the hinge cleverly.

(iv) a. Strangely, Jim (suddenly) looked at us.

b. Jim (suddenly) looked at us strangely.

Simple representations like ‘Quiet (*e*)’ for (ii) or ‘Strange (*e*)’ for (iv) do not capture this distinction, so representations that are worked out in more detail often abandon them. Second, there is some evidence that manner adverbs may take scope, albeit rarely, as in (v) with two manner adverbs (from Schäfer 2008); this cannot be captured with a representation along the lines of (ii).

(v) Peter painstakingly wrote illegibly.

Third, there is some evidence that manners should be represented as variables unto themselves, such as cases of manner anaphora (Landman & Morzycki 2003). For further discussion of these issues, see Ernst 2002, Piñon 2007, Schäfer 2008, and Kubota 2015.

Example 84 provides perhaps the most common type, that of adverbs expressing a degree by means of an adverb from another lexical class (especially evaluatives: see Rawlins 2003, Morzycki 2005).¹¹

- (84) uncannily quiet,¹² brutally hot, remarkably funny, frighteningly close, disappointingly weak, unpleasantly loud, deeply frustrating, scarily unprepared, outlandishly optimistic, intimidatingly impressive

Here I use a paraphrase criterion and term it a case of degree modification if the paraphrase 'ADJ to a degree that is ADV' (using the adjectival form of the adverb as 'ADV') is appropriate.

Example 85 shows instances of domain adverbs, not manner adverbs.

- (85) symbolically violent, politically astute, economically challenging

Domain adverbs can be distinguished from manner adverbs by the fact that they cannot themselves be modified for degree, as 86 illustrates.¹³

- (86) The plateau is old (*very) geologically, but not in terms of human settlement.

Example 87 provides cases where an apparent manner adverb is actually its clausal homophone, a possibility noted earlier.

- (87) a. Capuchin monkeys are famously shrewd and resourceful primates.
 (National Geographic, May 2011, p. 136)
 b. Sharks are notoriously carnivorous.
 c. It was an obviously invented situation.

Again, the use of an appropriate paraphrase is the usual criterion for excluding a manner reading in such cases, so that one says 'It is famously the case that capuchin monkeys are shrewd and resourceful' (not 'capuchin monkeys are shrewd and resourceful in a famous way') and 'It is obvious that the situation was invented' (not 'the situation was invented in an obvious way'). In addition, in examples like 87a–c the set of eventualities denoted by the whole phrase is identical to, not a subset of, that denoted by the adjective itself.

3.3. AN ANALYSIS. The tack I take here was previously explored in a limited way by Mittwoch (2005) and Geuder (2006). The relevant generalization can be stated as in 88.

- (88) a. Possibilities for manner modification generally increase with the conceptual complexity (multidimensionality) of a predicate.
 b. Stative predicates are less conceptually complex than dynamic/eventive predicates.

Generalization 88a is plainly implied in Mittwoch 2005 and Geuder 2006. As for 88b, although I have never seen it formulated in print, it is clear from the literature on aspectual types (e.g. Vendler 1967, Dowty 1979, Bach 1986, Smith 1997); 89 is a list of properties of dynamic predicates that are absent in stative predicates (not all dynamic properties have all of these).

¹¹ In many other cases that have commonly been classed as degree modification, such as *brutally hot*, *fiercely hostile*, and the like, I do not believe it is clear that degree modification is primary: once one admits the possibility of manner modification of adjectives, one can interpret such cases as manner (e.g. 'She was hostile in a fierce manner'), with the (undisputed) degree reading being a pragmatic inference from this, where the adverb is only interpretable as holding for high degrees of the state in question. In the interest of clarity, however, I avoid such examples here.

¹² See Katz 2008:231 and Mittwoch 2005:84 for further discussion of *uncannily*.

¹³ See Ernst 2002, 2003 for discussion of this adverb class and others to follow. For general discussions of adverb classifications, see Ramat & Ricca 1998, Ernst 2002, Bonami et al. 2004, and Maienborn & Schäfer 2012.

- (89) Common properties of dynamic predicates lacking in stative predicates
- a. change through time
 - b. beginning point
 - c. endpoint
 - d. causation/causal agent
 - e. result

In the common division of dynamic predicates into processes, accomplishments, and achievements, the latter two by definition have endpoints and causation, and all three at least potentially involve change through time. By this list alone, many types of manner modifiers are ruled out or severely restricted, as noted earlier, such as agent-oriented manner adverbs like *wisely* and aspect-manner adverbs like *slowly*. Nevertheless, there are additional properties of stative predicates that come into play for modification. In what follows, I examine a range of adverb types, in order to show how a greater conceptual complexity in a predicate provides more options for manner modification. Most of the data involve adjectives, though some stative verbs are invoked as well; one eventual goal will be to explain why manner modification is more restricted with verbs than with adjectives.¹⁴

MANNER MODIFICATION OF ADJECTIVES. I do not claim that the classification given here is complete, or that the categories are sharply divided, or that this is necessarily the most revealing way of classifying. The ultimate aim for the moment is simply to show that manner modification of stative predicates is actually fairly common and easily productive given the right contexts,¹⁵ and to start on understanding the semantic properties that exclude it or make it possible.¹⁶ (As noted above, degree readings must always be excluded in the data; in all cases examined here there is also, or only, a manner reading.)

¹⁴ I assume along with Engelberg (2005:338–43) that a copula is not necessary for an adjective to represent a full-fledged state, contra Maienborn 2003a. For discussion of aspect including the relative simplicity of states, see the references noted above, as well as Rothstein 2004, Ramchand 2008, Rothmayr 2009, and references they cite.

¹⁵ Some of the examples provided here require more of a context than is often the case in linguistics papers. To some extent I believe this is so because different ways of manifesting states are often actually quite subtle—things one might not immediately notice upon observing the state, as compared to what one can see from observing a dynamic event. Also, combinations of manner adverbs with stative adjectives occur most easily in written, journalistic style, where a writer is trying to pack a lot of information into a small space, and to do so in a vivid and punchy way. This is especially true of arts reviews, a particularly happy hunting ground for examples.

¹⁶ In neutral contexts it is generally much easier to accept manner adverbs when they precede the adjectives they modify (in an AP) than when they follow (in a VP but outside AP), as in (i).

- (i) a. The song was hauntingly familiar.
b. ??The song was familiar hauntingly.

But such cases are possible with contrastive focus (and prosodic stress) on the adverb.

- (ii) a. He's not only loud, he's loud obnoxiously.
b. [In the context of the well-known psychological ploy:]
He's definitely aggressive, but at least he's aggressive passively.
c. Yes, she's quiet, but the annoying thing is that she's quiet ostentatiously.
d. 'Actually, I favor some variation of the way the Chinese deal with it. Money fines would be ...
It is easiest to be rich quietly. In the shadows.'
(http://www.democraticunderground.com/discuss/duboard.php?az=view_all&address=389x4948904)
e. 'If you are under 25 and single, you are single simply. If you are over 40 and single, you are single with an explanation. You have a story to tell about it.'
(<http://www.datinglife.com/>)

The first large grouping of manner adverbs with stative predicates involves general requirements of semantic compatibility as restricted by the adverbs' connection to speakers or subjects. There are three subgroups. In the one making reference to speakers, a large number of adverbs come from the evaluative adverb subtype, where the core usage of *oddly*, *mercifully*, *tragically*, and so on is to modify a whole clause in terms of a speaker's evaluation of some situation. As noted above, the clausal and degree readings are common, but evaluatives do partake of true manner modification, as in 90a.

(90) EVALUATIVE:

- a. pleasantly archaic, obnoxiously idiosyncratic, eerily reminiscent, confusingly different, repellently wicked, tediously slow, mysteriously beautiful, disturbingly weird, comically menacing, boringly effective, appealingly melancholy, annoyingly dismissive, unpredictably deficient, oddly rearranged
- b. bleakly quiet, (a) grimly blank (fortress wall), (a) grimly informative (experiment)

Examples are provided in 90b where the adverb is not of the dedicated evaluative subclass, but where a pure manner adverb functions to describe the feeling induced in the speaker—thus matching the function of evaluatives. The relevance of such examples is that their acceptability depends less on a strict semantic compatibility between adverb and adjective. As always, a full context makes many of these cases easily acceptable, as 91a–e show.

(91) a. '[*The Dark Knight*] is creepily elegant.'

(Gardner Dozois, 'Summation: 2008', p. xl, in *Year's best science fiction*, ed. by Dozois)

- b. 'The planes make a weirdly musical diatonic hum, like bagpipes playing two drones at once.'
(Neal Stephenson, *Cryptonomicon*, p. 209)
- c. [A castle's tower is] bleakly formidable
(Tadgell, *The West from the advent of Christendom to the eve of Reformation*, p. 561)
- d. 'To see the sun seeping through the multiple fissures of this building, which in its massive simplicity is otherwise so solid, is mysteriously beautiful.'
(*New York Times*, 5/18/03, p. 44)
- e. 'Kerouac looked ... quietly intense and appealingly melancholy'
(*Smithsonian*, 9/07, p. 116)

The second subgroup uses adverbs of the agent-oriented subtype. In their clausal usage, these adverbs describe the quality of an agent (usually the subject) in terms of the latter performing or not performing the event in question; in their manner usage, they describe the agent on the basis of the way s/he performed it: greeting a visitor politely, for example, as opposed to rudely or perfunctorily. Examples are given in 92, with representative citations in 93.

(92) AGENT-ORIENTED: politely attentive, stolidly efficient, quirkily personal, inventively elaborate, goofily educational, exuberantly eccentric, sternly judg-

I have no ready explanation for this focus requirement, though it may be related to a similar contrast between preverbal and postverbal adverbs, where only the latter can easily be focused.

- (iii) a. ??She LOUDLY played the trombone.
- b. She played the trombone LOUDLY.

(See Ernst 2002 for discussion of this point.) In any event, I do not believe that this should affect the arguments here that manner adverbs do modify stative adjectives; some additional explanation for cases like (ib)—and for why some examples do exist, as in (ii)—must be found.

mental, obsessively cheerful, graciously hospitable, intelligently funny, elegantly unobtrusive, aggressively cheerful, spunkily innovative, spitefully hostile, obnoxiously gentle, ruthlessly devoted, discreetly attentive, charismatically dynamic, unpretentiously welcoming, naively optimistic, politely insistent, rudely dismissive, arrogantly slow

- (93) a. 'Bernini spent his entire life in Rome and, not surprisingly, he was chauvinistically Roman.' (Smithsonian, Oct. 2008, p. 81)
 b. 'What was most precarious at the time was one's status within the murderously arbitrary and totalitarian Soviet regime.' (Archaeology, Jul/Aug 2003, p. 52)
 c. [In the time of Thomas Aquinas] 'the entire corpus of Aristotle's works became available [with commentaries by] Alfarabi, Avicenna, and the brilliantly disturbing Averroës' (D'Epiro and Pinkowish, *Sprezzatura*, p. 87)
 d. 'But in those days, Roman Catholic religious life was cold, arid, and perversely strict.' (Economist 3/20–3/26/04, p. 92)

(Some adverbs can function as either evaluative or agent-oriented.) Agent-oriented adverbs often partake of a particular rhetorical function of denying or reinforcing a typical social property of the adjective's state, commonly found in fiction or journalism where evocative images are valued. Thus in 94, in *politely insistent*, being insistent is more likely to be taken as negative than positive, so modifying it with *politely* creates an interesting contrast; in a similar way, *nastily belligerent* refines the negative evaluation of a warlike quality.

- (94) SOCIAL CRITERIA: politely insistent, nastily belligerent, rudely dismissive, benignly judgmental, militantly mild, smoothly professional

The third subgroup is also oriented toward subjects and comprises mental-attitude adverbs.¹⁷ Typical examples are provided in 95–96.

- (95) HOLDER'S MENTAL ATTITUDE: cheerfully selfish, proudly assertive, heedlessly joyous, cheerily efficient, defiantly female (perspective), paranoiacally suspicious, calmly busy, happily sore, smugly delighted, exuberantly hairy, playfully grotesque, antagonistically opposed, jovially competitive, delightedly liberated
- (96) a. 'That Sunny also wasn't allowed to ask girls out made Laura guiltily glad, because she knew he had a crush on her.' (Richard Russo, *That old Cape magic*, p. 96)
 b. an 'icily competent PR liaison' (Slate website, 7/26/09)
 c. 'Dr. William C. Minor, surgeon-captain, U.S. Army, a forlornly proud figure from one of the oldest and best-regarded families of New England, was henceforth to be formally designated as a "certified criminal lunatic."' (Simon Winchester, *The professor and the madman*, p. 21)

¹⁷ Some people do not consider these to be genuine manner adverbs; for example, when they refer to a mental state that is not observably manifested in an event or state, they sometimes do not fit the criterion of use in the paraphrase 'in a(n) ADJ manner'. However, they often do allow such paraphrases, especially with *way*, when the attitude simultaneously describes the mental state alone cooccurring with the eventuality. In any case, what is most at issue is that the adverb functions to restrict the set of stative eventualities in a way that the use of Kimian states à la Maienborn, at least, does not predict.

- d. ‘But two pale, heavysset clerks ushered me in such a determinedly friendly fashion that I had not the courage to protest.’ (Ursula Leguin, ‘Confusions of Uñi’, in Haber and Strahan, *Best science fiction of 2003*, p. 137)¹⁸

The significance of subject-oriented adverbs (both agent-oriented and mental-attitude) for the present discussion is that they require an agent or an experiencer, if only by plausible implication in context. This creates openings for manner modification with stative predicates of this sort, while predicates lacking this dimension disallow manner adverbs.

The second, diverse grouping of manner adverbs does not refer to subjects or speakers; their ability to combine with stative predicates depends primarily on the (narrow) semantic properties of the predicates themselves. First, adverbs like (*un*)*evenly* and *patchily* describe the physical distribution of (subparts of) a pattern that can be described by the adjective.

- (97) PHYSICAL DISTRIBUTION: evenly blue, patchily opaque, smoothly luminous, regularly curvilinear, randomly distributed, complexly dense, seamlessly ubiquitous, blotchily white, randomly variegated, randomly distributed

Such cases must have an adjective that is interpretable as distributed in space (or sometimes time). However, this interpretation may come more from context than from core properties of the predicate, as in 98.

- (98) ‘[T]he atoms that were part of our bodies for a time will move on, and be incorporated ... perhaps on other planets in subsequent galaxies. So we are diffusely reincarnate throughout the universe.’

(Kim Stanley Robinson, *Years of rice and salt*, p. 756)

Second, a manner adverb may denote a physical, perceptual, or otherwise narrowly circumscribed property (or ‘dimension’) associated with the adjective it modifies. In 99a, for example, for *flexibly strong*, strength derives from (or coexists with) flexibility; in *loudly insistent*, volume restricts the way in which someone insists; in *massively stable*, stability comes from mass; in *sinuously elegant*, elegance comes from a property of lines; and in *sweetly redolent*, a smell is of a certain type. Additional ‘dimensional’ examples are given in 99b.

- (99) DIMENSIONS:
- a. flexibly strong, loudly insistent, massively stable, sinuously elegant, sweetly redolent
 - b. stiffly erect, dully reflective, violently carnivorous, gracefully slender, fluidly graceful, grittily wind-blown, metallicly cacophonous, goosily delicious, humidly hot, glassily bejeweled, curvaceously flamboyant, grittily physical, tartly refreshing, expensively flamboyant, stiffly formal, gauntly handsome, lankily erect, gorgeously pregnant, jerkily graceless,

¹⁸ Example 96d is of a type that appears to have spawned a related (possibly homonymous) meaning that can be applied to nonsentient beings, with a reading along the lines of ‘will not change’.

- (i) a. ‘Reduced, ferrous iron dissolves easily in water, but oxidized, ferric iron is resolutely insoluble.’ (Lenton and Watson, *Revolutions that made the earth*, pp. 27–28)
- b. ‘Even if it were not covered by a relentlessly hostile jungle, ...’ (Stephenson, *Cryptonomicon*, p. 218)
- c. ‘The Yambuku shuttle must have left for the obstinately silent [headquarters station] by now.’ (Wilson, *Bios*, p. 204)

Other adverbs of this group include *stubbornly* and *doggedly*. It is not clear to me whether these should be taken as true manner adverbs; compare similar examples in 107 below.

raucously gonzo, silently companionable, colorfully striped, farcically loopy, elaborately ugly, starkly beautiful, ornately luxurious, stuffily warm, trendily attractive, elegantly evil, floridly argumentative, goofily educational, darkly vacant (windows), (windows glowing) warmly yellow, coldly brilliant (moon), sexlessly debonair, bleakly awakened

In each case, the adjective denotes a state that is relatively complex in some way, even if it is physical (like air/atmosphere in *stuffily warm*, involving both temperature and perceived 'feel'). Sartorial flamboyance can be achieved with expensive or inexpensive clothes; one can present educational material in a dry way or its opposite (*goofily educational*); one's rhetorical style can vary considerably (*floridly argumentative*), and so on. Often, as the examples in 100a–d illustrate, a particular context makes an unlikely combination work well, if not evocatively.

- (100) a. 'He ... mov[ed] onto the mats of a richly spare room with a painted scroll hanging by a cedar post.' (Martin Cruz Smith, *December 6*, p. 93)
 b. 'Khurusch was a fatly muscular man in a checked shirt.'
 (China Miéville, *The city and the city*, p. 29)
 c. 'I'm perched on a ... tower overlooking a scruffily majestic *Ochroma pyramidale* tree of about the same height.'
 (National Geographic, May 2011, p. 136)
 d. ... bulbously dynamic Gaudí furniture (cf. 'the bulbous dynamism of Antoni Gaudí's designs' in Paul Greenhalgh, ed., *Art Nouveau 1890–1914*, p. 40)

In one particular subtype, the adverb is derived from a noun and can be paraphrased as 'in the manner of a(n) N'.

- (101) toadily phlegmatic, heroically Falstaffian, robotically consistent, Daliesquely abstract, boyishly enthusiastic, youthfully energetic, felinely lithe, Homerically violent

Another type is especially common in arts reviews, where a writer needs both to pack a lot of information into a small space and to describe nuances of aesthetic judgments in a colorful way. Thus an actor may be *craggily handsome*, a play *darkly* (or *grossly*, or *obscenely*, or *ironically*, or *elegantly*, ...) *funny*, the solution to a plot *hilariously simple*, and so on (see 102); 103 provides a specific example where, again, the context creates enough background to allow a combination that might otherwise seem impossible.

- (102) 'AESTHETIC' CRITERIA: boyishly handsome, darkly beautiful, grossly funny,
 (a) spikily independent (young woman), boozily affectionate, hilariously simple

- (103) '[O]ld Cartwright has been the office bully, a snoop and a henchman, so few at the paper mourn him when he is found rather messily dead.'

(<http://www.edwardoloughlin.com/>)

The third large grouping may be called INDEPENDENTS. Manner adverbs of the third grouping modify states without involving subjects or speakers, yet they find other ways to be relatively independent of the semantic properties of the adjective. In the first subtype, the adverb indicates the way in which the state is manifested on a scale of (c)overtiness, or the holder's attitude toward that manifestation (see 104).

- (104) MANIFESTATION: openly contemptuous, quietly demonstrative, brazenly ambitious, ostentatiously wealthy, frankly interested, studiously unkempt, unobtrusively attentive, nakedly obvious, overtly theatrical, transparently eager, visibly active, outspokenly liberal, ostentatiously formal, unashamedly nationalist, flamboyantly attention-seeking, painstakingly beautiful

(These adverbs may overlap in function with subject-oriented adverbs.) The second subtype includes a small number of adverbs that divide the adjective's properties between more and less prototypical ones and that are usable quite generally where prototypes are salient.

- (105) **PROTOTYPICALITY**: classically feminine, characteristically democratic, prototypically avian, atypically athletic

The third type exploits exocomparative adverbs like *similarly* (see 106), and the fourth uses adverbs that describe the distribution of a state over time (see 107).

- (106) **EXOCOMPARATIVE**: similarly intricate, differently dangerous, identically intense (reactions)
 (107) **'TEMPORAL ADVERB'**: consistently attentive, enduringly rich (musical heritage), lastingly penetrating (smell)

(It is not clear to me that those in 107 should be treated as true manner adverbs, and so I put them aside from further consideration here.) What is important about these subtypes is that the restrictions on their use are less tied to the specific semantic properties of the stative predicate; they merely require that the predicate in question be something that can be overtly manifested (or in some cases, that its manifestation can be controlled by an agent), that it involves a prototype, or that—quite broadly—its manifestation can vary. As with subject-oriented adverbs, this provides options for manner modification that simpler predicates do not have.

3.4. THE EFFECT OF DEGREES OF MULTIDIMENSIONALITY. The discussion above suggests that, in general, the conceptual complexity of a given stative predicate and the options that adverbs offer (e.g. modifying the external manifestation of a state) allow a wide range of manner-modification options. I now look at two types of contrast that can be explained by invoking the relative semantic complexity of two types of predicates, with the more complex one allowing manner modification and the simpler one barring it. This adds a broader study of the effect of semantic complexity on state modification to the narrower but more detailed study of Geuder 2006.

Examine first the contrast between multidimensional-social vs. unidimensional-physical adjectives. The former group is freer; among other things, social predicates more easily allow adverbial modification based on human agency (control over an eventuality), human attitudes (toward an eventuality), and the possibility of (humans) manifesting the relevant property more or less openly. Representative lists of the two groups of adjectives are provided in 108–109, respectively.

- (108) belligerent, wicked, polite, dismissive, attentive, eccentric, judgmental, funny, cheerful, patronizing, hospitable, hostile, devoted, loyal, welcoming, optimistic, insistent, strict, intelligent
 (109) wet, tall, harsh, loud, black, hot, wide, spherical, diffuse, triangular, odorous, slack, straight, rough, bright, hard

(Some of the adjectives in 109 have metaphorical uses in the social domain, which are to be ignored except where noted below.) A number of revealing contrasts can be constructed based on the types of adverbial modification reviewed earlier.

Some evaluative adverbs work with both types, as illustrated in 110; many of these are adverbs that in essence indicate whether the state's effect is perceived as good or bad. As 111 shows, however, more specific adverbs (those going beyond simple good/bad judgments) work better with social predicates.

- (110) a. pleasantly {polite, attentive, eccentric}
 b. pleasantly {wet, hot, rough}

- (111) a. comically {devoted, eccentric, optimistic}
 b. *comically {tall, black, triangular}

The social scenarios invoked in 111a might involve an overeager servant tripping over her feet for *comically devoted*, or a naive traveler bouncing around and singing despite dangers for *comically optimistic*; in either case the state's many different possible manifestations by different types of actions provide the necessary multidimensionality. The same is clearly not true for *tall*, *black*, or *triangular*; *comically tall* is acceptable but only on a degree reading (e.g. *She is so tall as to be comical*), not a manner reading.

Agent-oriented adverbs require some reference to an agent and so work far less well with the physical predicates in 109.

- (112) a. intelligently {funny, loyal, strict}¹⁹
 b. *intelligently {wet, rough, spherical}

In certain cases they may work with the latter adjective type, but only if the state has more dimensions to modify than those in 112b, for example, *diffuse* in 113 (implying that the precise pattern of diffusion shows the intelligence of whoever created it) or *cacophonous* when applied, say, to an avant-garde composer whose music displays a clever intellectual patterning.

- (113) intelligently {diffuse, cacophonous}

What is crucial is that both of these predicates allow some complexity of physical or musical patterns, while *wet*, *rough*, and *spherical* in 112b do not, and in context can be predicated of things taken as created by some intelligent being.

Mental-attitude adverbs, like evaluatives, sometimes allow modifying the simpler type of adjectives, as 114 illustrates, where a sentient being can be equally happy about being loyal or being wet.

- (114) a. happily {loyal, eccentric, hospitable}
 b. happily {wet, loud, hot}

But in other cases the mental attitude involved is impossible, with adjectives normally predicated of nonsentient entities.

- (115) a. calmly {polite, attentive, judgmental}
 b. *calmly {hard, triangular, slack}

The three types just discussed allow modification based on properties of speakers or subjects; by contrast, the adverb class referred to above as 'dimensional' uses a more direct connection between the adverbial and adjectival semantic properties in a given case. Thus in 99a *flexibly strong*, both words denote physical properties; *sinuously* refers to shapes that help define a pattern as elegant; *sweetly* in *sweetly redolent* describes an olfactory type within the smell referred to by *redolent*. There must therefore be a closer match between dimensions than with subject- or speaker-oriented adverbs, and so the group in 108, with more dimensions, is more flexible in this regard. Examine 116, for example.

- (116) a. a floridly {argumentative, drunk, polite, belligerent} person
 b. a floridly {decorated, elegant, painted} wallpaper
 c. *a floridly {tall, triangular, rough, hard} table

Floridly denotes a manifestation that is exaggerated and colorful, something possible with the human performances invoked in 75a or with physical objects with enough complexity to meet these criteria (116b), but not predicates for simple physical charac-

¹⁹ Cf. 'Intelligently funny tees' at <http://www.headlineshirts.net/>.

teristics (116c). In a similar way, *goofily* requires a certain type of human humor, and so is restricted to (the more relatively complex) predicates that allow for this (see 117).

- (117) a. *goofily* {eccentric, funny, insistent}
 b. **goofily* {hard, hot, spherical}

Finally, some adverbs of the ‘manifestation’ type require that the predicate they modify be manifestable either overtly or covertly; social predicates can be so manifested, while simple physical predicates usually must be overt. Thus combinations with the former will be more common, and we see contrasts like that in 118.

- (118) a. *openly* {belligerent, hostile, judgmental}
 b. **openly* {loud, wide, odorous}

Others, like *studiously*, *painstakingly*, and *outspokenly*, require a sentient being who has some control over the way the state is manifested (among other restrictions); thus, as with the agent-oriented type, the more complex social predicates are usually better (though physical predicates are acceptable if they fulfill this criterion).

- (119) a. *studiedly* {casual, unkempt, oblivious}
 b. **studiedly* {triangular, hard, wide}

For the second contrast, I return to the question of why stative verbs like *resemble*, *own*, and *love* allow manner modification relatively rarely, while stative adjectives do so more often. Consider the main types of stative verbs, those with experiencer arguments (examples in 120a), those that (to a large extent) denote stable, abstract, or perceptual relationships (120b), or those that denote stable social relationships (120c).

- (120) a. love, fear, want, know, prefer
 b. resemble, match, reflect, differ, instantiate, belong, consist, appear, seem
 c. own, owe

As noted earlier, these verbs are like all stative predicates in lacking many of the properties of eventive predicates, as listed above in 89. Yet they also permit state modification in some cases, as the examples in 121–122 show.

- (121) a. ‘He knew dirt, though, knew it exactly, bodily.’
 (Ursula LeGuin, *Birthday of the world*, p. 261)
 b. ‘[T]he investigators changed the tasks so that the member of the choice pair that matched the sample no longer matched it identically, but only matched it in terms of conceptual class.’
 (Tomasello and Call, *Primate cognition*, pp. 114–15)
 c. ‘The two disparate realms of physics not only meet but mesh harmoniously.’
 (*Discover*, Feb. 2009, pp. 59–61)
 d. ‘Barack Obama—whose first crisis took hold before his election and dwarfs any of his predecessors’ since Franklin D. Roosevelt’s, which it chillingly resembles, ...’
 (*New Yorker*, 3/9/09)
 e. ‘I wanted [the dog] ferociously, indignantly, unbendingly—blue dapple, kinked tail, and all.’
 (Mary Doria Russell, *Dreamers of the day*, p. 23)
 f. ‘The film overlaps oddly with the plot of *The Seagull* ...’
 (*New York Times*, 5/22/11)
 g. [Introducing a list of perennially losing sports teams:] ‘These teams suck. They suck epically, inventively, in all kinds of ways.’
 (Rob Tannenbaum, ‘The 20 worst sports franchises of all time’, *GQ*, Oct. 2013)
- (122) a. She belongs to the club {tenaciously/fortuitously/(only) casually}.
 b. He resembles a movie star stereotypically, with a straight nose, blindingly white teeth, and the rest of the Hollywood package.

- c. After his head injury, he recognized his relatives {disjointedly/only fragmentarily}.
- d. She may own a lot of properties, but unlike some people in this town she owns them honestly!
- e. He owns the porno store unabashedly.
- f. The snow leopard has not yet gone extinct, but it exists only precariously.
- g. Galapagos finches iconically exemplify speciation.
- h. Bob drank a couple of Red Bulls and lasted happily for the whole meeting.
- i. She's mastered semantics, but understands syntactic theory rather unevenly.

Once again, we find that such verbs (in their state uses) lack the kind of 'hooks' required by adverbial modification, such as change through time, a beginning point, an agent, or a result. The predicates in 120 are conceived of as involuntary and are not physical; one does not *love deliberately* or *stiffly* or *wetly* where *love* denotes a psychological state (see 123a). Likewise, they have no spatial extent, nor do we take them to vary quickly and repeatedly over time; one can, however, conceive of the feeling of love coming and going through time, or manifested either openly or covertly, or being (a)typical of the individual in question's patterns, so the examples in 123b are better.

- (123) a. She loves her brother {*deliberately, *stiffly, *wetly}.
- b. She loves her brother {unevenly, openly, characteristically (for her)}.

Note, though, that other psychological predicates do not allow 'distributional' adverb modifiers as easily (see the contrast in 124).

- (124) a. *She fears snakes unevenly.
- b. She loved him unevenly.

It seems better to say *She loved him unevenly* in 124b, presumably because our intense lifetime focus on affairs of the heart allow us to conceive of a woman loving someone in some ways but not others; this multidimensionality is absent for *fear*. This point holds as well for the group in 120b, which involve similarity, difference, and set relationships, all fairly one-dimensional concepts, in addition to not normally being under an agent's control, and, in many cases requiring overt manifestation to begin with and so excluding modifiers like *covertly* (again, considering only state readings).

Finally, *own* in 120c has a definition based in codified societal convention or law, and there are few ways for it to differ: in essence, it involves a human's recognized rights or control over something. Some evaluative adverbs work in context, as in 125a, and ownership can be overt or covert, as in 125b, or characterized by some attitudes (see 122d–e), but few other options seem available (125c).

- (125) a. She owns those houses oddly, with no legal title but with a special dispensation from the city government.
- b. She owns those houses covertly, via several shell corporations and a couple of middlemen reachable only via P.O. boxes.
- c. *She owns those houses {crazily, unevenly, wisely, boozily, ...}

Thus, the reason why stative verbs are rarer and stative adjectives more common is that the verbs happen to have few modifiable properties: they are more unidimensional than stative adjectives as a class.

As expected, there is also a contrast between stative verbs and eventive verbs with respect to manner modification, as the explanation given here predicts. Compare 123 to

126, or 127 (based on 125) to 128: in both cases, the stative verb is more restricted than the eventive verb in the types of manner adverbs that may modify it.

- (126) She applied the paint {deliberately, stiffly, wetly, unevenly, openly, characteristically (for her)}.
- (127) a. She owns those houses {oddly, covertly}.
- b. She owns those houses {*crazily, *wisely, *boozily}.
- (128) She built the houses {oddly, covertly, crazily, wisely, boozily}.

(For 126 with *openly*, a context of illegal graffiti-painting is appropriate; similarly inventive but plausible contexts can easily be found for the options in 128.)

3.5. THE FAILURE OF ALTERNATIVE EXPLANATIONS. Both Maienborn 2005 and Katz 2008 attempt to explain away at least some of the examples given above, by arguing that they do not constitute true cases of manner modification. I focus primarily on Katz's suggestions here. First, he proposes that some cases involve 'pure lexical selection' and thus are to be classed as adverbial collocations, listed in the lexicon along with idioms. His examples are *to know (someone) by face* vs. **to love someone well* (in the manner sense of *well*, not degree) in 129a–b, and in 130a–b *to firmly believe (in the supernatural)* vs. **to love (someone) firmly*.

- (129) a. to know (someone) by face
- b. *to love someone well
- (130) a. to firmly believe (in the supernatural)
- b. *to love (someone) firmly.

A case can be made, however, that these involve lexical selection in the normal, non-idiomatic sense in which a verb and another element simply have incompatible components, just as with, say, **to slap a characteristic* or **to think crushingly*. Thus *firmly* appears to require a state that one can consciously hold to or support—beliefs, principles, a physical object, control of one's territory, and so forth—but not emotional or other mental states like love; this is brought out by the contrast in 131a–b.

- (131) a. to firmly {hold, believe, maintain, insist, resist ... }
- b. *to firmly {think, mull over, assess, manufacture, ... }
- (132) a. *to fall apart well
- b. *to trip well
- c. *to coagulate well

Similarly, manner *well* requires a recognized criterion for quality: one cannot say **to love someone well* for the same reason one does not say **to fall apart well*, **to trip well*, or **to coagulate well* in 132—except perhaps for the last of these, where (for example) a chemist has established criteria for coagulation of a substance for a particular purpose; if readers take 132c as acceptable under this reading, then this underscores the point. So while there may be some instances of genuine adverbial collocations, they are probably very few, no more or less than with dynamic events and manner adverbs.

- (133) Peter loves Mary passionately.

Second, Katz suggests that in phrases like *Peter loves Mary passionately* in 133 the adverb is an 'event-related modifier' in describing a collection of events related to loving, each one of them done in a passionate way. Maienborn (2003b, 2004) has a very similar proposal for this, treating it as a kind of coercion. On this analysis, 133 would be the representation of a covert set of events, something like 134.

- (134) Peter passionately presents flowers to Mary, kisses Mary passionately, throws his arms around Mary passionately, gazes passionately at Mary, ...

There are many instances of stative verbs, as in 135a–e (b–c repeated from 122 above), where there can be no plausible collection of dynamic events.

- (135) a. '[Jackie and Veronica have] been together, passionately but precariously, since middle school.' (Chris Rohman, *Advocate*, 11/17/11, p. 30)
 b. Bob drank a couple of Red Bulls and lasted happily for the whole meeting.
 c. The snow leopard has not yet gone extinct, but it exists only precariously.
 d. Peter loves Mary passionately but completely covertly. (= only within his mind)
 e. Peter loves Mary comprehensively.

In 135c, for example, it does not seem possible to apply *precariously* to any of the individual events that might be taken as part of existing, and 135d clearly cannot involve dynamic events (barring 'events' in Peter's mental world), since the manner adverb restricts the predicate exclusively to an emotion. In 135e, no individual event within the loving-collection is comprehensive; the adverb applies specifically to the whole of these events, saying (in effect) that they constitute the whole of what Peter could do (cf. also *love unevenly*, as noted above). It should also be noted that, if sentences like 133 involve covert events, we might (depending on the details of the analysis) expect them to pass standard tests for dynamic events, such as the use of the progressive in English, yet they do not (136 is to be taken as referring to Peter's mental state).

- (136) *Peter is loving Mary passionately.

In a similar way, with adjectival predicates like *darkly humorous* or *elegantly intricate*, there seems to be no collection of events underlying humor or intricacy; rather, if there is any collection, it is of constituent states (properties), and we are back where we started. (Katz admits (2008:233) that he has no explanation for 'standard intersective modifiers such as *quietly*'.) Further examples of adjectival predicates for which a collection of dynamic events is hard to construct are provided in 137–138; many of these are mental-attitude predicates.

- (137) cheerfully calm, proudly satisfied, defiantly angry, happily sore, smugly delighted, guiltily glad, playfully grotesque, forlornly proud, gaudily expensive, quietly elegant
 (138) 'The house was quiet, everyone drunkenly asleep.'

(Richard Russo, *Empire falls*, p. 290)

A third group of potential counterexamples includes deverbal stative adjectives like those in 139 (from Mittwoch 2005:78).

- (139) irreparably damaged, neatly arranged, seamlessly joined

One way to avoid calling these instances of state modification is to treat them as adverbs modifying eventive verbs, with the combination of adverb and verb then converted to a state (e.g. Parsons 2000:86). But as Mittwoch points out, this does not work in a case like 140 (her 33).

- (140) The carpet was irreparably damaged.

Here it is not the event of damaging that is irreparable, but the resulting state or possibly the carpet itself. The same is true of 141, where it is odd to take the action of stripping as colorful or sparse rather than the result.

- (141) The wall was {colorfully/sparingly} striped.

Moreover, as Koontz-Garboden 2010 points out, there are many examples where no event has occurred, as with a sunken meadow (describing its relatively low position, created as such originally, and not lowered) or a patch of darkened skin next to lighter skin, created in its present color (142 = his 3a).

- (142) 'He has no scars but there is a slightly darkened portion of skin on his right leg, near the femoral artery, which he has had since birth and is in the crude ...'

An alternative (Maienborn 2003b:11–12) is to take such adverbs as covert adjectives modifying a resulting object, on the analysis of Geuder 2000. For Geuder, 143a–b are to be analyzed as something like 'the resulting slice of bread is thin' and 'Gretchen's resulting outfit is elegant', respectively.

- (143) a. Gretchen sliced the bread thinly.
b. Gretchen dresses elegantly.

Thus 144a–b, in a parallel way, would be read as 'the (ensemble of) grooves on the panel are coarse' and 'the joint is seamless'.

- (144) a. The panel is coarsely grooved.
b. The sections were seamlessly joined.

Again, however, this strategy cannot be applied generally, as the examples in 145 illustrate.

- (145) a. intricately partitioned
b. dazedly bamboozled
c. evenly distributed

To the extent that one can identify a result in such cases, it is not a result object but a result STATE—respectively, of having partitions, of having been rejected, a mental state, and a physical disposition. While one can take a (result) state as a (result) object, if one is to follow the usual analysis whereby these adjectives indeed denote a state (e.g. in Kratzer 2000, Koontz-Garboden 2010), then it seems redundant and unnecessarily complex to take (for example) 145a as denoting a state created by an event of partitioning of which the resulting pattern is intricate.

3.6. CONCLUSION FOR MANNER MODIFICATION OF STATES. The discussion above indicates that the possibility of manner modification of stative predicates is a matter of semantic (in)compatibilities. In general, stative predicates are semantically impoverished, lacking the range of temporal, agentive, and aspectual properties that normally are a part of dynamic events, and so there are simply fewer properties that allow modification. When modification does occur, it tends to be with predicates that are semantically richer, such as adjectives denoting artistic or social properties like *elegant* or *belligerent*, as opposed to semantically simpler, more physical predicates like *wet* or *hard*. Thus it is not necessary (nor is it desirable) to try to account for the relative rarity of manner modification by denying the existence of an eventuality variable (as for Katz) or invoking Kimian states (as for Maienborn), attempting to explain away the apparent exceptions as instances of coercion, or of hidden modification of collections of events, resultant objects, or the like. If we follow Katz and Maienborn, then there are many examples, perhaps the majority, for which none of their strategies for explaining them away work. By contrast, if we admit true Davidsonian eventuality variables for states, everything falls into place.

4. CONCLUSION: THE NATURE OF STATIVE PREDICATE MODIFICATION. In the two major sections of this article, I discussed (respectively) locative and manner modification of stative predicates, using primarily adjectives but also the smaller number of sta-

tive verbs. I have shown that—despite the claims of Maienborn and Katz—such predicates do permit these two kinds of modification, and in fact so do quite easily when the pragmatic conditions are met and the right combinations of modifier and predicate are used.

For locatives, I proposed an alternative analysis rooted in the idea that states normally hold for a given individual regardless of location. This is embodied in the state-location default axiom, whose informal version is in 27 (repeated from above).

- (27) THE STATE-LOCATION DEFAULT AXIOM (SLDA): INFORMAL VERSION: In sentences where focus on a locative expression is possible, in all DEFAULT_{ck} worlds, if an individual is in a state at some location, then that individual would be in that state at any location.

Given the SLDA, and a normal (default) context, locatives create contradictions between this common knowledge and the implication that the state does not hold in other locations, as stated in the mismatch hypothesis (31).

- (31) MISMATCH HYPOTHESIS: If the blind strengthened meaning of a sentence P is a contradiction given common knowledge, then P is odd.

This analysis correctly predicts that, when the SLDA does not apply, so that contextual knowledge is overridden, locatives are fine with stative predicates. Such cases include (i) those with a nondefault context highlighting the variability of a state across locations, (ii) universally quantified locatives, which also require a nondefault context, (iii) descriptive sentences where no focus on the locative is possible, and (iv) expletive (and similar) subjects, where there is no individual holder of the state (though this latter case has an element of stipulation, pending a clearer characterization of the phenomenon). I showed also that Maienborn's analysis of such cases in terms of frame-setting modifiers faces a number of serious problems.

For manner adverbs, modification is possible with relatively multidimensional predicates, and even with unidimensional ones there are ways around this, such as having modification expressing the degree to which the state is overtly manifested, or represents a prototypical instance of that state. This generalization was given in 88.

- (88) a. Possibilities for manner modification generally increase with the conceptual complexity (multidimensionality) of a predicate.
 b. Stative predicates are less conceptually complex than dynamic/eventive predicates.

The descriptive conclusion is that the counterexamples provided by Mittwoch 2005, Rothstein 2005, Geuder 2006, and others are not isolated examples, but represent the larger generalization that stative predicates can take locative and manner modification in principle. From a theoretical point of view, we can say two things. First, there is evidence for the type of grammaticized pragmatic treatment of external locatives with states represented by Magri 2009, as embodied in the SLDA and mismatch hypothesis. Second, and more importantly, there is no need to invoke Kimian states (contra Maienborn), and there is a need to invoke regular Davidsonian eventuality variables for states (contra Katz). Thus, possible modification patterns for states include not just temporal, degree, and domain, but manner and locative as well.

If stative predicates do not represent Kimian states, but instead represent regular Davidsonian eventualities, then what exactly is the difference between states and dynamic events? The primary difference seems to be that states are homogenous: they do not involve change, and every instant of time within the state is the same as any other with respect to the relevant property (Kamp 1979)—thinness for *thin*, elaborateness for *elaborate*, and so forth. As such, they do not involve either causation (and so do not

have agents) or results (though they themselves can be the result of some action). This homogeneity is well known and has been used (for example) to account for stative predicates' ungrammaticality with progressives.²⁰ This is not to say that all predicates that appear homogenous behave exactly alike: there may be subtle differences, as in cases where an otherwise homogenous predicate has certain other dynamic properties, such as posture verbs like *crouch* or *kneel*, which involve a conscious holding of a position by an agent (Levin & Rappaport Hovav 1995; see Rothmayr 2009 for discussion of the subtleties of stative and related predicates). But such distinctions are not basic ontological differences such as are posited for Kimian vs. Davidsonian states. Instead, they are the same sort of semantic properties that distinguish (for example) subtypes of achievement verbs or varieties of activity verbs. States should thus still be seen as different from dynamic events—but they are differentiated simply by more impactful semantic properties than enter into differences among subtypes of dynamic entities, not by properties with fundamental ontological differences.

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²⁰ See Landman 1992 for one analysis; for general discussion of states and the progressive, see Rothstein 2004:144ff. and references cited there.

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