

# The Emerging Middle Class\*

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[Draft. To appear in The Proceedings of CLS 46.]

## Abstract

We introduce the *accommodation* construction (*My car seats four people*) and the *make* construction (*Clowns make good fathers*), and show that, despite their superficial differences, these constructions belong to a previously unrecognized class of middle voice clauses: ones which retain a surface object, unlike canonical middles (*Bureaucrats bribe easily*, Keyser and Roeper 1984). We offer a Minimalist syntactic analysis of all middle voice clauses, not unlike analyses of passives (Collins 2005, Gerke and Grillo 2009). To do so, we exploit Kratzer's (1996) VoiceP, and extend the definition of the Voice head so that it is the locus of all featural and structural differences among active, passive, and middle clauses.

## 1. Introduction

We describe and analyze two English constructions which have not yet received adequate treatment – the *accommodation* (1) and *make* (2) constructions:

- (1) a. My car seats four people. ≈ (*Up to*) *four people can sit in my car*  
b. This bed sleeps five people. ≈ (*Up to*) *five people can sleep in this bed*
- (2) a. Clowns make good fathers. ≈ *Clowns are good fathers*  
b. This photo makes a fun dartboard. ≈ *This photo is a fun dartboard*

We show that these constructions belong to a previously unrecognized sub-class of middles, despite their superficial differences.<sup>1</sup> Namely, these constructions retain a surface object, unlike the canonical middles in (3):

- (3) a. Bureaucrats bribe easily. (Examples from Keyser and Roeper 1984)  
b. These chickens kill quickly.

We offer a syntactic analysis of this new class of middle constructions in (1)–(3) that relates them to passives (à la Keyser and Roeper 1984, henceforth K&R). To do so, we exploit existing

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\*We would like to give special thanks to Peter Hallman, Ed Keenan, Hilda Koopman, Anoop Mahajan, Jason Merchant, Jessica Rett, Carson Schütze, the UCLA Syntax-Semantics Seminar audience, and of course the audience of CLS 46, for helpful comments, questions, and suggestions.

<sup>1</sup>Farrell (1993) discusses the middle-like properties of sentences such as (1), but he stops short of analyzing them as middles.

syntactic machinery – specifically, VoiceP (Kratzer 1996) and predicate fronting (as in passives: e.g. Collins 2005, Gehrke and Grillo 2009).

We begin in §2 by describing the basic properties of *make* and *accommodation* clauses. In §3, we provide a syntactic definition of the core properties of middles, and we show that the *accommodation* and *make* constructions also exhibit these properties. This follows if they are in fact instances of middle voice clauses, leading to our proposal in §4. Finally, we briefly extend our analysis to other grammatical voices to account for their complementary distribution within a single clause.

## 2. Some Apparent UTAH Violations

Below, we describe the basic empirical properties of the *make* and *accommodation* constructions. Importantly, they each appear to violate Baker’s (1988) UTAH: their surface *subjects* bear theta roles typical of *objects*, and vice-versa.

Her (2009) introduces the Chinese data in (4), calling the construction in (4b) the *accommodation* construction. Such sentences involve an apparent ‘inversion’ of arguments:<sup>2</sup> the surface subjects bear internal theta roles (e.g. theme), while the surface objects bear external theta roles (e.g. agent, causer):

- (4) a. sì ge rén shuì zhè jīan xiǎowū.  
Four CL person sleep this CL cabin  
‘Four people use this cabin for sleeping.’ (Active)
- b. zhè jīan xiǎowū shuì sì ge rén.  
this CL cabin sleep four CL person  
‘This cabin sleeps four people.’ (Accommodation)

We focus on the English analogues of (4), which Her does not discuss:<sup>3</sup>

- (7) a. Two people can sleep in a queen size bed.  
A queen size bed can sleep two people.
- b. Thirty people can sit in this clown car.  
This clown car can seat thirty people.

Verbs that are not locative in nature can also participate in this construction, such as Chinese *drink*, *eat*, and *suck* (see Her 2009 for examples), and English *fit* and *play*:

<sup>2</sup>(4b) is not an instance of locative inversion (Her 2009), nor are the English analogues (e.g. (7)) given agreement patterns.

<sup>3</sup>The surface objects of the accommodation construction need not be QPs:

- (5) This bed can easily sleep a person up to 6’10” tall.

These surface objects are, however, restricted in other ways. For example, referential surface objects are sometimes degraded without some kind of modification:

- (6) This bed can easily sleep John and Mary \*(with room to spare).

It seems that the surface object’s (salient) needs with regard to the surface subject (e.g. bed size in (5)) plays a crucial role in the acceptability of *accommodation* sentences. We consider this to be a core part of this construction’s semantics, but we set it aside here.

- (8) a. This bag fits all of my snack food.  
 b. The game plays up to 7 players. (from Google)

The *accommodation* construction's inability to passivize, shown in (9), is a property we take to be fundamental:<sup>4</sup>

- (10) a. \*Two people are slept by queen size beds.  
 b. \*Thirty people are seated by this clown car.  
 c. \*All of my snack food is fit(ted) by this bag.<sup>5</sup>  
 d. \*Up to seven players are played by the game.

Similar to the *accommodation* examples above, the data in (11) also exhibit an apparent mismatch between grammatical roles and theta roles:<sup>6</sup>

- (12) a. He makes a lovely drag queen.  
 b. Clowns make good fathers.

Examples of this type – the *make* construction – feature a surface subject which is not an external argument of *make*: there is no “maker”. Like the *accommodation* construction in (10), the *make* construction strongly resists passivization.

- (13) a. \*A lovely drag queen is made by him.  
 b. \*Good fathers are made by clowns.

At the same time, the surface objects appear to behave differently in the *accommodation* and *make* constructions. To use Doron's (1988) terms, the surface object acts as a referring DP in the *accommodation* construction (see the previous section), but it acts as a predicational (non-referential) DP in the *make* construction:

- (14) a. He makes a lovely drag queen. (Predicational DP)  
 b. \*He makes the lovely drag queen. (Referring DP)

Doron notes that non-restrictive relative clauses can only be adjoined to referring DPs, not predi-

<sup>4</sup>This property excludes certain verbs which might otherwise be taken to participate in the *accommodation* construction, such as *feed*, which can passivize:

- (9) a. A large pizza feeds a family of five.  
 b. A family of five is fed by a large pizza.

Moreover, unlike (4b)–(8), the surface object in (9b) is not clearly an external argument of *feed/eat*. We set aside the question of which verbs can and cannot occur in this construction, remarking only that this issue may be related to semantic verb classes.

<sup>5</sup>It is not clear whether the passive participle should be *fit* or *fitted*. While *fitted* is independently attested (“*I was fitted by the tailor*”), this is perhaps not the same meaning of *fit* as in (8a).

<sup>6</sup>A similar construction can be found in examples like:

- (11) a. Trail mix makes (for) a healthy snack  
 b. Hurricane Ida makes for a muddy Mercer Cup (from Google)

Interpretationally, (11a) is essentially identical to the *make* construction, but examples like (11b) differ. That is, (11b) has a causative interpretation not available in (11a), whereby the hurricane causes the Mercer Cup to be muddy (while in (11a), trail mix does not cause a snack to be healthy). We leave the curious properties of this *make for* construction aside here.

cational DPs. If *make*'s complement is predicational, then we expect it to be ill-formed with such relative clauses, and it is:

- (15) \*He makes a lovely drag queen, who I told you about.

We conclude that the 'surface object' in *make* constructions is not an object *per se*, but is instead a predicate.<sup>7</sup> We will return to this in §4..

To summarize, although sentences involving the *accommodation* and the *make* constructions differ superficially, their subjects pattern alike thematically. Taking UTAH seriously, we assume that any and all asymmetries between an argument's thematic interpretation and its surface position arise through syntactic movement – a theory we develop in §4.. First, though, we show how the two constructions behave in many ways like canonical middle voice clauses.

### 3. The Middle Voice

The central claim of this paper is that the *accommodation* and *make* constructions are varieties of middle-voice clauses. Therefore, we begin this section by describing the basic properties of the middle voice. In §3.2, we show that the *accommodation* and *make* constructions exhibit the core properties of middles, and in §3.3 we motivate the need for a new analysis of the middle voice.

#### 3.1. Salient Syntactic Properties of Middles

Based on prior observations in the literature, we argue that the following properties characterize the middle voice's syntax:<sup>8</sup>

- (16) Core Syntactic Properties of Clauses in the Middle Voice
- (i) The surface subject is an underlying internal argument
  - (ii) Clauses in the middle voice cannot undergo passivization
  - (iii) External arguments are syntactically absent in middle voice clauses
  - (iv) Middle voice clauses involve a causative, non-stative predicate
  - (v) There is an implicit external argument<sup>9</sup>

There may indeed be other defining syntactic characteristics for the middle voice, but for reasons of space, we do not discuss them here.<sup>10</sup> We take the exceptionless properties in (16) to be the most

<sup>7</sup>Consider the fact that adjectival modification is obligatory in *make* constructions (cf. \*Clowns make fathers). Canonical middles, too, often employ predicate modification (see fn. 10), but by means of adverbial phrases. The fact that adjectival phrases are the predicate modifiers in the *make* construction provides additional evidence that this DP is a predicate.

<sup>8</sup>The properties in (16) require a syntactic treatment; for discussion of the semantics of the middle voice, see e.g. Fagan (1992), Kemmer (1993), and Lekakou (2002, 2004), a.o. Unaccusatives and passives also exhibit properties (i)-(iii), but not (iv)-(v): see Sailor and Ahn (*in progress*).

<sup>9</sup>For reasons of space, we will not discuss this property here. See K&R (1984), Zribi-Hertz (1993), and Iwata (1999) for evidence an external argument exists at the conceptual-intentional level. See Sailor and Ahn (*in progress*) for a syntactic/semantic analysis of this, involving existential closure of the semantic function instantiated by Voice<sup>0</sup> that assigns the external argument theta role.

<sup>10</sup>Adverbial modification and overt morphological marking are not obligatory aspects of the middle voice. Though adverbial modification often facilitates proper interpretation, there are many cases without any: *Don't buy bamboo flooring. It scratches (easily)*. See (Rapoport 1999) for further discussion. Though some languages (e.g. Hebrew) have distinct middle-voice morphology, there are many morphologically-unmarked middle constructions: see Alex-

basic, and examine each in turn.

Perhaps the middle voice's most striking property is the apparent "promotion" of an underlying object to surface subject position (cf. (16i)), as in (17b):

- (17) a. Mobsters bribe bureaucrats easily. (Active)  
 b. Bureaucrats<sub>i</sub> bribe *e.c.i* easily. (Middle)  
 c. Bureaucrats<sub>i</sub> are bribed *e.c.i* easily. (Passive)

The surface subject *bureaucrats* in (17b) does not receive an external theta role (e.g. agent, causer); so, it should not be the external argument of *bribe*, given UTAH. Apparent violations of UTAH of this sort are not unique to the middle voice. Internal argument promotion is also a hallmark property of the passive voice, (17c). This similarity has led to syntactic analyses that relate the two (e.g. K&R 1984).

Also like passives, clauses in the middle voice cannot be "passivized" (cf. (16ii)). This is referenced as a defining characteristic of the middle voice in Grady (1969), and falls under the domain of Perlmutter and Postal's (1984) "1-Advancement Exclusiveness Law" (1AEX). In brief, 1AEX describes the impossibility of promoting an argument more than once within a clause – meaning, for example, that passives, unaccusatives, etc. cannot passivize. Consider the data from Perlmutter and Postal in (18) and the novel data in (19), where we attempt to passivize various clauses.

- (18) a. Spider Man exercised in the room. (Unergative)  
 b. The room<sub>i</sub> was exercised in *t<sub>i</sub>* by Spider Man. (Passive Unergative)  
 c. The toothpaste<sub>i</sub> oozed *t<sub>i</sub>* into the sink. (Unaccusative)  
 d. \*The sink<sub>j</sub> was oozed *t<sub>i</sub>* into *t<sub>j</sub>* by the toothpaste<sub>i</sub>. (Passive Unaccusative)  
 e. Attention<sub>i</sub> was paid *t<sub>i</sub>* to Betty by Mark. (Passive)  
 f. \*Betty<sub>j</sub> was been paid *t<sub>i</sub>* to *t<sub>j</sub>* by Mark by attention<sub>i</sub>. (Passive Passive)
- (19) a. Spam sells *t<sub>i</sub>* quickly in Safeway. (Middle)  
 b. \*Safeway<sub>j</sub> was sold *t<sub>i</sub>* quickly in *t<sub>j</sub>* by Spam<sub>i</sub>. (Passive Middle)

The 1AEX predicts the ungrammaticality of (19b) if, as in unaccusatives and passives, the object gets promoted to subject in middles as well.

However, middles and passives are systematically distinct in many ways. Unlike the passive, it is impossible to syntactically express the external argument in the middle voice (cf. (16iii)).<sup>11</sup> For example, the overt expression of one – even with *as* an oblique, using *by*, *from*, or *for*<sup>12</sup> – is ungrammatical, unlike in the passive voice.

- (20) a. Grocery stores sell Spam. (Active)  
 b. Spam<sub>i</sub> is sold *t<sub>i</sub>* by grocery stores. (Passive)  
 c. \*Spam<sub>i</sub> sells *t<sub>i</sub>* by/from/for grocery stores. (Middle)

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iadou and Doron (2007).

<sup>11</sup>See A&S (2006) for a discussion of the rich literature on this matter. A&S conclude the "logical subject" is not in the syntax (but cf. Bhatt and Pancheva 2006, as well as our fn. 9).

<sup>12</sup>With *from*, (20c) is irrelevantly acceptable under a source/path reading. Also, *for* does not license an external argument (Bhatt and Pancheva 2006, and references therein; contra Stroik 1992, 1995).

Moreover, a covert external argument can act as a controller for a rationale clause in the short passive, but cannot in the middle:<sup>13</sup>

- (21) a. You zip up the tent (in order) to stay warm. (Active)  
 b. The tent is zipped up (in order) to stay warm. (Passive)  
 c. \*The tent zips up (in order) to stay warm. (Middle)

Also, as noted by both Fellbaum (1986), middles do not license so-called “agent-oriented” adverbs, unlike actives and passives:

- (22) a. Students always translate Greek begrudgingly. (Active)  
 b. Greek is always translated begrudgingly. (Passive)  
 c. \*Greek always translates begrudgingly. (Middle)

For these reasons, we assume that external arguments of middles are never projected in the syntax, unlike actives and (short) passives.

Finally, a middle clause must use a verb’s causative form (cf. (16iv)):<sup>14</sup>

- (24) a. You can easily {raise/\*rise} this flag if you use a pulley. (Causative)  
 b. This flag {raises/\*rises} easily if you use a pulley. (Middle)

Relatedly, stative predicates (e.g. *keep*) are ill-formed in the middle voice:

- (25) a. You can easily {store/keep} all the tools in the shed. (Active)  
 b. All the tools {store/\*keep} easily in the shed. (Middle)

Since verbs which differ minimally in causation and stativity behave differently here, we argue that causation and non-stativity – both of which have been claimed to be encoded in  $v^0$  – are contributing factors when determining a predicate’s ability to appear in the middle voice.<sup>15</sup>

Additionally, though several (e.g. K&R 1984, A&S 2006) have defined the middle voice as necessarily stative and generic, it has been noted (e.g. by Fellbaum 1986, Iwata 1999) that there are many felicitous non-generic, eventive middles.

- (26) a. Spam sold faster than we could restock it yesterday.  
 b. This poem by Catullus is translating quite easily now.

<sup>13</sup>Stroik (1995) argues that a middle clause’s implicit argument can control an adjunct’s empty category subject, giving examples like *These houses won’t sell without e.c. advertising them*. However, the advertisers need not be the sellers. This would not be the possible if the e.c. empty category were a PRO controlled by the external argument of *sell*. Instead, the subject of *advertising* might be some other un-controlled empty category, as in “*There is a plan e.c. to kill Sawyer*.” See Koster (1987) for evidence of pragmatic (and not syntactic) determination of this e.c.’s reference.

<sup>14</sup>This is noted by Fellbaum (1986); however, she does not discuss the fact that middles can also be formed from causative denominal verbs:

- (23) a. This model<sub>i</sub> [<sub>v,P</sub> [<sub>N</sub> photographs] *t<sub>i</sub>*] well.  
 b. Half-moon cookies<sub>i</sub> [<sub>v,P</sub> [<sub>N</sub> halve] *t<sub>i</sub>*] easily.

<sup>15</sup>We are not asserting that causation and non-stativity are the sole determining factors. Perhaps this is linked to aktionsart, as Fagan (1992) suggests. Alternatively, it may be linked to the CAUSE head discussed in Deal (2009), which she argues determines the availability of *there*-insertion.

As such, we will not pursue genericity or stativity as a characteristic of middles.

### 3..2. The Emerging Middle Class

Now we turn our attention back to the data introduced in §2 – the *accommodation* and *make* constructions – and show that they pattern just like the canonical middles.

First, consider property (16i): the subjects of middles are underlyingly internal arguments. *Make* and *accommodate* clauses exhibit this property too:

- (27) a. This extra-long bed sleeps tall people comfortably. (Accommodation)  
 b. Thomas will make a good janitor. (Make)  
 c. Cotton shirts iron quickly. (Canonical middle)

As discussed in §2., it is clear that the surface subjects in (27) bear theta roles inconsistent with external arguments. Neither *this extra-long bed* in (27a) nor *Thomas* in (27b) is an agent, causer or experiencer. On the contrary: they are interpreted as themes or locatives. Given UTAH, this is sufficient to establish that the surface subjects of these constructions are internal arguments which have moved (cf. (16i)).

These constructions also exhibit 1AEX effects (property (16ii); (10) and (13)) in the same way as canonical middles, as in (19).

Furthermore, these constructions also pattern like the middles in (20)–(21), regarding (16iii). They disallow any syntactic expression of an agent (the (b) examples below), as well as control from the “implicit” agent (the (c) examples below):<sup>16</sup>

- (28) a. Hoteliers<sub>i</sub> sleep tall guests in these extra-long beds to please them.  
 b. These extra-long beds sleep tall guests (\*by hoteliers<sub>i</sub>).  
 c. These extra-long beds sleep tall guests (#PRO<sub>i</sub> to please them).  
 (29) a. His OCD<sub>i</sub> will make Thomas a great janitor while annoying his wife.  
 b. Thomas will make a great janitor (\*by his OCD<sub>i</sub>).  
 c. Thomas will make a great janitor (#while PRO<sub>i</sub> annoying his wife).<sup>17</sup>  
 (30) a. Dry cleaners<sub>i</sub> iron cotton shirts quickly, without making mistakes.  
 b. Cotton shirts iron quickly (\*by dry cleaners<sub>i</sub>).  
 c. Cotton shirts iron quickly (#without PRO<sub>i</sub> making mistakes).

Finally, following (16iv), all members of this new middle class are causative:

- (31) a. A sedan {seats/\*sits} a maximum of five people. (Accommodation)  
 b. You {make/#are} a scary dentist. (Make)  
 c. Sober guests {seat/\*sit} more easily than drunk ones. (Canonical)

In (31b), the non-causative *are* is strictly-speaking grammatical, but does not yield the relevant *make*-construction interpretation.<sup>18</sup>

<sup>16</sup>Though *tall guests* is interpreted as an external argument, it is not the external argument of the clause that is in the middle voice, as we motivate in §4..

<sup>17</sup>This sentence is good with the reading that Thomas will drive his wife crazy; what is bad is a reading where Thomas’ compulsion for cleanliness (the implicit argument) will drive his wife crazy.

<sup>18</sup>A sentence with *be* is less restricted than the *make* construction. Consider (32):

Just as genericity/non-eventivity are not requirements for the canonical middles, the new members of the middle class may also appear in specific, eventive contexts:

- (33) a. This extra-long bed sleeps tall people comfortably; in fact, last night, it **slept** Yao Ming without any problems.  
 b. Thomas will make a good janitor; I know this because his father **made** an outstanding janitor.  
 c. The cotton shirts **ironed** quickly, but the silk shirts **didn't iron** at all.

Thus, the *accommodation* and *make* constructions pattern entirely like middles, and share the same core syntactic properties.

### 3.3. The Need for a New Analysis

To reiterate, we take the syntactic properties in (16) to be fundamental to the syntax of the middle voice, including the *accommodation* and *make* constructions described above. Any workable theory of middles (and, by hypothesis, any theory of *accommodation* and *make* constructions) must capture all of these characteristics. To our knowledge, no prior analysis of middles achieves this. We briefly discuss a few such analyses below, providing an alternative in the next section.

Viewing middles as an entirely lexical phenomenon, A&S (1995) provide evidence that middles pattern like unergatives. To account for this, they abandon UTAH, saying: “[t]he middle verb’s grammatical subject (the logical object) is its external argument and is generated in the D-Structure subject position” (A&S 1995:174). To account for the internal argument theta role on the subject, they appeal to a lexical rule. While they succeed in capturing the lack of a thematic external argument in the syntax, they fail to predict the fact that unergatives can be (pseudo-)passivized, (18b), but middles cannot, (19).

K&R (1984), on the other hand, argue for an analysis in which middles pattern like passives by using a combination of lexical rules and syntactic movement. Thus, they capture the fact that the surface subject is a syntactically-moved internal argument, thereby unifying the passive and middle 1AEX data, as in (18)–(19).

K&R and A&S both rely on lexical rules to suppress the syntactic external argument and assign the internal theta role to the what becomes the surface subject. Any analysis involving such a lexical rule is incompatible with a strictly compositional syntax. Moreover, such lexical rules are entirely incoherent when the external argument is not selected for by the lexical verb (Kratzer 1996 and subsequent work). That is, if external arguments are severed from lexical verbs, there is no way a lexical rule can suppress them.

On the other hand, purely syntactic approaches have been proposed, including Stroik (1992), Hoekstra and Roberts (1993), and Fujita (1994). While these analyses are able to capture most of the core properties of middles laid out in (16), they each involve the syntactic projection of an external argument, meaning they run afoul of observation (16iii) and the data we present to support

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(32) Chris {is/#?makes} a short IT manager.

The use of *make* is infelicitous in (32) because the adjective in a *make* construction must describe a property of the noun for which there are pragmatic expectations. Since there are no expectations of an IT manager’s height, *make* is infelicitous, whereas *is* is fine. (32) would be fine if *IT manager* were some other NP for which there are expectations of height, e.g. *basketball player*. These expectations are likely related to the enablement modality of middles, as we discuss in §4.1. and §4.2..

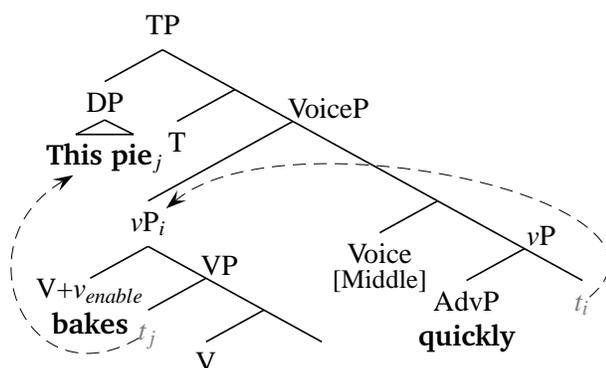
it. Moreover, given that the external argument is present in the syntax, all of these analyses must stipulate an ad-hoc strategy for overcoming the minimality violation that arises when the internal argument raises across the external argument in middles.

In the next section, we motivate a syntactic analysis that is conceptually similar to different aspects of these existing analyses, yet does not require any lexical rules or stipulations about minimality. This analysis preserves the lexicalist intuition that there is no external argument, while also integrating the structuralist idea that the middle voice is derived entirely in the syntax (parallel to passive voice).

## 4. The Proposal

We argue that the middle voice arises via feature-checking on a single syntactic head, Voice<sup>0</sup>. The Voice<sup>0</sup> in actives triggers merger of an external argument in its specifier, but the Voice<sup>0</sup> in middles triggers raising of vP to that position, instead:

(34) This pie bakes quickly.



We more fully describe and motivate this analysis in the remainder of this section, and extend it to capture *accommodation* and *make* constructions.

### 4.1. A VoiceP Analysis

Kratzer (1996) argues that external arguments are base-generated in the specifier of a high verbal projection, VoiceP. She states that “this choice of name was not arbitrary” (1996:120), without further exploring how external argument introduction relates to grammatical voice.

In a very real sense, though, grammatical voice is an external argument phenomenon: it dictates how (and whether) external arguments are realized. Active clauses<sup>19</sup> are characterized by syntactically-present external argument subjects; passives have external arguments syntactically realized as either an oblique *by*-phrase (long passive) or an empty category (short passive); and middles have no syntactic external argument whatsoever. This is no doubt the idea behind Kratzer’s “non-arbitrary” choice of name for the external-argument introducer, Voice<sup>0</sup>.

A parsimonious treatment of this observation reduces all of the distinguishing characteristics of the different voices to different “flavors” of the Voice head – [Active], [Passive], and [Middle] – each of which bears a set of features whose satisfaction yields each voice’s salient syntactic proper-

<sup>19</sup>We exclude clauses with unaccusative or raising predicates from this generalization; see §4.3.

ties.<sup>20</sup> Clauses in the middle voice lack external arguments (16iii) simply because [Middle] lacks a feature to select them. Without an external argument, the internal argument is the closest candidate for movement to subject position, capturing (16i) without violating minimality or appealing to a lexical rule.

As there is only one Voice<sup>0</sup> per clause, we immediately predict that the grammatical voices, just like the different Voice<sup>0</sup>s themselves, should be in complementary distribution. We saw direct evidence in favor of this in our discussion of the 1AEX and observation (16ii): “passivization” cannot apply to a passive or middle, as that would involve both [Passive] and a second Voice<sup>0</sup> in the same clause.<sup>21</sup>

In some analyses of the passive (Collins 2005, Gehrke and Grillo 2009), [Spec, VoiceP] is invoked as the landing site for a predicate-fronting operation. We argue that this also takes place in middles, triggered by a feature on the [Middle] Voice<sup>0</sup>. Evidence of such movement in canonical middles comes from data involving adverb placement. Fellbaum (1986) and Fujita (1996) note that adverbs cannot precede the verb in middle clauses, despite that they naturally appear in this position in actives. Instead, adverbs in middle clauses must follow the verb:

- (35) a. This salami cuts easily.  
 b. \*?This salami easily cuts. (modified from Iwata 1999)

Fujita argues that this pattern arises via head movement of the verb past the adverb.

While we agree that a movement analysis can capture this phenomenon, head movement generates the wrong output for verb-particle constructions, as in (36a). Examples (36b–c) suggest middles involve obligatory phrasal movement, instead:<sup>22</sup>

- (36) a. \*This salami [<sub>v</sub> cuts]<sub>i</sub> easily [<sub>vP</sub> *t<sub>i</sub>* up].  
 b. This salami [<sub>vP</sub> cuts up]<sub>i</sub> easily *t<sub>i</sub>*.  
 c. ??This salami easily [<sub>vP</sub> cuts up].<sup>23</sup>

We thus motivate the *vP* movement in (34) as an inherent part of the derivation of middles, a claim for which we will provide additional evidence shortly (from *accommodation* and *make* constructions). This requires VoiceP to be distinct from (and higher than) *vP*, which is taken to be the locus of causativity (Alexiadou et al. 2006, Harley 2007, Pytkänen 2008, *inter alia*).

In canonical middles, we thus argue that causativity requirement of (16iv) is derived by a *v*<sup>0</sup> that the [Middle] Voice<sup>0</sup> selects for. Additionally, we argue this *v*<sup>0</sup> is responsible for the modal interpretation inherent to middles (Massam 1992). For example, consider the paraphrase of (37a)

<sup>20</sup>At present, we are only concerned with the [Middle] Voice<sup>0</sup>, but see §4.3. for a brief overview of a unified analysis of grammatical voice under this approach.

<sup>21</sup>Note, in this analysis, passives are not built on actives either, as the [Active] introduces a non-oblique external argument. It is difficult to imagine an example that exhibits properties of both [Active] and [Passive] Voice<sup>0</sup>s; perhaps \**John<sub>i</sub> was [<sub>t<sub>i</sub> kissed</sub>]<sub>j</sub> Mary t<sub>j</sub>*, where Mary is the kisser.

<sup>22</sup>This phrasal movement operation must also obligatorily strand the adverb, otherwise it incorrectly allows (36c). We simply stipulate that the *vP* movement operation cannot target the projection containing the adjoined adverb. An analysis we will not pursue here, but which seems equally able to capture the facts, involves adopting the Cinquean view that adverbs are contained in functional projections, and these projections are apparently merged above the moved phrase.

<sup>23</sup>Some focus contexts, which are known to independently affect word order, improve this sentence.

in (37b):<sup>24</sup>

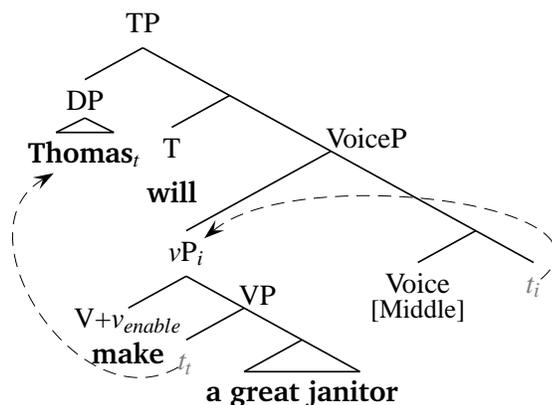
- (37) a. This type of pie crust burns easily. (Middle)  
 b. Some property enables this pie crust to easily be burnt.

As the paraphrase in (37b) reflects, the sense of causation ascribed to the surface subject in the middle is weaker than the one borne by the subjects of canonical causative clauses; i.e., there is no sense in which some property of a pie crust causes it to burn ([cause+VP]). Instead, that property causes it to be able to burn ([cause+able+VP]). We refer to this complex modality as “enability”, and assume it is encoded on the type of  $v^0$  that [Middle] Voice<sup>0</sup> selects ( $v_{enable}$ ).<sup>25</sup>

#### 4.2. Extending the analysis to accommodation/make

We saw in §2. that surface “objects” in *make* constructions are really predicates; this is the only derivational difference between *make* clauses and canonical middles:

- (39) Thomas will make a great janitor.



In addition to capturing the similarities between canonical middles and *make* constructions, the derivation in (39) also yields the expected, middle-like enability interpretation (“Some property enables Thomas to be a good janitor”). Thus, the *make* construction is simply a middle formed on a predicate-nominal small clause: *a great janitor* is the predicate of which *Thomas* is the internal argument.

Turning now to the derivation of *accommodation* constructions, we saw in §2. that they are identical to middles in all the relevant ways, which implicates the presence of a [Middle] Voice<sup>0</sup> in their derivation. Unexpectedly, *accommodation* constructions involve an overt argument that bears an external theta role (in surface object position), even though the [Middle] Voice<sup>0</sup> does

<sup>24</sup>This paraphrase is reminiscent of the paraphrase in A&S (2006:154). We suggest that the  $v_{enable}$  introduces these silent causer ‘properties’ as the semantic argument of this head.

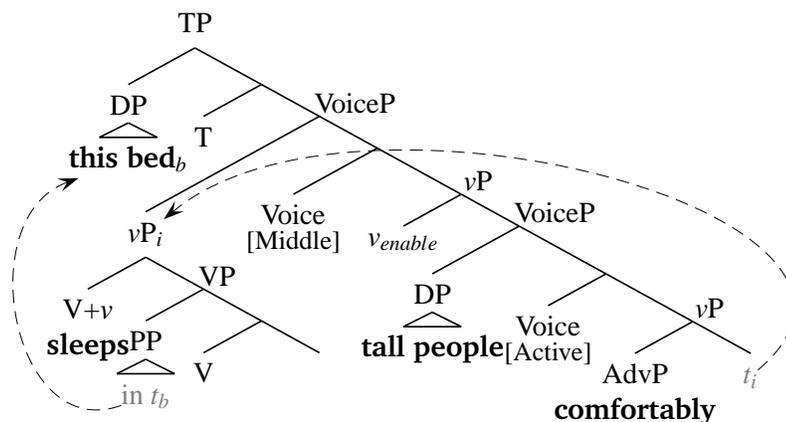
<sup>25</sup>Perhaps ‘enability’ modality represents the combination of a causative  $v^0$  and a (low) silent abilitive modal-like head. Moreover, whereas English uses causative morphology (*raise/rise*), Japanese uses abilitive/potential morphology in middles:

- (38) ringo ga yoku ur-e-ru  
 apple NOM well sell-POT-IMPF  
 ‘Apples are selling well.’

This could be taken as evidence that middles involve causative and abilitive syntactic projections.

not select for an external argument. Given (i) the implicated middle voice and (ii) the fact that non-oblique external arguments are only ever introduced in [Active]’s specifier (see §4.1), it must be that *accommodation* constructions are biclausal. This allows two VoiceP projections: a low, [Active] one which introduces the external argument, and a higher, [Middle] one which derives the surface syntax of a middle:

- (40) This bed sleeps tall people comfortably



Here, *tall people* receives an external theta role in the specifier of an [Active] Voice<sup>0</sup>; allowing the external argument interpretation of *tall people* without violating (16iii), since this external argument is not in the middle-voice clause. *Tall people* becomes the surface “object”, because of the higher [Middle] Voice<sup>0</sup>, which triggers movement of the lowest vP to its specifier.<sup>26</sup> This vP movement makes *this bed* structurally superior to the external argument *tall people*, meaning the former is attracted to [Spec, TP], as the minimal candidate for movement; this is a case of “smuggling” movement (Collins 2005).

To summarize, the apparent “inversion” of arguments in *accommodation* constructions arises when an active clause is embedded underneath a middle clause. As before, the *v\_enable* head in (40) brings the modal interpretation familiar to canonical middles and the *make* construction, except that the enablement modality scopes over the verb and the embedded external argument,<sup>27</sup> giving us the appropriate interpretation for *accommodation* constructions: “Some property enables tall people to comfortably sleep in this bed” (enable>sleep).

A curious property of the accommodation construction that we have not yet discussed is the apparent disappearance of a preposition in certain examples. Compare the *accommodation* example(s) below to their [Active] paraphrases:

<sup>26</sup>We leave open the question of why the lower vP is the one that moves. It could perhaps be the case that the higher *vP\_enable* is not a vP at all, but a modality projection.

<sup>27</sup>The *v\_enable* in *accommodation* constructions is distinct from those in canonical middles and *make* constructions, in that it selects for a VoiceP complement, while the others select for VPs. We assume that the VoiceP-selecting *v\_enable* is an accusative case assigner, and that it assigns case ECM-style to the embedded external argument. Japanese double nominative may possibly be analyzed in the same way as the *accommodation* construction, except the external argument of the lower clause bears NOM case.

- (41) kono futon ga [futa-ri ga ne]-re-ru  
 this futon NOM [two-people.CL NOM sleep]-POT-IMPF  
 ‘This futon can sleep two people.’

Note that the same abilitive/potential morpheme is used here as in the canonical middle in fn. 25.

- (42) a. Tall people (can) sleep comfortably \*(in) this bed.  
 b. (\*In) this bed sleeps (\*in) tall people comfortably.

We set aside this problem here, noting only that “disappearing Ps” are attested elsewhere in grammar, including in certain canonical middles in English (43), certain canonical middles in Dutch ((44); see also H&R), as well as Japanese relative clauses ((45); see also Ishizuka 2010).<sup>28</sup>

- (43) a. One can easily write with this pen without having to press hard.  
 b. (\*With) this pen writes (\*with) easily without having to press hard.
- (44) a. Het zit lekker op die stoel  
 It sits nicely on the chair  
 b. (\*Op) die stoel zit lekker (\*op)  
 (On) the chair sits nicely (on)  
 “The chair sits on nicely”
- (45) a. Chiyo ga kissaten de tabeta  
 Chiyo NOM cafe LOC eat-PRF  
 “Chiyo ate at (the/a) cafe”  
 b. Chiyo ga (\*de) tabeta kissaten (\*de) wa soko  
 Chiyo NOM (\*LOC) eat-PRF cafe (\*LOC) TOP there  
 “The cafe that Chiyo ate at is there”

### 4.3. Typological Consequences

As mentioned earlier, Voice<sup>0</sup> comes in at least three different flavors: [Active], [Passive], and [Middle]. These voices vary in (i) whether an external argument is introduced in the syntax, and (ii) whether a verbal projection undergoes fronting. These properties are laid out in (46), which shows the Voice<sup>0</sup>s we predict possible.

	<b>external argument</b>	<b>no external argument</b>
(46) <b>no predicate-fronting</b>	Active	
<b>predicate-fronting</b>	Passive	Middle

If each axis in the above table is taken to represent one particular setting of a binary feature – say, [ $\pm$ \*uvP] for (no) predicate fronting – then the interaction of these possible feature settings produces four possible Voice heads. The blank cell above corresponds to a “voice” that lacks both predicate-fronting and an external argument. We tentatively suggest that this fourth cell represents unaccusative and raising constructions.

Pushing this idea further, we can imagine a principle of Minimalism that rules out merger of a head with entirely negative/null feature settings. In that case, the empty cell in (46) actually corresponds to a clause that entirely lacks a VoiceP projection. As before, this captures the fact that

<sup>28</sup>A possible analysis of these disappearing prepositions in the *accommodation* construction is incorporation into the verb (cf. Freeze’s (1992) treatment of *have* as *be+at*). In this way, the verb will have an uninterpretable Case feature which it can use to check the Case of the unmoved external argument of the lower clause – *tall people* in (42b). Thus, the preposition’s “disappearance” would be predicted in just this case (Mahajan, p.c.). We do not take up this possibility here, as it is unclear how the preposition-incorporated verb would check the Case of a DP it does not c-command (40), and it is unclear what predictions are made for (43)–(45).

raising and unaccusative structures are, by definition, unable to appear in the passive or middle voice (or the active voice, for that matter), since merging the relevant Voice<sup>0</sup> to achieve those structures would necessarily yield a non-raising, non-unaccusative structure.

Thus, taken with our discussion of (16ii) in §4.1, we have successfully captured all of the 1AEX facts as a simple matter of complementary distribution among Voice<sup>0</sup>s. Further details and discussion about a VoiceP analysis of grammatical voice can be found in Sailor and Ahn (*in progress*).

## 5. Conclusions

In our investigation of *accommodation* and *make* constructions, we have accomplished several goals. First, we introduced and described the *accommodation* and *make* constructions as a subclass of middles. Next, we provided a modern minimalist analysis of the middle voice, which captures the core syntactic properties of all middles or middle constructions. We did so utilizing two independently-motivated syntactic mechanisms – Kratzer’s external argument introducer, Voice<sup>0</sup>, and predicate fronting as in Collins (2005) or Gehrke and Grillo (2009). Finally, by logically extending a VoiceP analysis of middles to passive, active, and unaccusative/raising clauses, we derive the 1AEX as a consequence of the more basic fact that voices (Voice<sup>0</sup>s) are in complementary distribution. The most immediate consequence of this approach is that the grammatical voices are not transformations on active clauses, since a clause’s voice characteristics simply reflect basic feature-checking during its derivation. We have left many details unexplored, but we believe this is a fruitful beginning to a truly unified analysis of voice-related phenomena.

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