

Middle sentences: An argument for conceptual structure

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MIDDLE SENTENCES: AN ARGUMENT FOR CONCEPTUAL STRUCTURE

ABSTRACT: Middle sentences in English are only partly described within the Government and Binding theory. Some semantic and discourse generalizations which are integral to the meaning of these constructions are just set aside, if they are mentioned at all. The theory of conceptual semantics developed by Ray Jackendoff (1983, 1987, 1990) presents the first viable alternative to the syntactic strategies descending from Chomsky's theory. In this paper I will examine the middle voice and show how several Government and Binding analyses of these constructions fail to account for important parts of the data. I hope to persuade the reader that a conceptual structure analysis of this phenomenon provides a more appealing solution which fully integrates the syntactic and semantic generalizations.

KEY WORDS: middle sentences; conceptual structure; argument; thematic role; agentivity.

SUMMARY: 1. Introduction. 2. An introduction to conceptual semantics. 3. Some current proposals for the middle voice. 4. A conceptual semantics analysis of the middle voice in English. 5. Conclusion.

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ORACIONES MEDIA: UN ARGUMENTO PARA LA ESTRUCTURA CONCEPTUAL

RESUMEN: Las oraciones medias en inglés sólo han sido descritas parcialmente en la teoría de la Rección y el Ligamiento. Algunas generalizaciones semánticas y pragmáticas esenciales al significado de estas construcciones han sido ignoradas, a veces ni siquiera mencionadas. La teoría semántico-conceptual desarrollada por Ray Jackendoff (1983, 1987, 1990) presenta la primera alternativa factible a las estrategias sintácticas descendientes de la teoría de Chomsky. En este trabajo examinaré la voz media y mostraré cómo diversos análisis de estas construcciones desde la perspectiva de la teoría de la Rección y el Ligamiento no consiguen explicar gran parte importante de los datos. Espero convencer al lector de que el análisis de este fenómeno desde una perspectiva semántico-conceptual puede proporcionar una solución más atractiva que integra completamente las generalizaciones tanto sintácticas como semánticas.

PALABRAS CLAVES: oraciones medias; estructura conceptual; argumento; papel temático; agentividad.

SUMARIO: 1. Introducción. 2. Introducción a la semántica conceptual. 3. Algunas propuestas actuales de la voz media. 4. Análisis semántico-conceptual de la voz media en inglés. 5. Conclusión.

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MOYEN PHRASES: UN ARGUMENT POUR LA STRUCTURE CONCEPTUELLE

RÉSUMÉ: Notre hypothèse est que dans l'identification des référents des expressions nominales contenues dans les énoncés exige le traitement parallèle de la structure morphosyntaxique, basée sur un ensemble de mécanismes inférentiels impliqués principalement dans la catégorie de procédure, comme défini par la théorie de la pertinence (Sperber & Wilson, 1996 et 2004). La représentation sémantique provient de l'interaction entre la dérivation de la représentation syntaxique sémantique et pragmatique des mécanismes d'interprétation par lequel vous obtenez une pleine forme propositionnelle, proposée par l'obtention des implications contextuelles (explicatures), cette forme complète propositionnel peut être attribué conditions de vérité. Nous cherchons à établir les catégories de procédure liées à la allocation de référence et comment agir sur les expressions de base nominale et D (terminante). Nous essayons de démontrer que le montant de référence d'une expression nominale ne dépend pas seulement de contenant si ou non un D ou des traits contenues dans cet élément linguistique.

MOTS CLÉS: phrases du milieu; la structure conceptuelle; l'argumen; rôle thématique; agentivité.

SOMMAIRE: 1. Introduction. 2. Introduction à la sémantique conceptuelle. 3. Certaines propositions actuelles de la voix moyenne. 4. Sémantique-conceptuel d'analyse de la voix du milieu en anglais. 5. Conclusion.

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1. INTRODUCTION

It would be difficult to overstate the progress which has been made in linguistic research since the publication of Chomsky's *Syntactic Structures*. The publication of this work began a tradition of syntactic research that has advanced our knowledge of language at an enormously rapid pace. However, in the absence of an equally well-articulated theory of semantics, many of the descendants of *Syntactic Structures*, particularly Chomsky's Government and Binding theory, have been forced to incorporate many semantic notions into what are essentially syntactic theories. As a result, some constructions are either described unconvincingly, or are only half-described.

A construction which is only partly described is the middle voice. Some semantic and discourse generalizations which are integral to the meaning of the construction are just set aside, if they are mentioned at all. Unfortunately, constantly deferring semantics until some future date not only does not solve the problem, but also will ultimately prevent the problem from ever being addressed. As Ray Jackendoff (1990: 3) notes,

Lamentably, the practice in the literature for the most part has been to match a highly formalized syntactic structure with a highly informal conceptual structure, specified only in taxonomic terms such as Agent, Patient, and Theme. Such practice tacitly discourages solutions other than those using the syntactic strategy, since any solution that makes essential use of properties of conceptual structure will by necessity be imprecise and informal.

The theory of conceptual semantics developed by Ray Jackendoff (1983, 1987, 1990) presents the first viable alternative to the syntactic strategy. Its rules for building up semantic representations are explicit and formal. Importantly, thematic roles have no independent existence. The terms Goal, Theme, Agent, etc. refer to specific positions in the semantic representation, instead of referring to whatever the writer has in mind at the time. In short, I believe that conceptual semantics is a way to restore a more equitable and more convincing division of labour between the syntactic and semantic components.

The choice of the middle voice to illustrate some of the problems with Government and Binding theory is not arbitrary. In this paper I will examine the middle voice, show how several Government and Binding analyses of these constructions fail to account for important parts of the

data, and hopefully persuade the reader that a conceptual structure analysis of this phenomenon provides a more appealing solution which more fully integrates the syntactic and semantic generalizations. The inner semantics of sentences can be approached with a rigor which is sufficient to allow the researcher to say something interesting, and I intend to push it as far as I can.

In Section 2 I introduce a simplified version of the theory of lexical conceptual structure proposed by Ray Jackendoff in order to acquaint the reader with the formalism which will be used throughout this paper. In Sections 3 and 4, I critically review several current proposals for middle voice formation in English, and then present a conceptual structure analysis which can account for both the syntactic and the semantic observations.

2. AN INTRODUCTION TO CONCEPTUAL SEMANTICS

The view of lexical conceptual structure which I shall adopt for this paper derives entirely from Jackendoff (1983, 1987, 1990). I have chosen to present a somewhat simplified version, however. This is done strictly for convenience, as my analysis does not depend on many of the more complex aspects of Jackendoff's system. I should also note that what I am using I am accepting relatively uncritically. An exposition as well as a critique that would do justice to the material is beyond the scope of this paper.

The lexical conceptual structure of a category consists of two parts. In the spirit of autosegmental phonology, there are two "tiers" within the lexical conceptual structure: the thematic tier and the affectedness tier.¹ The first level is the thematic tier, which encodes information about causation, motion, and location. The affectedness tier encodes relations between Actors and Patients.

2.1. THE THEMATIC TIER

Rules for the formation of the thematic tier include a set of semantically primitive ontological categories such as thing, event, state, and path. Some rules for expanding basic categories into more complex ones include the following:

(1a) [PLACE] --> [Place PLACE-FUNCTION ((THING))]²

(1b) [PATH] --> [Path PATH-FUNCTION ((THING/PLACE))]³

¹ There is a third tier, the timing tier, which is introduced in Jackendoff (1987). Its specifics are unimportant for my discussion.

² Place functions include primitives such as AT, IN, and ON.

³ Path functions include primitives such as TO, TOWARD, and VIA.

- (1c) [EVENT] --> [Event GO ((THING), [PATH])]
 (1d) [STATE] --> [State BE ((THING), [PLACE])]
 (1e) [EVENT] --> [Event CAUSE/LET ((THING/EVENT), [EVENT])]⁴

All maximal projections in the syntax correspond to a conceptual constituent of one of these major ontological categories. In most cases, PPs correspond to paths or places, an NP corresponds to a thing, and S and VP correspond to events or states.

As an example, take the sentence in (2) and its conceptual structure representation in (3).

- (2) [S [NP John] [VP sent [NP the package] [PP to Bangor]]]
 (3) [Event CAUSE ([Thing John], [Event GO ([Thing the package], [Path TO ([Thing Bangor])]])])

The S corresponds to the entire event. The first argument of CAUSE is the subject. The VP corresponds to the lower event headed by GO. The direct object, the thing in motion, is the first argument of GO. The path that the direct object follows corresponds to the second argument of GO, which is filled by the PP.

2.2. THE AFFECTEDNESS TIER

The affectedness tier consists of one function: AFF. The first argument of AFF is termed the Actor. If this Actor is volitional, the notation (+VOL) is added to the AFF function. The second is termed the Patient. These arguments encode essentially who is doing what to whom or for whom. Either or both of these arguments are optional, depending on the verb. The tests for the presence of them are the following:

- (4) For Actor: What NP did was ...
 (5) For Patient: (a) What happened to NP was ...
 (b) What X did to/for/with NP was ...⁵

Applying these tests to the above example, we can see that, in the representation in (3), the NP *John* is the Actor and the NP *the package* is the Patient.

- (6a) What John did was send the package to Bangor.

⁴ A more exhaustive list can be found in Jackendoff (1990). I have included only those expansions which are relevant to my paper.

⁵ I am not really convinced that these two tests for Patient test the same thing, but they are the only tests for this position given by Jackendoff. I will tend to use (5a) when needed in Section 3 as it is the simpler of the two.

(6b) What happened to the package was John sent it to Bangor.

Therefore, the complete conceptual structure representation for the sentence in (2) would be (7).

(7) [Event CAUSE ([Thing John], [Event GO ([Thing the package], [Path TO ([Thing Bangor])]])])
 AFF (+VOL) ([John], [the package])

However, to reduce redundant information, and to express the necessary “binding relations” between the thematic and the affectedness tier, the actual placement of NPs on the affectedness tier is replaced by Greek-letter variables coindexing with the relevant position on the thematic tier. That would change the representation in (7) to that of (8).

(8) [Event CAUSE ([Thing John]^α, [Event GO ([Thing the package]^β, [Path TO ([Thing Bangor])]])])
 AFF (+VOL) ([α], [β])

2.3. THE BUILDING UP OF CONCEPTUAL STRUCTURE

To see how this conceptual structure representation is built up, the first thing to examine is the lexical entry for those parts of the sentence which have lexical conceptual structure. In this case the lexical entry for the matrix verb in (2) would be (9).

(9) send:

[-N, +V]
 ___ NP_j <to PP_k>
 [Event CAUSE ([Thing]^α_i, [Event GO ([Thing]^β_j, [Path TO ([Thing]_{<k>})])])]
 AFF (+VOL) ([α], [β])

Besides the conceptual structure, the lexical entry contains the item’s grammatical category and its subcategorization frame. The subcategorization frame is interpreted in the following way: *Send* requires an NP direct object and can take an optional PP. If that option is not chosen, the path is simply left implicit. That is to say, “John sent the package” implies that the package had some destination. Linking between the subcategorization frame and conceptual structure is stipulated by Roman letter subscripts. The *i* subscript by definition indicates linking to the subject, or external argument position. While I do believe that there are linking regularities between conceptual structure and the rest of the grammar, a thorough investigation of them is beyond the scope of this paper.

2.4. THE TREATMENT OF THEMATIC ROLES

An important aspect of Jackendoff's system is its treatment of thematic roles. For Jackendoff, thematic roles have no independent existence outside of conceptual structure. For example, instead of having an NP be assigned the Goal θ -role, that NP is simply the first argument of the TO function in conceptual structure. Following Gruber (1965), who defines the Theme as the object in motion, the term Theme refers to the first argument of GO. A thematic role which will figure prominently in my analysis is the Agent θ -role. In Jackendoff's system it breaks down into two semi-autonomous parts: the Actor (first argument of AFF) and the extrinsic Instigator (first argument of CAUSE). I will occasionally use the term θ -role as a shorthand reference for a position in conceptual structure, but this is for convenience only.

Returning to the sentence in (2) and its final conceptual structure representation in (8) (reprinted below), one would traditionally say that the NP *John* was assigned the Agent θ -role.

(2) [s [NP John] [VP sent [NP the package] [PP to Bangor]]]

(8) [Event CAUSE ([Thing John] ^{α} , [Event GO ([Thing the package] ^{β} ,
 [Path TO ([Thing Bangor]_{<k>})])))]
 AFF (+VOL) ([α], [β])

Translating this into conceptual structure terms, it is the first argument of CAUSE, which is linked to the Actor position on the affectedness tier. The NP *the package* is the Theme, because it appears as the first argument of GO on the thematic tier. Note that it is also the Patient, as the first argument of GO is linked to the second argument of AFF. The NP *Bangor*, being the first argument of the TO function, is the Goal.

2.5. LINKING TO THE SUBCATEGORIZATION FRAME

I should mention at this point the one major departure from Jackendoff's notation that I will be making. Although his examples often indicates linking indices on the thematic tier, in order to facilitate capturing linking regularities, Jackendoff finally decides that linking from conceptual structure to the subcategorization frame is from the affectedness tier. A problem with this approach is that there appear to be verbs which do not have an affectedness tier.⁶ *Receive* is one such verb.

⁶ Jackendoff (1990) argues that *receive* does in fact have an affectedness tier which takes the form of (i).

(10) John received the package.

(11a) *What John did was receive the package.

(11b) *What happened to the package was John received it.

(11c) *What happened to John was that he received the package.

These tests appear to indicate that, in (10), *John* is neither an Actor nor a Patient, and that *the package* is not a Patient. I believe that (11a) and (11b) are wholly ungrammatical, and that (11c) is only grammatical on the interpretation that the receipt of the package had some further effect. Since this specific interpretation is not an essential part of the meaning of the verb *receive*, I conclude that (11c) is truly ungrammatical as well.

Having sketched the outlines of Jackendoff's theory of conceptual semantics, I shall temporarily defer its application. Instead, I would like to turn now to a critical examination of several proposals for the middle voice within the Government and Binding framework, as a prelude to a conceptual structure analysis in Section 4.

3. SOME CURRENT PROPOSALS FOR THE MIDDLE VOICE

The middle voice is a construction which seems to have many semantic properties, but which has traditionally been the subject of a syntactic analysis. In Section 3.1 I will lay out the basic facts of the middle voice in English that I believe that an account should explain. In Sections 3.2 and 3.3, I will examine Fagan (1988) and Roberts (1987), which are two accounts within the framework of Government and Binding theory.⁷ Fagan and Roberts actually share some of the same objections, so I will present those objections together in Section 3.4. In Section 3.5 I will examine Hale and Keyser (1987), which is an account which does make reference to lexical conceptual structure, but in a far less detailed way than Jackendoff. I hope to show that all three of these analyses do not account for crucial parts of the data, partly owing to the Government and Binding theory's impoverished system of thematic relations. This will set the stage

(i) AFF ([], [β])

His argument proceeds in the following way: it is clear that the verb *give* has a benefactive Patient.

(ii) What John did for Bill was give him a book.

Therefore, since *give* is the causative alternate of *receive*, then *receive* should have a benefactive Patient as well, resulting in the affectedness tier in (i).

First, I am not absolutely convinced that *give* is in fact the causative alternate of *receive*. Second, even if it is, I am troubled by the inability of the tests for Patient to reveal this benefactive Patient.

⁷ The one major Government and Binding theory treatment of middles which I will not discuss is Keyser and Roeper (1984) for the reason that is critiqued quite extensively in Fagan (1988).

once again for an explanation in terms of conceptual semantics in Section 4.

3.1. THE MIDDLE VOICE IN ENGLISH

At first glance, the middle voice might seem similar to the passive construction in that the verb is no longer able to assign accusative case and the Agent θ -role is suppressed. Unlike passives, however, the Agent can never be expressed, although it is felt to be present. Furthermore, there is some feeling, to my knowledge first observed in Van Oosten (1977), that the Patient is somehow responsible for the action of the predicate.

(12) Soft bread cuts easily.

(13) Soft bread cuts steak easily.

(14) *Soft bread cuts easily by John.

(12) is simply an ordinary example of the middle voice construction. As soon as a direct object in the accusative case is added, however, the sentence loses its middle interpretation and becomes a normal, if pragmatically odd, transitive sentence. When an Agent is added, the sentence becomes completely unacceptable.

There are some very rigid limitations on what types of verbs can form acceptable middles. It seems that only transitive verbs will form good middles. But even within transitive verbs it seems that both verbs of permissive agency, as in (16), and verbs which do not assign the Agent θ -role to their subjects, as in (17), will not form good middles.

(15) *Fast trains arrive with no trouble.

(16) *The VIPs admitted to the function with no trouble.

(17) *Hard contact lenses lose easily.

While it is possible that (15) could be grammatical, it would be on an unaccusative reading, not on a middle reading such as (18). The others are unacceptable on any interpretation, I believe.

(18) *Fast trains are arrivable with no trouble.

A second interesting fact about middle voice, at least in English, is that many unacceptable middle voice sentences ameliorate when placed in certain discourse contexts.

(19a) *Small towns level easily.

(19b) Large towns are hard to level. They have strong defences and sturdy buildings. On the other hand, $\text{?}/\checkmark$ small towns level easily.

If Van Oosten is correct to say that the use of the middle voice is an assertion by the speaker that properties of the surface subject are responsible for the action denoted by the predicate, then placing a middle voice sentence where it would be more likely that this could be the case should improve the judgement of the sentence. However, no current analysis of the middle voice even mentions this possibility.

3.2. A CRITICAL ANALYSIS OF FAGAN (1988)

Unlike the standard Government and Binding approach, which treats middle voice formation as a syntactic rule similar to passive, Fagan (1988) sees middle voice formation as a lexical rule related to a general process termed “genericization”. In these genericized sentences, the expected direct internal argument is syntactically absent, but is interpreted generically, as “something,” or “everything.” See Fagan (1988: 196).

(20) Managers manage.

(21) Fire destroys.

Following Rizzi (1986), she believes that this process of genericization involves “saturating” a θ -role in the lexicon with a rule such as (22).

(22) Assign *arb* to the direct internal θ -role.

To account for the fact that “saturated” θ -roles are not syntactically realized, Rizzi proposes that the Projection Principle applies only to lexically unsaturated θ -roles.

Fagan believes that the rule for middle voice formation involves the following variant of the rule in (22).

(23) Assign *arb* to the external θ -role.

However, in middle constructions, it is not the case that there is no subject. To account for the fact that the direct internal argument is realized as the surface subject, Fagan adds (24) as part of the lexical rule for middle voice formation.

(24) Externalize the direct θ -role.

3.2.1. SOME OBJECTIONS TO FAGAN’S ANALYSIS

One problem with this analysis, especially the rule in (23), is that it is a strictly mechanistic operation on the argument structure of a verb. It blindly accepts any input, and predicts that any verb which has an external argument and a direct internal argument should form an acceptable middle. It predicts that (25) and (26) should be acceptable.

(25) *Air mail letters receive easily.

(26) *Hard contact lenses lose easily.⁸

The descriptive generalization appears to be that only verbs which assign the Agent θ -role to their subjects will form acceptable middles, and this analysis will not capture it.

Fagan does not wish to specify that (23) applies only to external arguments which are Agents because of sentences such as (27) and (28).

(27) John is such a prude. He shocks easily.

(28) Nervous people generally surprise easily.

She believes that verbs of this type in their active form take Theme subjects and Experiencer objects, and if (23) applies only to those external arguments which are Agents, (27) and (28) will be ruled out. However, verbs such as *shock*, *surprise*, and *excite* are actually ambiguous between causative and non-causative readings, i.e. one in which the external argument is assigned the Agent θ -role and one in which it is assigned another role, perhaps the Theme θ -role.

(29) John surprised me.

i.e. John jumped out of the bushes and said "Boo!"

(30) John surprised me.

i.e. John had some characteristic that I did not expect.

It seems clear that *John* is an Agent in (29), so one might say that the middle constructions formed from these verbs are derived from the causative alternates. Fagan then might be able to amend (23) so that it applies only to external arguments that are Agents. The problem is that even amending her analysis in this way does not really explain the descriptive generalization. It simply restates it.

⁸ Note that I am distinguishing these cases from sentences such as **Small towns level easily*, which I believe are well-formed, but ruled out for semantic reasons, and can be acceptable in certain contexts.

3.3. A CRITICAL ANALYSIS OF ROBERTS (1987)

As was mentioned above, an analysis which is somewhat similar to Fagan is presented in Roberts (1987). Roberts, following Keyser and Roeper (1984), believes that middle voice formation is analogous to passive formation. It involves a variant of the externalization rule from Williams (1981). The rule states the following:

- (31) E(X): Erase the underline on the external argument, if there is one; and underline X. If X=0, then underline nothing.

The variant proposed by Roberts is called Externalize Theme. This rule would operate on a verb's θ -grid in the manner indicated in (32). See Roberts (1987: 358).

- (32) kill:

[⁰AGENT, ⁰THEME] --> [⁰AGENT, ⁰THEME]

3.3.1. SOME OBJECTIONS TO ROBERTS'S ANALYSIS

Since the rule in (32) is actually called "Externalize Theme," a potential counterexample to this generalization would be a verb which does not assign the Theme θ -role to its object but still forms a good middle. One possibility might be verbs like (27) and (28) above: *surprise*, *shock*, and *excite*. If Fagan is correct to claim that these verbs assign Experiencer θ -role to their objects, these would form an entire class of counterexamples to Roberts's rule.

A more important problem is this question: what happens to the Agent θ -role after the rule Externalize Theme takes place? It cannot remain assigned to the external argument. This would violate the θ -Criterion as both the Agent θ -role and the Theme θ -role would be being assigned to the same lexical item. It cannot be some internal argument because then it should be assigned to some internal position, following the Projection Principle. The Agent θ -role cannot be deleted either. Such a deletion would leave no explanation for the agency which is felt to exist in middle constructions.

In order to solve this problem, Roberts introduces a term from Relational Grammar: the *chômeur* θ -role. According to Roberts, a θ -role becomes a *chômeur* when a lexical rule changes its realization without deleting it. A *chômeur* θ -role can only be realized in non-subcategorized VP-internal positions, such as *by*-phrases.

This still leaves unanswered the question of why the Agent θ -role does not show up in a *by*-phrase, like passive. Roberts explains that the *chômeur* θ -role cannot be realized because of conditions on aspectual interpretation. He argues quite convincingly that middle constructions are stative, but then defines a predicate as having a stative interpretation only if it does not assign the Agent θ -role (Roberts, 1987: 376).

3.4. SOME OBJECTIONS COMMON TO FAGAN AND ROBERTS

By virtue of being essentially lexical rather than syntactic accounts, both Fagan's and Roberts's analysis inherits several problems common to a lexical analysis of the middle construction. First, they offer no explanation for middle resultative sentences. It appears as though resultatives must be licensed by some object. Even NP-trace will suffice. (33) and (34) are grammatical, but (35) is not acceptable.

(33) Bill beat Rick senseless.

(34) Rick was beaten *t* senseless.

(35) *Bill beats senseless.

In Fagan and Roberts, the direct internal argument is externalized either in the lexicon or at argument structure. This makes verbs in the middle voice unergative, like *sleep*. No difference in acceptability is predicted between (36) and (37).

(36) *John laughs sick.
i.e. John laughs himself sick.

(37) Soft bread cuts into thin slices with no trouble at all.

The judgements of these sentences are clear. (37) is perfect, whereas (36) is almost unprocessable. If middles only have one argument at D-structure, the way in which middle resultatives are licensed is unclear.⁹

Furthermore, by their analyses, both Fagan and Roberts make the claim that all middle constructions are syntactically intransitive at S-structure. This claim does not appear to be empirically correct. There exist so-called middle reflexive sentences, exemplified by (38) and (39).

(38) Once you have all of your quotations, the paper essentially writes itself.

⁹ For a more thorough treatment of resultatives in a variety of contexts, see Carrier and Randall (1988).

(39) The Ginsu knife is so sharp that bread virtually cuts itself.

The argument cannot be made that (38) and (39) are normal transitive sentences. First, *the paper* in (38) and *bread* in (39) are not what are doing the writing and the cutting respectively. Semantically, they appear to be direct objects which have been moved to subject position. Second, the syntactically realized direct object in middle reflexives does not license a resultative, as it would in a normal transitive sentence.

(40) John is so clumsy that he virtually cut himself to pieces with his new chainsaw.

(41) *This bread is so soft that it virtually cuts itself into thin slices.

Again, if the verb has only one argument, the way in which middle reflexives are generated is not clear. It cannot be that somehow the verb retains its ability to assign structural accusative case after the direct internal argument is externalized. When some other NP is placed in direct object position, the sentence loses its middle reading.

(42) This bread is so soft that it cuts wood with no trouble.

This sentence only has normal transitive, albeit semantically anomalous, interpretation. Admittedly, something strange seems to be going on, but it seems unclear how either Fagan's and Roberts's analysis might be extended to account for it.

3.5. A CRITICAL ANALYSIS OF HALE AND KEYSER (1987)

Hale and Keyser (1987) offer an explanation of the middle construction which differs fairly sharply from that of Fagan or Roberts. They believe that middles are a subclass of ergative verbs. Ergative verbs are defined as those verbs which have the following general structure to their lexical conceptual structure (LCS):

(43) [*x* CAUSE [*y* UNDERGO CHANGE] by ...]

The material in the inner bracket is referred to as the *central event*. The participant *y* in the central event is called the *central participant*. Given these definitions, Hale and Keyser propose the following condition on middle formation:

(44) A dyadic verb *V* may form a middle if and only if its object is θ -committed by the central participant in the LCS of *V*.

In other words, any two-argument transitive verb where the central participant *y* is overtly realized as an object with a θ -role assigned to it should be able to participate in middle voice formation.

The actual rule for middle formation is quite simple. It strips away the outer cause function, which deletes the Agent θ -role. This leaves only the central event. Hale and Keyser term this the Ergative-Middle alternation.

3.5.1. SOME OBJECTIONS TO HALE AND KEYSER'S ANALYSIS

As Hale and Keyser themselves note, one problem for their analysis is the interpretation of *with*-instrumentals.

(45) The toughest carrots virtually slice themselves with this handy tool.

(46) The hardest granite practically crushes itself with this new hammer.

With-instrumentals are generally interpreted as referring to the Agent of the sentence. This is a problem as Hale and Keyser's rule for middle formation strips away the outer cause function, deleting the Agent θ -role. This would leave an LCS resembling (47).

(47) [[*y* UNDERGO CHANGE] by ...]

After middle formation has taken place, there is nothing left in the LCS of the verb with which the *with*-instrumental can be interpreted, not even an implied Agent.

To solve the problem, Hale and Keyser make the claim that *with*-instrumentals have some inherent reference. To them, the existence of an instrumental in and of itself implies some Agent, and it is this Agent with which the instrumental is interpreted. The problem is that *with*-instrumentals do not seem to have this quality of inherent reference. If this were true, there should be no difference between the (a) and (b) sentences in (48) and (49).

(48a) The ship was sunk with a torpedo.

(48b) *The ship sank with a torpedo.

(49a) The vase was broken with a hammer.

(49b) *The vase broke with a hammer.

I believe that it is precisely the fact that in the (a) sentences there is some agentive material in the conceptual structure of the verb with which the instrument can be interpreted, while in the (b) sentences there is not. However, if the position is taken that *with*-instrumentals have some inherent reference, then the contrast in (48) and (49) cannot be explained.

A related problem is that this same feeling of agency is still present in middle constructions even when a *with*-instrumental is not present. They reconcile the apparent syntactic absence of the Agent with the feeling that it does exist by postulating a “means clause” in the LCS of some verbs. For example, they represent the verb *cut* in the following manner:

(50) *cut*:

[*x* cause [*y* develop linear separation in material integrity] by sharp edge coming into contact with the latter].

The means clause in the above example, *by sharp edge coming into contact with the latter*, does not assign any θ -role, nor does it have any strictly syntactic relevance, but Hale and Keyser claim that it is an independent, integral part of the meaning of the verb *cut*. The agency which is felt when *cut* has a middle reading arises from this means clause, which by its nature implies an Agent.

The problem with this solution to the agency question is simply that there are verbs which do form acceptable middles, but which do not seem to have a means clause as an independent, integral part of their meaning. Verbs such as *drink*, *read*, and *surprise* most immediately suggest themselves. For example, if *surprise* were to have a means clause in its LCS, the LCS would have to look something like (51).

(51) [*x* cause [*y* become surprised] by doing something which surprised the latter].

This representation seems redundant. In particular, the information in the means clause seems like part of what is represented by *cause*. The means clause does not feel like an integral, yet independent meaning of the verb.

Furthermore, like Fagan’s and Roberts’s analysis, Hale and Keyser’s analysis cannot account for the middle reflexive sentences in (38) and (39), and the contrast between (40) and (41). A lexical rule operates, in the case of Hale and Keyser, removing the verb’s external argument. However, at S-structure, the verb at least superficially has two arguments. This type of sentence, where two internal arguments are apparently being realized syntactically, has no obvious explanation.

4. A CONCEPTUAL SEMANTICS ANALYSIS OF THE MIDDLE VOICE IN ENGLISH

Current explanations for the middle voice seem unable to account for many semantic facts which I feel are central to the construction. However, until Jackendoff’s work there was not a system of semantic representations that was sufficiently formalized to allow a detailed analysis to be undertaken. Now that such formalism exists, many elusive facts can

be captured, and a more equitable division between what is syntactic and what is semantic can be created. Section 4.1 will offer a conceptual structure explanation for what verbs can and cannot form good middles. Section 4.2 will examine the conceptual structure representation which results from the rule of middle voice formation.

4.1. PARTICIPATION IN MIDDLE VOICE FORMATION

The first problem that I would like to address is an explanation for the descriptive facts in Section 3; that is, what verbs are able to participate in middle voice formation. To that end I propose the following template. Any verb whose LCS takes the form in (52) should form a grammatical middle.

$$(52) \text{ [Event CAUSE ([Thing]^\alpha_i, [Event GO ([Thing]\{\beta_j\}, [Path TO ([Thing]\{\beta_j\})])])]}^{\text{10}}$$

$$\text{AFF (+VOL) } ([\alpha], [\beta])$$

The rule of middle voice formation will first eliminate the *i* index on the first argument of CAUSE precisely as in passive formation. It will then take the *j*-indexed argument and link it to the Actor position on the affectedness tier. This will disrupt the \square coindexation with the first argument of CAUSE, and the structure in (53) will be the result.

$$(53) \text{ [Event CAUSE ([Thing], [Event GO ([Thing]\{\beta_j\}, [Path TO ([Thing]\{\beta_j\})])])]}$$

$$\text{AFF (+VOL) } ([\beta], [\beta])$$

After argument fusion has taken place, the final structure will be put through an interpretive component which will evaluate the sentence based on Van Oosten's generalization; that is, the extent to which the surface subject can be held accountable for the action of the predicate, and assign it an acceptability judgement accordingly.

The template in (52) appears to make quite a few stipulations about what verbs can form the middle voice. It is certainly a complex representation. However, we can derive it in its entirety by making only two stipulations about what verbs can and cannot form middles. The rest

¹⁰ The curly brackets are intended to indicate that either the first argument of GO or the first argument of the path function (TO is simply a placeholder) links to the verb's direct internal argument, but not both. I will primarily use verbs in which the first argument of GO links to the direct internal argument, but this is simply for convenience.

An example of a verb which forms a good middle but where the first argument of the path function links to the direct internal argument is the verb *butter*. An example of its middle use is in (iii) and the conceptual structure of the normal transitive verb is given in (iv).

- (iii) Wonder Bread butters quite easily.
 (iv) $\text{[Event CAUSE ([Thing]^\alpha_i, [Event GO ([Thing] \text{BUTTER}), [Path TO ([Thing]^\beta_j)])]}$
 $\text{AFF (+VOL) } ([\alpha], [\beta])$

of the observations about what verbs can and cannot form good middles will then fall out of the derived representation.

The first stipulation is that only verbs which assign the Agent θ -role to their subjects can form good middles.¹¹ This appears to be descriptively correct.

(54) *Small packages receive easily.

(55) *John arrives easily.¹²

(56) *Large objects see easily.

In the above sentences, the active verb *receive* assigns the Goal \square -role to its subject, *arrive* assigns the Theme θ -role, and *see* assigns the Experience θ -role.

This one stipulation will provide almost all of the representation. Recall that the traditional notion of the Agent θ -role is broken up in Jackendoff's system into the semi-autonomous first argument of CAUSE and first argument of AFF. If the Agent θ -role must be present, then the first argument of CAUSE and the first argument of AFF must be present in conceptual structure. The only basic conceptual structure representation which contains both CAUSE and AFF is the one in (57).¹³

(57) [Event CAUSE ([Thing] ^{α} _i, [Event GO ([Thing] ^{β} _{jj}, [Path TO ([Thing] ^{$\langle k \rangle$})])])]
 AFF (+VOL) ([α], [β])

However, this representation as it stands predicts that three-argument verbs should form good middles, and they do not.

(58) *Small books put on shelves with no trouble.

So the other needed stipulation is that three-argument verbs do not form good middles, but either the first argument of GO or the first argument of the path function can link to the direct internal argument in the subcategorization frame. This will leave us with the representation in (59), which is the same as the representation in (52).

(59) [Event CAUSE ([Thing] ^{α} _i, [Event GO ([Thing] ^{β} _{jj}, [Path TO ([Thing] ^{β} _{jj})])])]
 AFF (+VOL) ([α], [β])

¹¹ I do not believe that θ -roles have any independent existence. I am using the term Agent \square -role simply to get at a descriptive generalization.

¹² On the middle reading of **John is easily arrivable*.

¹³ The basic conceptual structure representations to which I refer are the ones listed in (1) of Section 2.

Now that we have derived the representation in (52) by stipulating only two facts about what verbs can form good middles, we are in a position to claim that the remaining ones do not need to be stipulated. We can claim that they simply fall out of the representation in (59).

Given this representation, verbs of permissive agency are predicted to be ungrammatical. In such verbs, the outer event function is not CAUSE, but LET. Since a verb with an outer function of LET in its LCS does not fit the template, all such verbs should not form acceptable middles.

(60) *The VIPs admitted to the meeting with no trouble.

(61) *Leaves grant easily to soldiers who have been at the front.

These sentences do not seem to be acceptable under any interpretation. Another class of verbs which should not be able to form good middles are monadic verbs. This appears to be descriptively accurate. (62a) and (63a), while grammatical on the unaccusative or unergative reading, are ungrammatical on the middle reading of (62b) and (63b).

(62a) John arrives easily.

(62b)*John is easily arrivable.¹⁴

(63a) Bill sleeps easily.

(63b)*Bill is easily sleepable.

The template in (59) specifies that the verb's LCS contain both an *i* index and a *j* index, and unaccusative verbs will lack the former while unergatives will lack the latter.

The template also predicts that stative verbs should not form good middles. Since CAUSE is an event, and since CAUSE is the highest function in the template in (57), any verb which also has CAUSE as its highest function in LCS will not be stative.

4.2. THE OUTPUT OF THE MIDDLE FORMATION RULE

Having discussed the template in (52), I would like now to turn to the conceptual structure in (53), which is what results after the rule of middle voice formation operates on the template in (52) ((53) is reprinted below for convenience).

(53) [Event CAUSE ([Thing]_i, [Event GO ([Thing]_j^β, [Path TO ([Thing]_i^α)])])])]
 AFF (+VOL) ([β], [β])¹⁵

¹⁴ I am not explicitly stating that -able is a test for the middle voice. I do not believe that it is. However, in these cases it happens to convey the same meaning as a middle.

¹⁵ I should mention here that this linking of one argument on the thematic tier to two positions on the affectedness tier is a slight departure from Jackendoff. He does, however,

Admittedly, (53) is a rather curious structure. The first argument of CAUSE is an implicit argument that has no surface realization, and the *j*-indexed NP is coindexed with both positions on the affectedness tier. I would like to devote this section to showing that, at least from a descriptive point of view, this is the way that middles must be represented given the formalism available, and that the two main changes do account for all the syntactic and semantic observations about the constructions.

4.2.1. THE IMPLICIT FIRST ARGUMENT OF CAUSE

The first curiosity in the above structure that I would like to defend is the first argument of CAUSE. The representation in (53) shows it to be an implicit argument that is not linked to any other position in conceptual structure and which has no surface realization. A natural question then follows: what evidence is there for it? Why say that it exists at all? There are essentially two reasons. One is speakers' intuitions. The other is the interpretation of *with*-instrumentals in the middle construction.

The first argument for the existence of this implicit argument is based on speakers' intuitions. Speakers have a sense that some agentivity is present middles, even though that Agent can never be overtly realized. It would be nice if the conceptual structure representation reflected this in some way since presumably this is the level from which speakers receive all of the thematic information about the sentence. The first argument of CAUSE is certainly one likely position where such inexpressible agentivity might be located.

The second argument, and the one which can pin the location of this Agent down precisely, comes from the interpretation of *with*-instrumentals in middles. *With*-instrumentals in general appear to be construed with the Agent of the sentence, even when that Agent is not structurally represented.

(64a) John hit Bill with a baseball bat.

(64b) Bill was hit with a baseball bat.

However, in Jackendoff's formalism, what is traditionally regarded as the Agent is broken down into two parts: the first argument of CAUSE, the external Instigator, and the first argument of AFF, the Actor.

One way to test which conceptual structure position is the one which *with*-instrumentals refer to would be to find a verb which does not have one position or the other in its LCS. While I do not believe that there are

give several examples of conceptual structures where an argument on the thematic tier is bound by Greek-letter variable to another argument on the thematic tier, so I see this as a logical extension.

any verbs which have extrinsic Instigators but no Actor, there are verbs which have Actors without extrinsic Instigators. Unaccusative verbs are one class of verbs which fit that description. The sentence in (65) would have its conceptual structure represented by (66) after argument fusion.

(65) John arrived.

(66) [Event GO ([Thing John]^α, [Path TO ([Place HERE]])^β)]¹⁶
AFF (+VOL) ([α])

The fact that the surface subject of *arrive* is an Actor can be demonstrated by using Jackendoff's test for Actors.

(67) What John did was arrive.

This sentence is perfect. Therefore, if the part of the Agent that *with*-instrumentals are construed with is the Actor, then a *with*-instrumental should be acceptable with a verb like *arrive*. It is not.

(68) *John arrived with his car.

The sentence in (68) only has the interpretation of accompaniment; that is, it does not mean that John used his car to arrive.

It is not simply that there must be some function superordinate to GO, however. Only the CAUSE function is acceptable. Verbs of permissive agency are headed by the primitive LET as opposed to CAUSE in conceptual structure. *With*-instrumentals are not acceptable with verbs of permissive agency either. In (69a), for example, *the general* is clearly an Actor, as shown by (69b), but it is not acceptable. The LCS and subcategorization frame for *grant* is given in (70).

(69a) *The general granted a leave of absence with an order.

(69b) What the general did was grant a leave of absence.

(70) grant:
[-N, +V]
___ NP_j <to NP_k>
[Event LET ([Thing]^α, [Event GO ([Thing]^β, [Path TO ([Thing]_{<k>}]])^γ)]
AFF (+VOL) ([α], [β])

¹⁶ While Jackendoff (1990) rejects that claim that the surface subjects of unaccusative verbs begin as internal arguments, I am adopting the traditional analysis of unaccusatives here. The distinction is not crucial to my analysis.

Only when there is a CAUSE function present can *with*-instrumentals be properly interpreted, and they are construed with the first argument of CAUSE.

- (71) John sank the ship (with a torpedo).
 [Event CAUSE ([Thing John]^α, [Event GO ([Thing the ship]^β),
 [Path DOWN ([Thing SURFACE OF WATER])]])]
 AFF (+VOL) ([α], [β])

Perhaps contrary to expectations, *with*-instrumentals are perfectly acceptable in middle constructions.

- (72) This bread cuts easily with a sharp knife.
 (73) Carrots slice like magic with this handy gadget.

Like passives, these instrumentals seem to be interpreted with some implicit Agent, although that Agent can never be expressed. The simplest way to account for this is the way I have chosen: There is an implicit argument in the first argument of CAUSE which is never represented on the surface, but it is there in conceptual structure to serve as a way to interpret *with*-instrumentals.¹⁷

Further confirmation for this analysis comes from Hale and Keyser (1987), who note that when *with*-instrumentals are placed with unaccusative verbs, the tendency is to try to force a middle reading rather than an unaccusative one.

- (74) ?/*The ship sank with a torpedo.

¹⁷ I should note that this is somewhat unexpected given Jackendoff's representation of instrumentals. They exist across two affectedness tiers, being the Patient on the first and the Actor on the second. For example, the sentence in (v) would have the affectedness tiers in (vi).

(v) John sank the ship with a torpedo.
 (vi) AFF (+VOL) ([John], [a torpedo]), AFF ([a torpedo], [the ship])

Assuming for the moment that the affectedness tier of middles encodes the surface subject both as the Actor and as the Patient, as I claim, that leads us to posit the affectedness tier of (viii) for the sentence in (vii).

(vii) Soft bread cuts easily with a sharp knife.
 (viii) AFF (+VOL) ([bread], [a sharp knife]), AFF ([a sharp knife], [bread])

This is not the interpretation which I believe that middles have. It feels as though the implicit argument should be represented somewhere. However, this comes into conflict with the evidence of the various tests for Actor that I am using in the next section which indicate that *bread* is the Actor. It may be that this is the wrong way to represent instrumentals. I am simply pointing out that something seems to not be working quite as expected.

A quick comparison of the lexical conceptual structures of these verbs will explain this observation.¹⁸

(75) sink (unaccusative)
 [-N, +V]
 ___ NP_j
 [Event GO ([Thing]_j, [Path DOWN ([Thing] SURFACE OF WATER)])]
 AFF ([β])

(76) sink (middle)
 [-N, +V]
 ___ NP_j
 [Event CAUSE ([Thing], [Event GO ([Thing]_j,
 [Path DOWN ([Thing] SURFACE OF WATER)])])]]]
 AFF (+VOL) ([β], [β])

The *with*-instrumental is not possible with the unaccusative version of *sink* because there is no first argument of CAUSE with which it can be interpreted. However, at the level of the syntax, the unaccusative is only minimally different from the middle, which does have a first argument of CAUSE. So in order to properly interpret the *with*-instrumental, the hearer attempts to force a middle reading on the unaccusative.

4.2.2. THE J-INDEXED ARGUMENT AS THE FIRST ARGUMENT OF AFF

The other rather curious feature of the conceptual structure is the fact that the *j*-indexed argument appears on the affectedness tier as the Actor. Like the first argument of CAUSE, one reason for positing it is an attempt to capture speakers' intuition. However, additional support for this copying comes from the interpretation of manner adverbials.

Part of what I am trying to capture by having the *j*-indexed argument appear in both positions on the affectedness tier is Van Oosten's observation that the use of middle construction is an assertion by the speaker that the surface subject is somehow responsible in some way for the action of the predicate. This generalization is reflected in so many different ways that it seems to be some fundamental part of the meaning of the middle voice. It again would be nice if this fact could be encoded in the conceptual structure somehow. I will first survey the range of facts that Van Oosten's generalization can explain, and then I will turn to the way in which this generalization is encoded in conceptual structure.

¹⁸ Note that by doing this I am taking no position on whether or not these verbs exist as separate lexical entries.

One of the facts which Van Oosten’s “responsibility perspective” quite neatly explains is the discourse amelioration of many middle constructions, which was mentioned in Section 3.

(77a) *Small towns level easily.

(77b) Large towns are hard to level. They have strong defences and sturdy buildings. On the other hand, ?/✓small towns level easily.

(78a) *Those buildings destroy easily.

(78b) When asked about buildings built with aluminium siding, the demolitions expert said that ?/✓those buildings destroy easily.

(77a) and (78a) are ungrammatical because, in a context-free situation, it is very difficult to imagine that a town could be responsible for its levelling or a building could be responsible for its ease of destruction. However, when a sufficiently rich context is supplied, one in which it is more likely that the respective Patients can be held responsible for the action of the predicate, the sentences improve.

The responsibility perspective I believe also accounts for the interesting alternation in (79)-(81).

(79a) This bread cuts easily.

(79b) *This bread cuts.*¹⁹

(80a) This wine drinks like water.

(80b) **This wine drinks.*

(81a) This soup eats like a meal.

(81b) **This soup eats.*

These sentences are all structurally identical, so there should be no difference in grammaticality. The contrast can be explained by appealing to the responsibility perspective. There might be some quality that bread might possess that would make it difficult to cut. There is not, though, any quality about wine or soup which would make it physically impossible to ingest. Thus (80b) and (81b) are in some sense meaningless, or perhaps semantically incomplete. For example, in (81b), it makes no sense to contrast the soup under discussion from other soups by saying that it is responsible for its eating. However, all soups will not eat like a meal, and it is perfectly logical to contrast this soup with other soups by saying that some property of it makes it eat like a meal, rather than like a soup.

Another contrast which is rather mysterious unless one has recourse to the responsibility perspective (Van Oosten, 1977: 460) is seen in (82)-(85).

¹⁹ The italics are intended to indicate contrastive stress.

- (82) These clothes wash with no trouble because ...
 a. ... they are machine-washable.
 b. ... *I have lots of time.
- (83) It is no trouble to wash these clothes because ...
 a. ... they are machine-washable.
 b. ... I have lots of time.
- (84) This book reads quite easily because ...
 a. ... it has very large print.
 b. ... *I can read 1600 words per minute.
- (85) It will be easy to read this book because ...
 a. ... it has very large print.
 b. ... I can read 1600 words per minute.

Since the use of the middle construction is an assertion by the speaker that properties of the subject are responsible for the action of the verb, it appears as though the reason given in the lower S must be consistent with this assertion. If matrix S is a normal transitive clause, however, either reason is acceptable.

Having shown the broad explanatory power that the responsibility perspective has within the middle voice, I would like to turn now to that part of conceptual structure which might be causing it. I believe that the responsibility perspective is a reflection of the fact that the *j*-indexed argument (i.e. the surface subject) appears as the Actor on the affectedness tier of a verb in the middle voice.

The first thing that must be done, however, is to show that an Actor position exists at all. Middles are usually stative, so it might be a little surprising to find an Actor. An indication that Actors do exist in middles can be found by examining manner adverbials such as *quickly*, *slowly*, and *easily*. They are quite possible in middles, as demonstrated by (86).

- (86) Soft bread cuts quickly.

It appears as though manner adverbials crucially depend on the presence of an Actor on the affectedness tier in order to be acceptable.

At least intuitively, it makes sense that adverbials of manner depend on some kind of agentive element for their interpretation. They describe the way in which the Agent is performing the action. However, as is often the case, the task is to identify which half of the Agent in Jackendoff's system is the critical one. It does not appear to be the first argument of CAUSE. Verbs in their unaccusative form, such as *break* in (89), do not contain a CAUSE function.

- (87) The vase broke.

The conceptual structure representation after argument fusion would take the form of (88).

(88) [_{Event} GO ([_{Thing} vase]^β, [_{Path} TO ([_{Property} BROKEN])])]]
 AFF ([β])

Unaccusative verbs seem to freely take manner adverbials, and this would seem to indicate that the Actor is the relevant position.

(89) The vase broke easily.

One problem is that the other half of the relevant examples does not seem to exist, i.e. verbs with a first argument of CAUSE but not a first argument of AFF. There are also verbs which have no first argument of CAUSE and no first argument of AFF, and those are unacceptable with manner adverbials.

(90) *Bill received the package easily.

(91) *John hated Bill with no trouble.

I do believe that it is reasonable to infer, though, that the first argument of AFF is the relevant category for the interpretation of manner adverbials.

The question then remains: if middle voice sentences do contain Actors, then what is filling that position in conceptual structure? There really are only two choices: it could be the surface subject, or it could be some implicit argument, as would be the case in a passive.

The first reason for the *j*-indexed argument being the first argument of AFF is Jackendoff's test for Actors. Given the sentences in (92), the appropriate tests would be those in (93). Note that since Jackendoff's test for Actor implies an event, I have modified the test slightly so that it can apply to a stative verb.

(92a) Soft bread cuts with no trouble at all.

(92b) The soft bread cut with no trouble.

(93a) What soft bread ?does/✓will do is cut with no trouble

(93b) What the soft bread did was cut with no trouble.

Both sentences are a little marginal, but (93b) seems particularly so. I do believe, though, that this is partly because this quasi-eventive interpretation is quite marked in middle constructions, and if a surrounding context is provided, I believe that (93b) will improve. Given

this, I believe that both (93a) and (93b) are sufficiently acceptable to warrant saying that *soft bread* is an Actor in both (92a) and (92b).

Further evidence that the *j*-indexed argument is the first argument of AFF comes from the unacceptability of *by*-phrases with middles. As was mentioned, there are essentially two possibilities. Since it appears as though an Actor position does exist, the possible representations, again taking *sink* as an example, are (94) and (95).

(94) [Event CAUSE ([Thing]^α, [Event GO ([Thing]^β,
 [Path DOWN ([Thing SURFACE OF WATER])]])])]
 AFF (+VOL) ([α], [β])

(95) [Event CAUSE ([Thing], [Event GO ([Thing]^β,
 [Path DOWN ([Thing SURFACE OF WATER])]])])]
 AFF (+VOL) ([β], [β])

It is clear that, unlike passives, *by*-phrases are unacceptable in middle constructions, which is demonstrated in (96).

(96) *Flimsy ships sink easily by the enemy.

It is not the stativity of the construction which is blocking the *by*-phrase, since even the eventive episodic middles are unacceptable with *by*-phrases.

(97) *The soft bread cut with no trouble by John.

However, the representation in (94) is no different from the representation for the passive, since the passive operation simply erases the *i*-index, preventing a link to subject position. There would then be no explanation for the absolute unacceptability of *by*-phrases in the middle construction. Therefore, the representation in (95) would be preferred.

5. CONCLUSION

In the preceding pages, I have attempted to argue for the existence of the semantic representations proposed by Jackendoff (1983, 1987, 1990). I believe that reference to them can provide quite a natural account of the process involved in the middle voice in English. These are constructions which have been somewhat resistant to analysis by Government and Binding theory, possibly because they are constructions in which syntax and semantics are particularly intertwined, and in the absence of a formal system for semantic representations, such intertwining is particularly difficult to penetrate. However, with the advent of conceptual semantics, we are in a position to sort out in a principled way what should be handled

by the syntactic component, what should be handled by the semantic component, and how they should related to each other.

This paper has only scratched the surface of the data. One clear direction is to see how the middle voice can be fit into the broader category of detransitivized constructions cross-linguistically. Other detransitivized constructions include unaccusatives, and both impersonal and personal passives (in (98), (99), and (100) respectively).

- (98) ENGLISH: The vase broke.
(99) TURKISH: Bu köpek kulubesinden kacilir.
 This dog house-from it is run away
 "From this dog kennel it is run away"
(100) RUSSIAN: Pol' myl-sja devockoj.
 Floor-NOM was washing-REFL girl-INST
 "The floor was being washed by the girl"

The examples in (98)-(100) are taken from Perlmutter (1978). In the unaccusative sentence (98), the underlying direct object appears as the surface subject. The impersonal passive in (99) is similar. In neither case can an overt Agent be expressed. However, (99) has been formed from an underlying intransitive verb. Furthermore, there is a feeling of agency which is present in the impersonal passive which is not present in the unaccusative. (99) can only be interpreted as meaning that humans ran away from the dog kennel. There is no such restriction on the unaccusative. (100) is a simple personal reflexive passive. It differs from English only in that the Agent is expressed in the instrumental case, rather than in a *by*-phrase, and that the verb bears reflexive morphology. A conceptual semantic approach to these constructions might be able to provide a systematic account of the semantics of these constructions, in the same way that Government and Binding theory attempts to provide a principled account of their syntactic behaviour.

I think that so many of the nagging doubts I have about Government and Binding theory stem from the fact that it is an essentially correct syntactic theory, but that it often tries to do too much. For this reason, one of the most important things I hope to do by writing this paper is encourage research in the field of conceptual semantics. Almost irrespective of whether or not my own analysis turns out to be correct, if I have managed to convince someone that conceptual semantics is a worthwhile area of research, then I will have accomplished a great deal.

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