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THE ENCYCLOPEDIC STRUCTURE OF NOMINALS AND MIDDLE EXPRESSIONS IN ENGLISH*

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1. INTRODUCTION

Within the recent trend of the linguistic study of meaning -- mainly developed in Cognitive Grammar -- it is specifically emphasized that encyclopedic and conventionalized information has been claimed to contribute to the establishment of the semantic value of an expression. Haiman (1980: 347) states that it is not at all clear that there are any theoretically significant differences among grammaticality, meaningfulness and appropriateness of expressions. Langacker (1987: 154) stresses that the distinction between semantics and pragmatics (or between linguistic and extralinguistic knowledge) is largely artifactual, and the only viable conception of linguistic semantics is one that avoids such false dichotomies and is consequently encyclopedic in nature. Taylor (1995: 81) raises the question: Where, and on what criteria, do we draw the line between what a speaker knows in virtue of his knowledge of a language and what he knows in virtue of his acquaintance with the world?

All these considerations inevitably lead to a view of an expression's meaning. That is, an expression's meaning is broadly encyclopedic in scope. More specifically, the semantic value of an expression is heavily dependent on our construal of the conceptualized situation, accommodating various kinds of encyclopedic information evoked in relation to our understanding of real-world contingencies. My primary goal in the present paper is to substantiate this view of meaning, specifically focusing on the study of conceptual bases that instantiate the interpretation of middle expressions (e.g. *This cheese cuts easily, John's novels sell well, Mary discourages easily*).

2. PROBLEMS

It is well-known that a number of syntactic and semantic accounts have been proposed for characterizing various aspects of English middle expressions. Several accounts have been contributed from the G(overnment) and B(inding) framework. Grounded in the syntactic autonomy thesis, some GB adherents have attempted to formalize the syntactic alternations between sentences involving "middle-forming" verbs and those involving unaccusative verbs. Others have attempted to characterize middle-forming verbs as constituting a coherent category that is lexico-syntactically distinguished from other verbs (Hale and Keyser 1987; Fagan 1988, 1992; Condoravdi 1989; Carrier and Randall 1992; Levin 1993, etc.). On the other hand, C(ognitive) G(rammar) theory (Lakoff 1987; Langacker 1987, 1990a, 1991, 1995) has provided a conceptual basis for substantiating the schema by which middle expressions are typically instantiated. On the basis of this theory, various studies have been contributed to the

characterization of middles (Lakoff 1977; Van Oosten 1977, 1984; Langacker 1990a, 1991; Croft 1991, etc.).¹

Nevertheless, no satisfactory accounts have been offered for the conceptual motivation that explains the viability of middle expressions. More specifically, the following questions still remain open:

- (A) Why do acceptability judgments of middle expressions fluctuate so much not only across instances but with respect to one and the same instance?
- (B) Why are some oblique NPs (and verbs), but not others, more suitable for the Subject (and the predicates) of middle expressions? Especially, by what grounds are the notions motivated that have often been associated with the Subject NP in middles, such as Responsibility (Lakoff 1977; Van Oosten 1977, 1984) or Agent-like characteristics (Langacker 1990a).²
- (C) Why do artifacts, rather than natural objects, frequently appear as the Subject NP of middle expressions?

With reference to (A) and (C), my own survey indicates that the middle expression *Bureaucrats bribe easily* is not always accepted as good, though this expression has often been cited in the literature as being so (Banchero 1978; Keyser and Roeper 1984; Roberts 1986; Fellbaum 1986). With reference to (B), people unquestionably accept the middle *This car drives well*, but completely reject **This car hits/ kicks well*. The verb *record* can take a variety of semantically different nominals for its Subject (*King Oliver's band* (Theme)/ *A Smithsonian microphone* (Instrument)/ *Studio B recorded well*: Dixon 1982), while the verb *acquire* cannot take any nominal as its Subject except a human (**French acquires easily*: Keyser and Roeper 1984; Fagan 1992). Interestingly, however, the acceptability of *acquire* can improve when it is contextualized, thus: *?French acquires more rapidly than Esperanto when children are under six* (Rosta 1995). With respect to (C), nearly 90% of middles attested in my survey take artifacts as their Subject referents (e.g. white board, coat hanger, scissors, electric trimmer, etc.).³ However, this does not necessarily mean that a human being can never appear as the Subject of middles: *Mary discourages easily*, *Sue photographs well*, *Joe screens badly* are all possible. One might then ask why the human Subject middle as such **Mary encourages easily* sounds so bad.

Based mainly on the framework expanded within Cognitive Grammar, my arguments will be developed with special emphasis on accounting for these questions, and will ultimately contribute to the semantic well-formedness conditions that constrain the viability of middle expressions.

3. SEMANTIC STRUCTURE OF WORDS

In developing a lexical semantic theory that accounts for polysemy in natural language, Pustejovsky (1995: 63) has come to maintain the position that lexical information plays an active and integral role in the composition of sentence meaning through a mechanism which motivates the creative use of words in context. Although I do not completely agree with his view of the lexicon -- in particular, the postulation of Lexical Representational Levels and of generative operations for meaning extensions -- it is important to note his claim that lexical

knowledge contains information which not only structures our knowledge of words, but also "suggests" interpretations of words in context (Pustejovsky 1995: 87).

3.1 *Semantic structure of nominals*

Crucial to the discussion that follows is Pustejovsky's notion of semantic interaction between the meaning of a verb and that of a noun. Consider these:

- (1) a. John baked the potato. (*bake*₁)
- b. John baked the cake. (*bake*₂)

Pustejovsky (1991a) claims that here the meaning of the verb *bake* is ambiguous in the sense that *bake*₁ (1-a) designates a "change-of-state" of the potato, while *bake*₂ (1-b) designates the "creation" of a cake. How should we deal with this kind of lexical ambiguity? Consider how one can distinguish between *potato* and *cake* in terms of how they come about. The former is a natural kind, while the latter is an artifact. Pustejovsky argues that the change-of-state reading of *bake*₁ is brought about in association with the **Qualia Roles** relevant to natural kinds of objects, while the creation reading of *bake*₂ is brought about by those relevant to an artifact. This means that the "state-of-change" reading of the verb is triggered by the meaning of *potato* by virtue of its being a natural kind object, and, similarly, the "creation" reading of the verb is triggered by the meaning of *cake* by virtue of its being an artifact.

Pustejovsky remarks:

Knowledge of an object includes not just being able to identify or refer, but more specifically, being able to explain how an artifact comes into being, as well as what it is used for; the denotation of an object must identify these roles. Thus, any artifact can be identified with the state of being that object, relative to certain predicates.

Pustejovsky (1991a: 422)

In order to explain this kind of "shift" in a verb's meaning (e.g. *bake*), he proposes a notion of **Cospecification** (Pustejovsky 1991a, 1995: 123). Cospecification means that semantic information of the complement (of a verb) contributes to the specification of a unique and appropriate meaning of the verb. In short, just as a verb can select for an argument-type, an argument itself is able to select the predicate that governs it. In (1-a), for instance, knowledge of *potato* being a natural object contributes to the specification of "change-of-state" reading of the verb *bake*, and that of *cake* being an artifact in (1-b) contributes to the specification of "creation" reading of the verb *bake*.⁴

3.2 *Encyclopedic knowledge*

Pustejovsky (1995) argues that lexical semantic theory must make a distinction between the following four qualia roles: **Constitutive, Formal, Telic, and Agentive**. Table 1 shows the four basic roles that constitute the qualia structure of a lexical item.⁵

TABLE 1: Qualia Roles

Qc:	Constitutive Role: material, weight, parts and component elements
Qf:	Formal Role: orientation, magnitude, shape, dimensionality, color, position
Qr:	Telic Role: purpose that an agent has in performing an act, built-in function or aim that specifies certain activities
QA:	Agentive Role: creator, artifact, natural kind, causal chain

based on Pustejovsky (1991a, 1995)

Drawing on Pustejovsky (1991a, 1995), let us illustrate the respective qualia. Qc is the quale that expresses the relation between an object and its constituents. It refers not only to the parts or material of an object, but defines, for an object, what it is logically part of, if such a relation exists. For instance, Qc allows for reference to a hand and arm as a part-of-relation; hand is a part of arm, and arm has a hand in its part.⁶ Qf serves to distinguish an object from a larger set. For instance, man and woman are sorts of humans, distinguished by gender. The distinction is inherent in the compositional make-up of the separation of these two sorts; a human is a Qf, serving as the larger domain that offers the bases of the distinction between man and woman. Qr defines what the purpose or function of an object is: the purpose that an agent has in performing an act, and the built-in function or aim that specifies certain activities. For instance, the Qr of a noun *knife* concerns its purpose, specifying some aspect of a tool by means of which to facilitate "cutting". Similarly, the Qr of the noun *dictionary* would involve the activity of referencing. QA mainly concerns the mode of explanation of how something comes about, in particular, of the factors involved in the origin or "bringing about" of an object. For instance, *novel* contains the QA that human beings are involved in the process of its production, i.e. it is an artifact, and as such, is sharply distinguished from natural kinds of objects such as potatoes, fish and minerals.

The notion of qualia roles is ultimately based on the idea that there is a system of relations that characterizes the semantics of nominals. The qualia structure of a nominal embodies a system of information which is evoked in relation to our conventionalized, **encyclopedic knowledge** of an object, playing a significant role in cospecification phenomena. In other words, the qualia structure serves to specify the reading of a verb. Inspired by Aristotle's theory of "explanation" modes -- as well as by ideas from Moravcsik (1975) -- Pustejovsky refers to the qualia structure as a mode of explanation that is latent in the semantics of nominals and which can be associated with the semantics of predicates. For instance, the **mode of explanation** is exemplified in the Object nominal *cake* in (1-b); *the cake* is specified with the mode of explanation "artifact" Q(A), which serves not only to distinguish artifacts from natural kinds, but to suggest the manner in which the entity is produced (cf. Pustejovsky 1995: 97).⁷

To see more specifically how qualia roles interact with cospecification, consider the function of the verb *use*.

- (2) a. John used the new knife on the turkey.
- b. Mary has used soft contact lenses since college.
- c. This car uses unleaded gasoline.
- d. My wife uses the subway every day.

(Pustejovsky 1995)

In (2-a), the particular activity of "cutting" is evoked in relation to our knowledge of knives as tools (Q_r). In (2-b), *contact lenses* are visual aids (Q_r), and we can interpret their "use" specifically with reference to wearing them on our eyes. In (2-c), the verb *use* is interpreted as "work" or "operate" in relation to our understanding of *gasoline* as fuel, i.e. "a material source that serves as energy for a vehicle's movement" (Q_c). In (2-d), by virtue of our knowledge of what the function of a subway is (Q_r), the verb *use* is interpretable roughly as "traveling by". Different kinds of qualia roles (particularly, Q_r in these cases) cospecify the respective readings of one and the same verb *use*.

Cospecification need not only come from the semantics of the complement, but from the meaning of the Subject.

Consider (3):

- (3) a. Most commercial pilots prefer Kennedy to London.
 b. Midwestern fish farmers are preferring catfish this year.
 c. Book sellers usually prefer cookbooks to textbooks around Christmas.

(Pustejovsky 1995)

Two factors contribute to the interpretation of the verb *prefer* in (3-a): the qualia structures associated with the Subject NP and the two NP Objects. The complements (Object NPs) are identified as names of airports, and the meaning of *pilots* (the Subject NP) evokes the kind of operation associated with the steering techniques of airplanes. Both NPs co-compositionally allow a default interpretation of *prefer*, i.e. "landing" or "taking off". In (3-b) and (3-c), similar co-compositional interpretations are available; it would not be the case that fish farmers "eat" catfish nor book sellers "read" books, but rather that the farmers are "raising" the fish and the book sellers are "selling" the books. The point is, it is because of the telic role of the fish farmers that we can understand that they "raise" fish, and, similarly, it is because of the telic role of the book sellers that we can infer that they "sell" books. Crucially, the most likely interpretations of the verb *prefer* in (3-b) and (3-c) are suggested not only by the qualia roles of the complement NPs but also by those of the Subject NPs.⁸

In principle, a nominal can denote a referent in terms of the four qualia roles. The thing denoted by *car*, for example, can be specified in terms of each quale; its "material", "weight" (Q_c) (e.g. *The car is heavy*), "shape", "color" (Q_F) (e.g. *The car is colorful*), "transportation" (Q_T) (e.g. *The car carries six*), "artifact" (Q_A) (e.g. *John designed a new model car*) and (an artifact) for "transaction" (Q_r) (e.g. *Mary sold the car*). The qualia of the thing denoted by the noun *newspaper* can be specified in terms of the following modes; Constitutive ("material") (e.g. *Newspaper is made from pulp*), Formal ("a physical object") (e.g. *The New York Times is bulky*), Telic ("information contained in the article") (e.g. *Mary reads The Times*) and Agentive ("an organization") (e.g. *The newspaper fired its sports editor*). What I want to stress here is the import of encyclopedic knowledge of a referent, and how that knowledge contributes to the specification of an appropriate reading of the verb in context.

4. COERCION

The term Coercion is used to refer to the phenomenon that the environment in which a word occurs can determine a specific reading of that word. Semantically, it stands for the converse

relationship of cospecification.⁹ Pustejovsky (1991a, 1995) demonstrates this notion with examples like the following:

- (4) a. Mary began the book.
 b. Mary finished the book.
 c. Mary enjoyed the book.
 d. Mary dropped the book.
 e. Mary translated the book.

In all these expressions, the meaning of the respective verbs "coerces" the interpretation of the complement *book*. In (4-a) and (4-b), *begin* and *finish* force a specific reading of the book with respect to its contents -- in particular, as an entity that involves a "beginning" and an "ending"; in (4-c), the noun *book* is "coerced" by the semantics of the verb *enjoy* by virtue of its contents, specifically with respect to its plot, character descriptions, and so on; the verb *drop* in (4-d) coerces *the book* to be read as a physical object, especially as an object under the law of gravity, and *the book* in (4-e) is coerced by the verb *translate* in terms of being a text in a given language.

Just as nominal qualia roles serve to specify an appropriate reading for a verb (Cospecification), so can verbs specify an appropriate meaning for a nominal (Coercion). These two phenomena should not be distinguished as separate or independent, but should be considered as two sides of the same coin in that both contribute to the semantic disambiguation of co-compositionality processes between elements. In both cospecification and coercion, the Qualia Structure of nominals works as a pivot in identifying the target interpretation of an expression. Just as in the case of (2-b) -- where the quale of *soft contact lenses* serves to specify the reading of the verb *use* in context -- so the verb *drop* in (4-d) serves to foreground *the book* with respect to its specific quale, Qc (a physical object). In both cases, the Qualia Structure of nominals provides the basis of predication in identifying the target interpretation of these expressions.

5. QUALIA STRUCTURE AND THE MIDDLE CONSTRUCTION

I will assume that the Middle Construction schema functions to foreground some semantic aspects of verbs that contribute to the specification of certain properties of the Subject referent. In this respect, the sanctioning of instances by the Middle Construction schema is in no small measure dependent on the use of verbs to the extent that the semantics of the verbs are compatible with the semantics of the Middle Construction. This means that the Middle Construction "forces" a specific reading of the verbs in accordance with its own semantics. On the basis of the Qualia Model, I shall discuss here the ways in which the Middle Construction serves to predicate these properties.

5.1 Constructional Coercion

Goldberg (1995: 9) cites example (5), arguing that the meaning of the Caused Motion Construction [NP₁-V-NP₂-PP] (NP₁ acts on NP₂, whereby causing NP₂ to be propelled along a path designated by PP) can accommodate the peripheral use of verbs which do not intrinsically denote the "displacement" of a Direct Object nominal.

- (5) Joe sneezed the napkin off the table.

Verbs that typically appear in the Caused Motion Construction inherently involve the displacement of a Direct Object nominal, such as *put on* and *drive into*, etc.

- (6) a. Ann put the book on the table.
b. Fred drove the car into the ditch.

(Taylor 1997)

The fact that the verb *sneeze* can be used in the Caused Motion Construction in spite of a lexical "mismatch" with the meaning of the Construction itself is due to the conventionality of the Construction schema. As Taylor (1997) observes, although *sneeze X off the table* is by no means an established locution, the expression can still be interpreted with respect to the semantics of the Caused Motion Construction.

There are, of course, cases where the Caused Motion Construction fails to accommodate the use of some verbs. The expressions in (7) exemplify this:

- (7) a. ??Sam {yawned/ sighed/ snored} the napkin off the table.
(based on Goldberg 1995)

(based on Goldberg 1995)

- b. *Sam encouraged Bob into the room.

(Goldberg 1995)

In contrast with *sneeze* -- the meaning of which normally contains reference to a "burst of air (out of the nose)" (LDCE 1987) -- none of the verbs in (7-a), according to dictionary-definitions, contain any reference to a burst of air: for example, *yawn* is defined as opening the mouth wide and breathing in deeply, as when tired or uninterested (LDCE 1987); *encourage* is defined as giving someone confidence by letting him know that what he is doing is good, and telling him that he should continue to do it (COBUILD 1995).¹⁰ In both cases, the verbs do not (or hardly) entail the sense of "displacement" of a Direct Object nominal, which ultimately motivates the mismatch between the meaning of the verb and the semantics of the Construction. Consider now the Middle Construction. Just as the Caused Motion Construction can accommodate the use of certain verbs (hence, it can coerce the verb's semantics), so too can the Middle Construction. I argue that the use of verbs is sanctioned only to the extent that they instantiate the semantics of the Middle Construction [X (by virtue of some property P) ENABLES ACT].¹¹

Let us begin with a typical instantiation of the Middle schema.

- (8) a. The car drives easily.
b. The book sells well.

For (8-a), my argument is that the Subject nominal *the car* "enables" the ACT of what the verb *drive* designates by virtue of its quale, and in (8-b) *the book* "enables" the ACT of what *sell* designates by virtue of its quale. These expressions are both fully sanctioned as middle expressions in that the semantic co-compositionality between the meaning of the verbs and the qualia roles of the nouns is fully compatible with the semantics of the Middle Construction.

It is important to point out here that the Middle Construction, as in the case of the Caused Motion Construction, cannot necessarily accommodate the use of every verb (and nor equally accommodate the use of verbs).

Consider (9):

- (9) a. *The car kicks easily.

- b. *The book buys well.

In (9), the Middle Construction does not function to coerce a proper reading of the verbs in association with the qualia roles of the Subject nominals. This is because no quale can properly be identified in the nouns *car* and *book* such that they could "enable" the ACTs of what the verbs *kick* and *buy* designate. Again, the construal of a property in a designated entity is determined by how one "perspectivizes" that entity in association with the setting. The Middle Construction thus serves as a conventionalized linguistic schema which can sanction an expression only to the extent that the perspectivization is motivated in accordance with the matching between the meaning of the verbs and their semantic association with the Subject nominals. Crucial to my account, therefore, is an exploration of the encyclopedic knowledge which serves to differentiate the semantic well-formedness of (8) and (9). I will claim that encyclopedic knowledge places a limit on what can be achieved by coercion.

6. THE QUALIA MODEL ACCOUNT OF INTRANSITIVES

Before substantiating the claim posited at the end of the previous section, I will discuss, first of all, the use of verbs in intransitive expressions. This is because middle expressions, although they usually take an appropriate adjunct and the simple present tense are syntactically the instantiations of the Intransitive Construction schema.

6.1 *The Constitutive Quale*

Let us begin with the examples in (10).

- (10) a. The car {started/ ran/ moved}.
 b. ?*The car {drove/ steered/ parked}.

As was discussed in the previous section, *car* in principle can be understood in terms of any quale with which contextualizations can be associated. However, the encyclopedic description of *car* is quite "selective" as to the choice of qualia in determining the semantic value of this noun. Consider the definition of *car* given in the Cambridge Encyclopedia (1993):

car: the general name for a passenger-carrying, self-propelled vehicle designed for normal domestic use on roads. The motive power system includes the engine (of whatever type), and its fuel supply, and the lubrication, exhaust, and cooling systems. The power developed by the engine is transmitted to the wheels by the transmission system, which includes gears, clutches, shafts, axles, and brakes. The engine and transmission are housed in the carriage unit, which also provides the compartment for the driver and passengers to sit, and in which the steering, engine controls, suspension, and electric components can be mounted. The motor car became a reality with the invention in 1884 of the medium-speed internal combustion engine by Daimler in Germany. However, it was not until the early 1900s, and the application in the USA of mass production techniques to the motor car, that mass motoring started to become a reality.

Note that emphatic reference is made to the constitutional functions (Qc) and the aim (Qr) of *car*. The first four lines are devoted to the definition of *car* by specifying its aim (*the thing for carrying passengers for use on roads*) and function (*the thing as a self-propelled vehicle*). What follows in the definition also consists mainly of a description of a *car*'s components and functions. On the other hand, note that various pieces of information are backgrounded. Not

mentioned is the fact that a car is an entity that is made of metal and has weight (Qc); it has dimensionality (Q_F) and color (Q_F), etc. Specifically emphasized here is the fact that the description of Q(c) and Q(τ) overrides all else. This suggests that the purpose and internal functioning of a car are more important, more intrinsic to a proper understanding of the concept than are others, and furthermore, that the various qualia are not all of equal status. In characterizing an entity, some qualia but not others are regarded as more intrinsic to a definition. As I will discuss later, this is not just for the case of *car* but for most **artifacts** as well.

Again, Qc is a qualia role that refers not only to the parts or material of an object, but defines, for an object, what it logically is part of if such a relation exists (Pustejovsky 1995: 98). Keeping in mind this definition of Qc, consider (10). First, the fact that reference to the Qcs of *car* in the expression (10-a) parallels the general encyclopedic emphasis on the import of Qcs. In defining an object, encyclopedias strongly tend to enumerate those features that are conventionally established as essential and intrinsic to the constitution of that object. On the basis of this fact, I will argue that the Qcs of *car* can serve to provide a basis of predication in (10-a) such that the Qcs cospecify the semantics of the verbs *start*, *run* and *move*.

Let us consider more specifically the interactions of the Qcs and cospecification in (10-a). According to the encyclopedic definition, it is easy to identify some "activities" in the meaning of *car* specifically with respect to the information evoked in relation to its Qcs. These activities are evoked in relation to descriptions concerning the Qcs of *car*, that is, *a self-propelled vehicle with a motive power system which contains an engine, fuel supply and lubrication*, etc. Consider next the activity denoted by the verb *start*. It expresses "begin to do something". Here, it is plausible to assume that an entity called *car* can be naturally associated, by virtue of its Qcs, with that which the verb *start* designates: roughly, the noun *car* refers to an entity that can "start" because of its "self-propelled motive power". In a similar way, activities such as "running" and "moving" in (10-a) can also be motivated by association with the information evoked in relation to the Qcs of this entity.

With reference to (10-b), it is the Q_τs that provide a basis of predication, though only partly for the semantic specification of the noun *car*. Following Moravcsik (1975: 627) and Pustejovsky (1991a, 1995), the qualia mode of Q_τ refers to the notion of a purpose that an agent might have in performing an act, and that of a built-in aim or function in terms of which we specify certain activities. I consider that -- unlike *start*, *run* or *move* -- the activities designated by verbs such as *drive*, *steer* and *park* involve direct manipulation by the driver. The important thing here is that the semantics of these verbs involve not only movement of a vehicle but also an Agent who controls the way it moves.¹² In carrying out these activities, we can say that the Agent (i.e. the driver) has to manipulate some built-in functions (Q_τ) of a car, such as steering wheel, accelerator, gears, clutches, brakes, etc. This situation is different from the case of "starting". In "starting", the noun *car* can virtually be seen as wholly responsible for the activity by virtue of the information evoked in relation to its Qcs: "engine", "lubrication", "fuel" or "exhaust". Again, these Qcs all specify the components of a car that typically serve to facilitate its "starting"; hence (10-a) is semantically well-formed. As for "driving", however, both the car and the driver must be responsible. This indicates that in the activity of "driving" not only Qcs but Q_τs are required for the successful completion of the activity.

Of course, in order to set a car in motion, there must be someone (not necessarily the driver) who starts the engine and controls some ensuing operational procedures. In "moving", however, once these procedures are set in motion, all subsequent activity is to sustain the motion, which is largely dependent on the Qcs of *car*, not on the driver: In "driving", on the other hand, the success of subsequent activities must also depend on the way the driver manipulates the car -- steering the wheel, stepping on the accelerator, etc. The anomaly of

(10-b), I argue, ultimately derives from the fact that Responsibility for what *drive*, *steer* and *park* designate splits into two modes of qualia roles. One is the mode evoked in association with the semantic component of *car* which mainly concerns its self-propelled motive power (Qc); the other is the mode evoked in relation to the built-in aim of *car* that primarily concerns the activity of the driver's manipulation (Qt). In (10-b), however, with verbs *drive*, etc., there can be found no reference -- explicit or implicit -- to an Agent who is responsible for the activity of manipulation.

6.2 Contextualization

The qualia roles of Subject nominals are not invariably determined by the semantics of the verbs alone. Contextualization can also serve to specify the proper qualia roles that are responsible for what the predicate verb designates.

Consider (11).

- (11) I though we were out of gas, but the car DRIVES!
(Fellbaum 1986)

Fellbaum (1986: 8-9) states that sentence stress on the verb may function as an indicator of surprise or non-expectedness, supplying new information from the context. Her point is that this new information allows the speaker to assert the "non-given feasibility" of the action, which makes the utterance (11) informationally sufficient. My account substantiates her argument. The given information in the context of (11) is the speaker's knowledge that the car will not move any more due to a lack of gas. With this background knowledge, the speaker asserts that s/he has unexpectedly succeeded in identifying a Qc that might be temporarily attributable to that car (i.e. rather than to the driver himself). The Qc is a semantic facet of *car* concerning its "fuel supply", essential and intrinsic to the manifestation of the self-motive power of *car*. In this case, contextual information (the implication of the speaker's surprise) allows the Qc to be foregrounded, while on the other hand serving to background the Qts (the qualia roles relevant to the driver's manipulation). In this respect, it is noteworthy that the interpretation of the verb *DRIVE* in (11) is almost equivalent to the meaning of *move*.

6.3 Adverb-less middles and intransitives

Intransitive expressions can sometimes merge into middle expressions at the edge of the respective categories -- the categories of the Intransitive and the Middle Constructions.¹³ It is not necessarily the case, however, that constructional merging is triggered only by the semantics of the adjuncts (e.g. *easily*). In this section, I deal with cases where intransitive verbs without an adjunct -- used in some appropriate context -- can occasionally serve to predicate a **property** of the Subject referent.

First, consider (12-b). The verb *button*, when used with a Patient Subject NP, can normally occur with a manner or place adjunct (a typical "middle-forming" verb in this sense). Therefore, (12-a) is less acceptable than (12-b). Occasionally, however, the use of this verb becomes eligible even without any adjunct nor stress, if used with some appropriate contextualization or with certain pragmatic presuppositions.

- (12) a. ??The dress buttons.
b. The dress buttons {easily/ at the back}.

(12-a) is acceptable if uttered in the context of describing how a particular dress is fastened (Fagan 1988: 201). In this context, (12-a) can be seen as an instantiation of the Middle

Construction, in that the expression designates a property of the dress. Note that (12-a), if uttered in that context, does not designate the occurrence of an event. I shall return to this point shortly.

Unaccusative verbs can also appear in the Middle Construction schema, where they serve to predicate a property of the Subject referent.

Consider (13):¹⁴

- (13) a. Don't throw this food away. It'll freeze!
(i.e. Preserve it in the deep freeze.)
b. Look! This stone floats!

The verb *freeze* may inherently be an unaccusative verb designating an inchoative process (e.g. *The food has frozen*). The use of this verb in (13-a), however, differs from an unaccusative use, in that *freeze* in (13-a) serves to foreground a property of the food (almost comparable to the reading of "the food is freezable"), rather than to describe an inchoative process designating "food-freezing". Likewise, *float* in (13-b) can be understood as a middle verb that designates a property of the Subject entity.

The examples in (14) are further instances of this kind of adverb-less middle:

- (14) a. This umbrella folds up. (Fellbaum 1985)
b. Glass recycles. (Fagan 1992)

As Fellbaum (1985: 24) puts it, not all umbrellas are folding umbrellas, and folding is not the primary function or purpose of an umbrella. The umbrella designated in (14-a) is asserted to be such that it has the property of "folding up". Similarly, many kinds of materials cannot necessarily be recycled like glass in (14-b). In (14-b), the speaker asserts that glass, by virtue of its property, is recyclable. Although all the middles in (12-a), (13) and (14) might be said to be peripheral exemplars of the Middle category (in the sense that they all lack an adjunct), they instantiate the Middle Construction schema in predicating a property of the Subject NP.

The viability of these middles can be accounted for in terms of the qualia model. My claim is that contextualization, together with appropriate pragmatic information, contributes to the foregrounding of the Subject referents with respect to their Qcs. In (12-a), the contrast with other "normal" types of dresses (for instance, those that can be zipped shut) naturally serves to evoke a salient quale of that specific dress -- which then results in supplementing the "given-feasibility" that normal dresses are conventionally supposed to have. The quale is that which is temporarily **added** to that kind of dress in accordance with the construal given in this particular context. In the same way, the contexts in (13) serve to foreground the food and the stone with respect to their textures (and, possibly, that of their constituents) by virtue of which both entities get **contextually** associated with the reading of "preservation" or "weight". In addition, the **pragmatic inferences** also support the foregrounding to the effect that most -- but not all -- food can be preserved by freezing, or most stones cannot float in normal situations. In (14-a), an unpredictable quality of the umbrella is acknowledged in association with the "norm" of general umbrellas. This quality is the Qc intrinsic to that umbrella pertaining to its ability of "being tucked away". The foregrounding of an entity with respect to its Qcs thus might then be important in an advertising promotion. The Qc foregrounded in (14-b) is the recyclability of glass. This would be one of the properties intrinsic to glass in general. The specification of that property is thus worthy of reference due to the implicit contrast with other material involving

no such property. For environmentally aware consumers, moreover the recyclability of a substance is an important property of it.

7. MIDDLE EXPRESSIONS

I return now to the question posited at the end of section 5. How does encyclopedic knowledge place a limit on what can be achieved by coercion? Since middle expressions are primarily used to predicate a property, this question can be answered more substantially by an exploration of how qualia roles of Subject NPs are specified in association with the context that the Middle Construction ([NP₁-V-Adjunct]) typically sanctions. The primary concern of this section is to characterize middle expressions in terms of the qualia roles of the Subject referent and the semantic association of these roles with the context.

7.1 *Artifacts vs. Natural objects*

Encyclopedic definitions of artifacts, in contrast to those of natural kinds of objects, strongly tend to contain reference to Q(τ), telic qualia roles. *Knife* is usually defined as a tool or weapon used for cutting; *computer* is a device which can be programmed to store and process numerical and textual information; *ferry* is a boat for taking passengers and vehicles across an area of water. One hardly finds any Q τ in the definitions of natural objects like plants, animals, human beings, or planets. It would be sufficient to cite one example to illustrate this. As the following definition shows, what is mainly referred to in the encyclopedic description of *Mars* is its Qcs, such as "location", "shape" and "size":

Mars: the fourth planet from the Sun; the outermost
of the terrestrial-type planets, with an eccentric
orbit at a mean distance of 1.52 AU, and a diameter
about half that of Earth.
(Cambridge Encyclopedia 1993)

Middle expressions typically take artifacts as the Subject referent, rather than natural kinds. This means that Subject referents in middles, in most cases, involve Q τ ; they are products created with a built-in aim or function, and are understood typically with respect to the activities of (and the benefits for) a human Agent.¹⁵

The next section proceeds to account for why middle expressions obligatorily require adjuncts. The addition of some appropriate adjunct to a middle is a kind of contextualization whereby the intransitive use of certain verbs is more eligible.

7.2 *The Shift of semantic weight in Qualia*

The following are attested examples of middles that take artifacts as their Subject referents:

- (15) a. This handy coat hanger hooks well.
 b. This white board erases easily.
 c. The door shuts badly.
 d. The folding bed converts and folds away easily.

Consider first the definitions of some of these Subject nominals:

hanger: a frame with a hook and crosspiece which is put
inside the shoulders of a dress, coat, etc. so that

it can be hung up and will keep its shape.

(LDCE 1988)

board: a flat piece of hard material used for a particular purpose (e.g. a notice board, blackboard, white board, chessboard)

(LDCE 1988)

door: a flat, usually rectangular, object, often fixed at one edge, that is used to close the entrance of something such as a room or building, or the entrance itself.

(CIDE 1995)

The above definitions all contain reference to the Q_T s of the objects. *Coat hanger* is made with the purpose of hanging clothes and keeping their shape. *Board* is mainly used for writing something on or playing games with. *Door* is normally used for closing an entrance. *Folding bed* is a bed that can be bent into two or more parts when it is not used for sleeping.

I assume that the obligatory requirement of adjuncts in middle expressions is motivated by the shift of importance from Q_T to Q_C . Recall that the Responsibility of the ACTs of "driving", "steering" or "parking" splits between two qualia modes, Q_C and Q_T .

(16) *?The car {drove/ steered/ parked}. (= (10-b))

The fact is important that most adjuncts in middle expressions denote the degree of "facility" with which one carries out the designated activities. Of crucial interest here is the question of what (or who) facilitates the activities concerned. In contrast with actives or passives like (17) -- where the ease with which the car is driven (steered or parked) is attributed to John or an unspecified Agent (more precisely, the driving technique of the Agent) -- it is asserted by the speaker in (18), in terms of the Constructional meaning of middles, that the ease should be exclusively attributed to the car (more precisely, to a property of the car).

- (17) a. John {drives/ steers/ parks} the car easily.
b. The car was {driven/ steered/ parked} easily.

(18) The car {drives/ steers/ parks} easily.

The assertion entailed in (18) is not literally true, in the sense that cars do not literally "drive" by themselves. In order to legitimize this kind of assertion, reference to the manner of "driving" is almost obligatory. This is primarily because the speaker of (18) intends to attribute Responsibility exclusively to the car by specifically foregrounding those semantic aspects of *car* that contribute to the reading of facilitation in the car's driving.¹⁶

A second reason why middles must take adjuncts is that exclusive reference to the telic qualia of objects is insufficient with respect to the informativeness of an utterance.¹⁷ Qualia roles in general (including Q_T) are the specifications of conventionalized information typically evoked with the semantics of referential objects, so the exclusive reference to the Q_T s of objects is inherently less informative. Hence, if a proposition attains informational viability, additional information must contextually be supplemented. My claim is that the shift of semantic weight made through the addition of adjuncts also serves to contextually supplement this kind of informational insufficiency.¹⁸

Let us discuss the first reason more specifically. Suppose that there is a car that has a special steering wheel which facilitates the steering of that car. The kind of information evoked in association with this wheel has much to do with the Q_T of that car. This information is ultimately derived from our encyclopedic knowledge that the wheel controls one of the built-in functions of *car* which every driver directly manipulates. And, for the speaker of (18), the information evoked in association with the special wheel is considered as one of the Q_T s of the car that contributes to the facilitation of its driving. The important thing here is the "speaker's" assertion that the excellent steerability of the car is not dependent on the driver's technique, but rather, on the quality of the car itself. In the speaker's world, the ease of steering is now a quality attributable to the Q_c of that car. In this regard, the addition of *easily* -- expressing the manner of driving -- offers information that foregrounds something inherent to the "activities" of the car (namely, the Q_c of that car). This, I conclude, is what Langacker (1990a) calls "Agent-like" characteristics: the characteristics to be construed in the conceptualization of Subject referents. On the other hand, the addition of *easily* also functions to background the driving techniques of the Agent (i.e. the knowledge evoked in association with the car's Q_T) -- provided that the adjunct semantically functions to impose the excellent steerability on the characterization of the car.

This claim suggests that the adverb *easily* in (18) serves to **shift semantic importance from Q_T to Q_c** . In this respect, we can argue that the expressions like (16) -- those which contain neither an adjunct nor adequate contextual support (cf. e.g. (11)) -- a human Agent would strongly be evoked as the manipulator of "driving" in particular association with the Q_T roles of the noun *car*. The role of Agent therefore remains less backgrounded, which in turn hinders an intransitive interpretation. This is the reason why the expressions in (18) are acceptable, but not those in (16).

My claim here is legitimized by two pieces of syntactic evidence. First, on the basis of the Cognitive Grammar thesis that syntactic elements are all overtly encoded, and that there is no "underlying" structure which reflects the deeper understanding of an expression (cf. Langacker 1987, 1991), we can claim that the Middle Construction contains only one argument that functions as the Subject of its instantiations. On the grounds that the Middle Construction has its own meaning -- the Subject entity, by virtue of its property P, enables the ACT designated by the predicate verb -- all the encoded elements other than the Subject NP in the Middle Construction would also be assumed to bear semantic affinity with the specification of the Constructional meaning itself. In middle expressions, the necessity of an adjunct and the frequent use of the simple present tense are to be understood as factors contributing to that kind of specification. The meaning of *easily* in (18) is, thus, seen to function as a linguistic unit for the predication of a property of the Subject referent.

Secondly, recall that an Agent cannot be expressed in middle expressions (e.g. **The car drives easily {by John/ by somebody/ by everyone}*). This phenomenon supports a consequence that follows from my line of argument; that is, the addition of a *by* NP functions to foreground the Q_T (the Agent's ability to drive), but not the Q_c of the referent (the internal functioning for drivability), which is obviously incompatible with the Constructional meaning of middles.

7.3 Verbs which are less eligible in middles

There are quite a few verbs that are not acceptable in plain middles, i.e. those middles with an adjunct like *easily* or *well*, without any discourse contrast and/or pragmatic inference obtaining from contextual support. Verbs of "perception" (e.g. *see*, *watch*, *hear*), "understanding" (e.g. *explain*, *understand*, *comprehend*), and Caused Motion verbs (e.g. *hit*, *kick*, *knock*) are almost impossible in the Middle Construction [NP₁-V-ADJUNCT] (see also Fellbaum 1986, Yoshimura 1991, Fagan 1992).

- (19) a. *Those paintings do not {see/ watch} well.
 b. *His mathematical papers {explain/ understand} easily.
 (Fellbaum 1986)
 c. *The car {kicks/ hits} easily.

Let us begin with (19-c). From the discussion so far, it is obvious that, in normal settings conceptualized with what the designation of verb *kick*, it is impossible for one to evoke encyclopedic knowledge that would be associated with any telic quale of *car*. Presumably, it is the QF (the surface, for instance) of *car* that would be evoked in relation to the activities denoted by the verbs of (19-c). The reason why these expressions are semantically ill-formed is twofold.

First, no reference in the encyclopedic definition is normally made to the qualia roles of *car* that could possibly cospecify these verbs. This is simply because one's kicking a car hardly works as an energy source that leads to the manifestation of any quale conceptually intrinsic to the semantic component of *car*. The surface of a car hardly qualifies as an energy source that causes a car to "start", "move" or "run" (the manifestation of information relevant to Qc), nor does it serve to "drive", "steer" or "park" the car (the manifestation of information relevant to Qc and Qr). Of course, we can say that one can "kick" or "hit" a car. But, what is portrayed by the expression (e.g. *John kicks the car*) is characterized as incidental in terms of the semantic compositionality between *car* and *kick*. It is incidental in the sense that no property of the car is responsible for the occurrence of this activity. One can kick anything at all, provided only that it is solid, of an appropriate size, and in an appropriate location. What is required in middle expressions is, again, the reference to an inherent property of the Subject referent. In terms of encyclopedic and typical characterizations of the entity *car*, it is reasonable to argue that the surface of a car can scarcely be foregrounded as something intrinsic to its characterization. Again, it must be emphasized that various qualia of an entity are not all of equal status; regarding artifacts like *car*, it is the purpose (Qr) and the internal functioning (Qc) that have a more salient status than others in its definition.

Second, the adjunct *easily* fails to cause the reading of the car to be responsible for the act of "kicking" because -- even with the addition of the adjunct -- it would be almost impossible for one to evoke something intrinsic to *car's* Qr (e.g. the "accelerator", "brakes", "wheels", etc. of *the car*) that could contribute to the facilitation of the process designated by *kick*, hence no shift of semantic weight occurs from Qr to Qc. Even if a certain car needs to be kicked in order for it to start, this property is so idiosyncratic and extrinsic to the car-starting process in general, that there would be no reason to trade cars in terms of their kickability. This situation would not be referred to in any encyclopedic definition (but may possibly be in the Guinness Book of Records).

Objects like paintings in (19-a) are the things which have "weight" (Qc), "shape" (QF), and are artifacts (QA). However, since most artifacts normally have shape (therefore, weight) which everyone can "see" or "watch", it is quite difficult to attribute any Responsibility to that entity for this kind of activity. That is, "seeing" or "watching" hardly designates an activity that can serve to foreground a property intrinsic to that which is seen or watched. The verbs *explain* and *understand* in (19-b) are used to cospecify the quale of "information" contained in the papers (QA). It is normal, however, to attribute the success with which one "explains" or "understands" something largely to the ability of the Agent, rather than to the quality of what is being explained or understood. In this respect, compare these verbs with *read* (*His mathematical papers read easily*). *Read* is an activity of looking at and understanding something printed or written, while *understand* is an activity of knowing or recognizing the meaning of something (LDCE 1987). Although both *read* and *understand* designate mental

activity, *read* does not necessarily entail a special effort or ability in carrying out the activity; one can "read through" a book, or make a "quick" and "random" reading of magazines. In contrast, however, to understand a book, an idea, or an argument, one is required to guess, think over, and rationalize. In addition, physical aspects of an object such as "size", "color" and "shape" of letters -- the Qcs of *book*, for instance -- can serve as the qualia of an object in carrying out "reading", although they are scarcely factors in the success of "understanding".

It is now obvious why the following middles are all unacceptable:

- (20) a. *These books won't put on the shelves. (Taylor 1996)
- b. *Mary laughs at easily. (Keyser and Roeper 1984)
- c. *The cliff avoids easily. (Doron and Rappaport Hovav 1991)

The Middle Construction coerces the verb's meaning into the Constructional meaning of the Middle [X (by virtue of some property P) enables ACT]. All the expressions in (20), in this sense, fail to instantiate the semantics of the Middle Construction. The reason is that no quale can be found in the Subject entities in (20) that cospecify the verbs in accord with the Constructional meaning of the Middle.

In order to make the utterance in (20-a) more viable as a middle, *the book* has to be given the kind of quale that can encyclopedically be associated with the semantics of the verb *put*. No reference, however, will normally be found in any encyclopedic description saying that a book is an entity that will be "put" somewhere, e.g. on a shelf. Of course, one can (and does) put books, or whatever, on shelves, but this state of affairs is incidental in the same sense as discussed in the analysis of the *kick* sentence.

Similarly, *Mary* in (20-b) and *the cliff* in (20-c) cannot be associated with any quale that cospecifies the semantics of their respective verbs. First, consider (20-b). Indeed, Mary may be a person who happens to be laughed at occasionally, but we cannot say that Mary (or anybody else) exists, first and foremost, as an entity to be laughed at.

What then of (21)?

- (21) *?This joke laughs at {well/ more than that one}.

Sentences like (21) are obviously quite bad, in spite of the fact that the telic quale of *joke* is such that one should laugh at it (it is something that is said or done to make you laugh; COBUILD 1995), hence, we can say that jokes exist, first and foremost, as entities to be laughed at. In contrast with (20-b), *joke* is thus given a quale that is encyclopedically associated with the semantics of *laugh at*. By virtue of this definition, (21) ought to be acceptable. The reason why (21) is unacceptable is that *laugh* is an unergative verb, the argument of which is closely linked with a human Agentive participant; LDCE (1988) defines *laugh* as "expressing amusement, happiness, careless disrespect, etc., by breathing out forcefully so that one makes sounds with the voice, usu. while smiling". Like other unergatives such as *cough*, *sneeze*, *belch*, *yawn*, it involves certain "involuntary" bodily processes; that is, without the human Agent, the process itself is not viable. This fact indicates that whether something could be laughed "at" or not -- let alone whether someone laughs or not -- crucially depends on the physical conditions of the person who does the laughing. *Tell* is another unergative verb which -- unlike *laugh* -- scarcely involves this kind of "involuntary" bodily process by virtue of its definition (compare *Joe {laughed (at the joke)/ coughed/ sneezed/ belched/ yawned} in spite of himself* vs. ??*Joe told the story to the audience in spite of himself*). LDCE (1988) says that *tell* is to make (something) known in words to (someone), with the bodily processes concerned completely open; COBUILD (1995) defines *tell* such that if you tell someone something, you give them

information. These definitions contain references not only to the volitionality of the Agent (e.g. *Joe told definitely*) but also to the information to be told -- which admits the possibility of specifying the quale of what is told (e.g. *This joke tells well*).

Let us return to (20-c). It is quite difficult to foreground a cliff with respect to its avoidance: in principle, various verbs (and adjectives) can coerce the meaning of *cliff* in light of its "shape" (*climb/ over-hang/ reconnoiter, steer/ jagged/ bold*), "size" (*scale, big*), "color" (*black*) or "age" (*old*). No quale, however, will be identified as a property intrinsic to the characterization of a cliff that would encyclopedically be associated with the activity of "avoiding".

Note that the coercion of verbs in the Middle Construction [NP₁-V-ADJUNCT] (e.g. **The cliff avoids easily*) differs from that in the [NP₁-V-NP₂] Construction (e.g. *John avoided the cliff*). The difference is clear: coercion in middles must definitely be made to give rise to a property reading, whereas coercion in the Transitive Construction has no such rigid restriction. One can "avoid" almost anything, and can also "avoid" practically any kind of situation; one can "understand" and "explain" whatever contains information, but these states of affairs do not obtain in the manner required for middles. In middles, through completion of activities such as "kicking", "avoiding", "understanding" and "explaining", it is required to attribute a property reading to the Subject entity; that is, some intrinsic (or more stable) property of the entity must be specified, in association with the semantics of the predicate verbs and adjuncts. Cospecification in middles thus needs to be achieved, so that Constructional coercion can be made to give rise to a property reading.

7.4 Oblique NP Subjects

My account of middles in terms of encyclopedic knowledge and its association with the meaning of Middle Construction also explains the semantic well-formedness of oblique Subject middles.

Consider Place-Subject middles in (24):

- (24) a. Studio B records well.
 b. ??Studio B paints well.

Here are some definitions of *studio*:

Studio: a room from which broadcasts are made or in which recordings are made (LDCE 1989)

a specially equipped room where television or radio programmes or music recordings are made (CIDE 1995)

From these definitions, it is obvious that the predication of a property with respect to *studio* is primarily based on encyclopedic information concerning its Q_T, i.e. it expresses a room for "broadcasting", "recording", and "television and radio programs". The use of the verb *record* in (24-a) is quite compatible with the Middle Construction schema; *studio*, by virtue of its quale, enables the ACT of recording. This means that the noun *studio* can cospecify the verb's meaning so that the Middle Construction can sanction the expression. In this sense, the entity "studio" could plausibly bear Agent-like characteristics (Langacker 1990a) or pseudo-activities (Jespersen 1927). Note also that the adjunct *well* contributes to the attribution of more Responsibility to the Subject entity, shifting the semantic weight from Q_T to Q_C.

On the other hand, *studio* in (24-b) entirely fails to cospecify the meaning of the verb *paint*, as it lacks a quale that can be evoked in association with the meaning of *paint*. No reference can be found in the definitions of *studio* which could be associated with the act of "painting" (except for the meaning of *studio* as a room where artistic paintings are produced). Therefore, the use of *paint* does not fit well with the semantics of the Middle Construction. Although one can, of course, paint in a studio (or wherever), one is not able to say that *studio*, by virtue of its quale, enables the ACT of painting in any meaningful fashion. The success of painting lies exclusively in the skill of the painter. It is in this sense that the *studio* in (24-b) fails to bring itself any proper understanding of Agent-like characteristics.

Depending on its construal in a particular context, however, (24-b) could become marginally acceptable. Suppose that there is a group of painters at work in a complex of studios which differ one from another in various aspects. Some studios are outfitted in such a way that painting is rendered difficult (e.g. because of their lighting). Compared with other studios, an artist might utter the expression (24-b), with the implication that Studios A and C don't paint well. As I shall point out, contextual information and pragmatic inference can occasionally serve to add qualia that cospecify the meaning of a verb; ultimately, the expression's well-formedness is thus likely to be improved.

Consider next Instrument Subject middles:

(25) These scissors cut very well.

One definition of *scissors* is as follows:

scissors: two sharp blades having handles at one end with holes
for the fingers, fastened at the center so that they open
in the shape of the letter X and cut when they close.
(LDCE 1987)

This definition implies that scissors have the following qualia; Qc (having handles and blades as its parts), Qf (the shape of the letter X), Q_T (they cut when they close) and Q_A (artifact). The definition of *scissors* first and foremost contains the mode of explanation describing how they are artifacts to cut something. The specification of "cuttability" designated by the verb *cut* is adequately cospecified by the noun *scissors*, hence the verb instantiates the Constructional meaning of the Middle. Note that the Q_T given in *scissors* is highly conventional information shared by all the people who use them, and obviously this is why the act of "cutting" (Q_T) is referred to in the definition. Reference only to this Q_T, however, inevitably fails to give sufficient information to the designated entity (**These scissors cut*). The need for some appropriate adjunct can also be motivated in this regard. By specifying the manner of "how the scissors cut" (e.g. *quite well*), the quale intrinsic to those particular scissors is clearly foregrounded.

The following are Experiencer-Subject middles:

- (26) a. Mary discourages easily
b. *Mary encourages easily.

Note first that what distinguishes these middles from the middle *Mary does not photograph well* resides in the difference in the qualia roles. In the expression, *Mary does not photograph well*, *Mary* is **perspectivized** in terms of an object related to the feasibility of her "photographing"-- namely, a perspective of whether a person has poor facial expressions,

inelegant posture, and so on. The qualia evoked in relation to this sense are obviously Qcs, especially, the physical parts or whole of the body.

Contrary to the above example, *Mary* in (26-a) and (26-b) is perspectivized in terms of her mental attitude. Both are intended to designate *Mary* with respect to her personality (or mood), which will, in turn, be manifested in association with the ACT of what *discourage* (or *encourage*) designates. No reference is normally made in encyclopedic definitions that specify the qualia roles of human beings with regard to the personality. This state of affairs strongly suggests that a person's personality can vary in accordance with one's construal of the person in a given context, hence the acceptability of middles involving reference to a person's personality is essentially **variable**.

It seems that *discourage*, compared with *encourage*, denotes a mental state as being more remote from the normal state of a person's feelings. While *encourage* expresses the act of making someone believe they are able to do something, *discourage* expresses the act of preventing someone from doing something by making things difficult or unpleasant. At the risk of overgeneralization, one might say that a person's facial expressions and behavior will be more likely to reflect -- and be more likely to universally manifest -- the mental state of "being discouraged" rather than of "being encouraged". Assuming then that *discourage* expresses a human feeling that entails a change from a normal to a less normal state, *encourage*, a change from a less normal to a normal state, Gricean maxims would also contribute to an explanation of the difference in (26). By the Quantity and the Relation maxims, the mental state designated by *discourage* is clearly more informative than that designated by *encourage* in that the former entails as its endpoint a sense more remote from the normal state of human feelings.¹⁹

7.5 Semantic co-compositionality

The account of middles given so far can explain why some entities, but not others, occur as the Subject of middles. Just as in the case of (18), where various verbs were seen to occur with one and the same Subject, so various Subject NPs can occur with one and the same predicate -- although acceptability judgments may vary somewhat:

Consider (27):

- (27) $\left\{ \begin{array}{l} \text{a. The book} \\ \text{b. Paperbacks/ Hardcover} \\ \text{c. This vending machine} \\ \text{d. Shakespeare} \\ \text{e. The crime} \\ \text{f. O.J.Simpson/ Princess DI} \\ \text{g. Sex} \\ \text{h. ??That corner} \\ \text{i. ?*Early evenings} \end{array} \right\} \text{sell(s) well.}$

The sentences in (27) exemplify the fact that middle expressions are sanctioned to the extent that the Subject NPs cospecify the semantics of their respective verbs. In (27-a), the QT of the noun *book* cospecifies the semantics of the verb *sell*. *Sell* designates an action of "giving or passing property or goods to someone else in exchange for money" (LDCE 1987). On the other hand, *book* -- in its encyclopedic and conventionalized meaning -- can be understood as a commodity for a transaction, the semantic aspect of which is especially evoked in association with the meaning of *sell*. In (27-b), the semantic aspect of "cover" (for *book*) is specifically foregrounded with respect to the sale of the book; the sales figures of books not infrequently

depend on whether they have "paper" or "hard" covers. The reading of (27-c) is ambiguous; one reading is that -- due to some excellent features in its built-in functions, or maybe other factors -- the machine sells something well; the other reading is that this type of machine, compared with others, is sold well for its own quality. Of importance here is that, in both readings, the Q_r of the machine is foregrounded in association with the meaning of *sell*, by which it is possible to specify the property inherent to that machine. In the examples from (27-d) to (27-g), the Subject NPs are understood as metonymical extensions of referential objects: *Shakespeare* in (d) designates the works written by Shakespeare; *the crime* in (e) designates the articles or scoops written about it; *O.J.Simpson*, *Princess DI* and *sex* are understood as referring to incidents and general topics involving the persons designated by the respective nouns. All of these referents are construed in light of "merchandise" for the purpose of commercial transaction, which contributes to the cospecification of the meaning of *sell* with their respective construals. In the normal sense, it is difficult to identify any quale in the nouns *corner* and *evenings* that would cospecify the verb *sell*. This is because one hardly identifies a semantic aspect of *corner* or *evening* that would be related to the sale of books; no reference will be found in any encyclopedic definition of books that contains reference to *corner* or *evening* in any meaningful fashion. As I discuss in the next section, however, given a context that adds a quale to the concepts of these objects in relation to the semantics of *sell*, the semantic well-formedness of these expressions improves.²⁰

7.6 Contextualization and variability

7.6.1 Qualia in context

In this section, I argue that qualia can be variable in accordance with contextualization and discourse settings.

7.6.1.1 The Foregrounding of a quale

The argument for the import of encyclopedic knowledge does not preclude verbs like *kick*, *hit*, and *acquire* from occurring in middle expressions. Instead, I will argue that contextual information can make these verbs more or less feasible in middle expressions. Contra Fagan (1992: 75), my argument predicts that these verbs can be used in middle expressions, provided that contextualization supplies information that serves to foreground some of the qualia roles of the referents:

Consider (28):

- (28) a. ?This ball kicks easily, but that one doesn't.
 b. These baseballs hit like a dream. (Massam 1988)
 c. ?French acquires more rapidly than Esperanto when children are
 under six. (Rosta 1995)

Although (28-a) is not completely acceptable, it is better than *The car kicks easily*. What is important is that the activity of "kicking" is not as incidental to the notion of *ball* as to that of *car*. Why is this so? This is because the qualia structure of *ball* contains the role (i.e. Q_r, here) associated with this kind of activity, whereas that of *car* does not. Consider the mode of explanation of how a *ball* (e.g. a baseball, soccer ball, etc.) comes about. It is an artifact which people create with the purpose of playing with -- more specifically, an artifact which one "hits", "kicks" or "throws". In (28-a), the predicate verb *kick* -- in contrast with other objects of the same kind (*but that doesn't*) -- foregrounds this telic role of *ball*. Similarly, in (28-b), the baseballs are foregrounded with particular respect to their "resiliency", a Q_c which contributes

to the feasibility of the ACT "hitting". The foregrounding of the quale comes to be completed, especially with contextualization by the adjunct *like a dream*. The context in (28-c) shows that two languages are being compared with respect to the property of their "learnability". All these qualia are contextually added, while other possible qualia are being overridden.²¹

Let us consider the examples in (29):

- (29) a. ??That corner sells well.
 b. [conversation between the staff in a bookshop on
 a book that is newly-published]
 A: Which corner shall we use to display the book?
 B: I think, ... **That corner sells well.**
 It's far better than this one.

With respect to (29-b), discourse context provides background information which contributes to the specification of the information relating to a quale of *corner* (i.e. Q_T). Encyclopedically, in fact, no reference is normally made to the telic roles of *corner*. Nonetheless, the discourse serves to enrich the contextual information surrounding the middle expression, organizing an association of a quale of *corner* with one of *book*; the corner in this expression is perspectivized in terms of a "place" in which something is to be displayed (for the benefit of sale). The example (29-b) exemplifies my claim that the Q_T of *corner* is contextually added and foregrounded.²²

Contextual information also can serve to advance the acceptability of the verb *dance*.

- (30) a. *This waltz dances easily. (Fagan 1992)
 b. **This music dances better than the other one** [i.e., piece of music]... We'll just have to see how **the other piece dances.** (Van Oosten 1984)
- (31) a. *This stage dances easily.
 b. ?[said by a professional dancer when she first saw the stage for the preparation of her performance]
This stage doesn't dance very well; the station platform does better.

The Middle Construction fails to sanction the expressions in (30-a) and (31-a). It is impossible to see how *stage*, by virtue of any of its qualia roles, enables the ACT of dancing; instead, it would normally be a dancer who enables the ACT of dancing. In order to make these middles more viable, *waltz* (or *music*) and *stage* need to be contextually foregrounded with respect to the qualia that can semantically be associated with the various activities of "dancing". In (30-b), two pieces of music are being compared with respect to the "performability" of dancing; this serves to add and foreground the qualia of *music*, i.e. the rhythm and/or harmony inherent to it. In (31-b), a stage is being compared with a station platform with respect to the performability of dancing on it, thereby adding and foregrounding the qualia of *stage* -- Qcs such as structure, space, acoustic effect, or even the color.

7.6.1.2 *Qualia in various construals of settings*

An account of middle expressions within the framework of encyclopedic knowledge and contextual support also explains the flexibility in the use of many verbs.

- (32) *These cabinets {construct/ build} easily. (Fellbaum 1986)

(33) a. ?An extension bridge {**constructs/ builds**} easily.
 b. London **approaches** easily, when there's not much traffic.
 (Rosta 1995)
 c. Bert doesn't **interview** very well. (Taylor 1996)
 d. ?The house entered easily, once the barricades were **removed**.
 (Rosta 1995)

e. Suppose Louisa Djiak had been involved in the plant sabotage and Humboldt was protecting her. May be he'd called Caroline and pushed her into firing me. Although Caroline was not the kind that **pushed** easily.
 (*Toxic Shock*. Sara Paretsky; 1988)

In this respect, it is interesting to compare *construct* and *build* with *assemble*:

- In (33-b), apparently, the city of London does not undergo any change of state when it is approached. Given an appropriate context like (33-b), however, one can imagine how difficult it is to approach London, presumably due to its heavy traffic. Here, *London* is foregrounded in terms of its geographical configuration (QF; a Formal Quale), specifically concerning its accessibility by road. Viewing London from this point of view, the speaker succeeds in making his assertion viable as a middle in that London -- by virtue of its geographical configuration -- is responsible for the act of what is designated by *approach*.

Unlike artifacts, it is generally difficult to identify any telic qualia for human beings. This does not necessarily mean that human beings never appear in the Subject of middles. This is because a quale can be added, depending on the construal of a situation. In (33-c), *Bert* is foregrounded as an "information source" (Qr) which the interviewer intends to utilize. In this case, the act of "interviewing" can properly be cospecified by the qualia mode, because *Bert* is perspectivized as an entity involved in the "aim" of this act. As an interviewer, *Bert* is regarded as a "container" that the interviewer aims to take information from, and the success of it should exclusively depend on the characteristics inherent to the interviewee (*Bert*), rather than those of the interviewer.

The verb *enter* in (33-d) is an unaffected verb that the Affectedness Constraint would exclude from use in middle expressions. Following the claim that the Subject referent in middle expressions must be a Patient (Lakoff 1977; Van Oosten 1977; Fellbaum 1985, 1986), moreover (33-d) should be rejected, since the Subject referent *house* is to be understood as Goal. As (33-d) exemplifies, however, *enter* can occur in a middle. Encyclopedically, *house* is defined as a building for people to live in; typically, it has doors, windows, a roof, and occasionally a porch, fence and gate. Conventionally, no qualia role would be identified in defining a *house* that could be associated with its entrance. In (33-d), what is important is that the speaker aims to foreground the "path" to the entrance of the house through which people (presumably, soldiers) might come in. In other words, what is of special interest for the speaker in this utterance resides in the "settings" surrounding the entrance, which in effect facilitates the way the soldiers entered the house. The second clause (*once the barricades were removed*) serves to foreground "the path to the entrance" with respect to its constitution. This contextual support, with its associated reference to the qualia roles Qc (a component of the house) and Qr (built-in aim for the purpose of one's entering), contributes to directing more Responsibility to the Subject referent.

In (33-e), the verb *push* is used to express roughly "force someone to do something by putting pressure on him/her". Without contextualization, the middle expression *Caroline pushed easily* would probably be rejected. With the contextualization exemplified in (33-e), we understand that *Caroline* is a person with a mental fortitude such that the act of "pushing" can be associated with something inherent to it. Assuming that a person's mental habit is one of the qualia roles of human beings (Qc), the crucial point in (33-e) is that the speaker succeeds in asserting that *Caroline's* mental constitution is foregrounded in particular association with the act of "pushing". The contextualization in (33-e) supports the speaker's assertion. Note that the passage preceding the middle expression refers to a situation in which *Caroline* had been involved (*May be he'd called Caroline and "pushed" her into firing me*). This passage offers the background information that contributes to foregrounding the mental constitution of *Caroline* in the subsequent middle expression, specifically serving to characterize *Caroline* in terms of mental fortitude.

As already mentioned, the acceptability judgments of (35) fluctuate considerably:²⁵

(35) Bureaucrats bribe easily.

It would be natural to see, in its normal sense, that the kind of people designated by the noun *bureaucrats* first and foremost do not exist in order to be bribed. This indicates that it is hardly possible to assume a telic quale in the semantics of *bureaucrats* which is evoked in close association with the act of "bribing". The qualia of professions, unlike artifacts, can be construed in different ways from person to person. It is no wonder that some informants -- presumably in implicit contrast to other professions -- strongly evoke a greedy aspect of *bureaucrats* in particular association with their occasional corruption. For those, (35) will

possibly sound good; they can construe *bureaucrats* in terms of their greediness, which in turn serves to cospecify the semantics of *bribe*. Consequently, greediness comes to be interpreted as a property that enables the ACT of what is designated by *bribe*.

In order to make (35) more firmly viable, some contextualization may be needed (capital letters indicate that emphatic stress falls on these elements):

- (36) a. Bureaucrats do not bribe easily, but politicians do.
 b. Bureaucrats DO bribe easily.
 c. BUREAUCRATS bribe easily.

In (36-a), bureaucrats are being compared with politicians with respect to their "bribability". The emphatic stress on the verb (or the nominal) also helps to foreground the quale of "bribability", contributing to the enhancement of informativity. In particular, bribability is foregrounded here as a quale which is variable with reference to *bureaucrats* and other (unexpressed) entities like *politicians*. In conclusion, foregrounding with pragmatic inferences serves to enrich the understanding of the concept of *bureaucrat*.

To conclude this section, I will briefly discuss one further example. Based on my arguments so far, the last sentence in (37) should be considered as a peripheral instantiation of the middle. It is peripheral in the sense that it lacks an adjunct, but it is still a middle in that it predicates a property of the Subject NP.²⁶

- (37) A hungry lion came across two men in the jungle. One was reading a book and the other was writing a book. The man reading the book was quickly devoured while the writer was ignored. Even a lion knows that **readers digest** and that **writers cramp**. (bold is by K.Y.)
 (Otago Daily Times; 23/9/1997)

As in the case of (11), the speaker of (37) asserts that s/he has unexpectedly succeeded in identifying the qualia that can temporarily be attributable to the proper reading of *the lion* in this context. Of special interest in relation to the present discussion is the creative aspect of qualia-foregrounding. The readers and writers designated by the Subject nominals potentially contain various kinds of qualia that can be contextually foregrounded. Those qualia may in principle not only be intrinsic (or less intrinsic) to the semantic characterization of the designated entities, but also variable from one entity to another. In (37), contextual information serves to perspectivize the meaning of a *lion* in light of its carnivorousness, which contributes to foregrounding the less intrinsic (maybe extraordinarily unconventional) qualia roles of the Subject NPs -- i.e. the digestibility of readers and the crampability of writers.

In principle, various qualia can be identified in an entity. Some qualia, as Pustejovsky (1991a,b, 1995) assumes, are intrinsic and rather fixed to the semantic component of a nominal. In this respect, the construal of a property reading in the Middle Construction schema will principally be motivated and substantiated by the semantic co-compositionality between the Subject nominal and the verb -- i.e. the intrinsic qualia of the nominal will be closely associated with the semantics of the verb. As discussed earlier in this section, however, qualia can be added by contextualization including adjuncts, sentence stress, and other pragmatic inferences - while others are suppressed or overridden. Besides conventional qualia, *London*, for instance, can be perspectivized in terms of its accessibility from outside areas -- a new perspective from which one can specify unconventional qualia.

8. CONCLUSION

The semantic well-formedness of middle expressions is determined by the foregrounding of qualia roles inherent to the Subject referent. Various sorts of information obtained from the context also serve to add and foreground the relevant qualia roles. The range of information available encompasses not only the addition of an adjunct but also discourse information. In predicating a property in the Middle Construction, particularly stressed is the import of telic qualia of the Subject nominals. With the contextual information given by the semantics of adjuncts, this ultimately contributes to the property construal of the Subject entity. Agent-like characteristics are a manifestation of the qualia that are asserted -- through contextualization -- to be "intrinsic" to Subject nominals. Instantiations of the Middle Construction can vary in acceptability depending on the construal of the Subject referent with respect to qualia. The account of middles presented here -- made in terms of the encyclopedic structure of nominals, and their semantic association with verbs and other contextual information -- not only can substantiate why some verbs, but not others, are more eligible to occur in middles, but also explains why middles often contain artifacts in the Subject referents, and why middle expressions fluctuate so much in terms of acceptability judgments.

NOTES

*The present paper is partly based on a presentation read at the fifteenth national Conference of the English Linguistic Society of Japan, held at Tokyo Metropolitan University on November 23-24, 1997. This paper deals with one of the basic ideas integrated into a portion of a thesis submitted to the University of Otago, New Zealand. I am grateful to J. Taylor for his helpful comments and suggestions. I thank M. Campana for his stylistic improvements. I also thank R. Cairns for his comments of an earlier draft of this paper. Of course, I am solely responsible for remaining inadequacies.

1. I do not enter into discussion of the details of the Construction schema, of the Construction semantics of middles, nor of their conceptual relationships with other related Intransitive Constructions. For details, see Yoshimura (1998a).

2. Besides these, notions such as Pseudo-activity (Jespersen 1927), Quasi-agentive role (Condoravdi 1989) and Archagonist (Rosta 1995) concern the semantic characterization of Subject NPs in middles. I do not discuss these in the present paper.

3. For details on the survey of the *bureaucrats* example and middles, see note (24) and Yoshimura (1998a).

4. In order to specify the meaning of a verb in a given context, Pustejovsky assumes one lexical sense of a verb, any other readings being derived through a generative mechanism in composition with its argument. Therefore, co-compositionality between grammatical elements -- in particular between a verb and its complements -- underlies the birth of polysemy. The notion of cospecification has been proposed as a generative device that accounts for the disambiguation process of this kind of verbal polysemy involving Co-composition.

5. Qualia (the singular form, quale) is a word originating from Latin. It generally expresses the quality of a thing; as a thing having certain qualities (S.O.E.D. 1973).

6. The part/whole relationship here is comparable to the notion of immediate scope of predication. For more details, see Langacker (1991).

7. In general, the qualia knowledge of nominals specifies how one conceptualizes things; one can conceptualize a thing in terms of its being a "container", "space", "surface", "figure", "artifact", and so on (see also Taylor 1991). The noun *knife* can be conceptualized in terms of various qualia; its "color", "shape",

"weight", "material", "purpose", etc. In a broader sense, qualia structure may be comparable to the notion of "domain matrix" (Langacker 1990a, 1991), or "frame" (Fillmore 1977, 1982), but a distinction can be made in that qualia structure is mainly applied to account for semantic compositionality of syntactic constructions, such as the qualia roles of the complement in VP (verb and noun), or those of the Subject in [NP-Predicate], etc.

8. Preferred interpretations can occasionally be overridden by context. I shall discuss the problem of contextual factors in later sections.

9. In principle, it is difficult to demarcate the range of environments that can determine a specific reading of a word. In the present paper, following Pustejovsky (1991, 1995), I take VP and S as the "environments" that can serve as the base for coercion.

10. See also Goldberg (1995: 167) which claims that no cognitive decision in the meaning of *encourage* can mediate between the causing event and the entailed motion.

11. For more details, see Yoshimura (1998a).

12. For more details, see Yoshimura (1998b) for the syntactic tests that are used to diagnose the lexical transitivity of verbs.

13. For more details, see Yoshimura (1998a).

14. Example (13-a) is due to J. Taylor (p.c.).

15. There are counterexamples showing that humans can appear as the Subjects of middles; for instance, *John doesn't interview very well/ Mary photographs very well*. I shall give an account of why humans can occasionally appear as the Subjects of middles in section 7.4.

16. The term Responsibility is due to Lakoff (1977). In middles, Responsibility -split is ruled out by means of the semantic distribution of adjuncts, as well as of that verbs. For more details, see Yoshimura (1998a).

17. Gricean Maxims are highly relevant to this issue. I do not enter into details in the present paper. For more details, see Yoshimura (1998a).

18. Besides adjuncts, the location of contrastive stress (on verbs or nouns), the discourse contrast, and/or the pragmatic inference that obtains from discourse information may serve to supplement this insufficiency.

19. I do not enter into discussion of Gricean Maxims and informativeness in relation to the semantics of middle expressions. For more details, see Yoshimura (1998a). Also, it is interesting to note the fact that Experiencer Subject middles often take verbs expressing mentally "downward" states. Some examples are *Mary {shocks/ panics/ frightens/ astonishes/ discourages/ frustrates} easily*. Compare these with the following; *Mary {??brightens/ *encourages/ ?*animates/ ??comforts/ amuses/ *delights} easily*.

20. Let us note here the major differences in qualia roles advocated by Pustejovsky (1993, 1995) and myself. Both Pustejovsky and I take the view that nominals contain information specifically invoked in association with contexts. Not only does this contribute to the identification of the creative sense of nominals, but also, to the disambiguation of contextual meaning as a whole. Our differences reside in the view of how qualia roles are structured. Pustejovsky presupposes that qualia roles are basically fixed to a nominal, determining its meaning just as a list of arguments determines a verb's meaning (cf. Pustejovsky 1995: 86). Contrary to this view of qualia, I emphasize the aspect of "open-endedness" for qualia roles. Although I admit that some qualia are more intrinsic (hence, more invariably fixed) to a nominal than others, various contextual factors -- as I have developed in the present paper -- can add or foreground less intrinsic or non-intrinsic qualia to a nominal. See also the notion of "domain matrix" with respect to this open-endedness property (cf. Langacker 1988: 56 ff.; Haiman 1980).

21. The fact that discourse contrast serves to add certain qualia to a nominal obviously has much to do with an increase in informativity. Again, any given property is potentially variable from one entity to another, crucially depending on which quale is being foregrounded in a discourse.

22. This line of argumentation is comparable to that of (11), where contextual support enables the intransitive use of the verb *drive*.

23. Some GB adherents appeal to the Affectedness Constraint to restrict the applicability of Middle Forming Rules. See, for example, Fagan (1988) and Carrier and Randall (1992).

24. The example (33-e) is due to Ken-ichi Seto.

25. In my survey, ten informants showed a variety of judgments. Two of the informants (New Zealanders) flatly refused the sentence, while two Americans accepted or marginally accepted it. One British and one Singaporean did not accept it completely, noting that others might possibly accept it. The sentence was presented without any contextualization, except for a note that *bureaucrats* do not designate persons who commit bribery on someone else.

26. This example (37) is due to J. Taylor.

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