Weak Indefinites

Greg Carlson, University of Rochester

0. <u>Introduction.</u> The idea that events should be countenanced as entities in a semantics, commonly attributed to Davidson (1967), has received a great deal of attention over the past couple of decades.[1] Work tends to focus on the internal structure of these events (connecting it to work on aspect and aktionsart), on the one hand, and the usefulness of having them, rather than something like propositions as substitute, within the propositional semantics. See Zucchi (1993), Parsons (1990), and Rothstein (1998), and Pustejovsky and Tenny (in press) as a just few indicators of this interest. Here, I am going to outline, and partially motivate, a way in which the event semantics and the propositional semantics might be related to one another.

I am going to assume, for the time being without question, the syntactic framework made use of in Diesing (1992). We will examine some semantic phenomena that helped motivate her framework, and propose in the end that the character of semantics itself, and not syntactic stipulation, gives rise to the phenomena that Diesing observes and uses to motivate her own syntactic framework. An event semantics will be the most important ingredient in articulating how this might happen.

1. Diesing's Framework

Though at times Diesing (1992) makes occasional use of the Barriers framework (Chomsky, 1986), in the main the assumptions are those of a version of Government and Binding theory (Chomsky, 1981). Working mainly with data from German, Dutch, and English (though other languages come into play as well), Diesing sees great usefulness in a certain version of the VP-Internal Hypothesis, in which subjects (may) originate within the VP and be subsequently moved to a higher position in the synatx. This higher position, within the IP, is also a subject position, resulting in two distinct subject positions.

Evidence from the interpretation of bare plurals is one type of data Diesing considers. It is well known that bare plurals have (at least) two distinct readings: an existential reading, and a generic reading. The hypothesis is that bare plurals in subject position are interpreted existentially if appearing within the VP, but generically if appearing in the IP position. Consider (1).

1. Sharks are visible. (ambiguous)
      a. [$_{IP}$ Sharks [$_{VP}$ e are visible]]
      b. [$_{IP}$ [$_{VP}$ Sharks are visible]]

(1) is ambiguous between two readings, an existential reading in which there are some sharks that can be seen at the moment, and another generic reading in which it is stated that sharks, in general, are of such a size and composition as to make them visible entities (unlike air, microbes, or electrons). The generic reading woild thus be accorded the syntactic structure (at LF) in (1a), while (1b) would give rise to the existential reading.

Some syntactic motivation for (1a) vs. (1b) comes from German data, which I will illustrate with but one example. In German it appears that the particles "ja doch" mark the left-hand boundary of the VP; so if a subject appears to its right, it is within the VP, and if it appears to the left, then it is outside the VP, in the IP. Now consider the examples in (2), with a bare plural subject.

2.   a. ...weil ja doch [Linguisten Kammermusik spielen]
        '..since there are linguists playing chamber music'

        b. ...weil Linguisten ja doch [Kammermusik spielen]
        '...since linguists (in general) play chamber music'

If the subject appears within the VP, as in (2a), then it is interpreted existentially; if it appears outside the VP, under the IP, it is interpreted generically, as in (2b). To give an account of such data, Diesing propose the Mapping Hypothesis. The semantic assumptions are, loosely, that of DRT (Kamp, 1981, Heim, 1982) in which there is an operation of existential closure unselectively binding all free variables, and operators such as quantifiers, modals, and other elements that create tripartite structures consisting of an operator, a restrictive clause, and a "nuclear scope" (also known as the "matrix clause"). According the the Mapping Hypothesis, different portions of the sentence are mapped into restrictor and nuclear scope depending on their syntactic positions:

>   *Mapping Hypothesis* (p. 10)
>   --Material from VP is mapped into the nuclear scope
>   --Material from IP is mapped into a restrictive clause

It is stipulated that existential closure takes place at the VP level (nuclear scope), and it is assumed that bare plurals are indefinites which introduce a free variable. Thus, any bare plural within the VP (at LF) will have its variable bound by an existential quantifier, so (1b), for instance, would be interpreted as follows:

> $[_{IP}$ Ǝ $[_{VP}$ Sharks(x), are visible (x)]] (existential reading)

On the other hand, if the subject appears under the IP, it is mapped to the restrictor clause of some IP-level operator. In the case of (1b), this is assumed to be the GEN operator, which creates a tripartite structure; the GEN operator binds the varible introduced by the bare plural in its restrictor, giving rise to a generic reading for the NP:

> $[_{IP}$ GEN (Sharks (x)) ($[_{VP}$ e are visible])] ("universal" reading)
>   (= roughly, "If something is a shark it has a propensity towards being seen")

This line of analysis generalizes to other argument positions, such as object position. So (3a) vs. (3b), in which the bare plural is interpreted existentially in (3a) but generically in (3b).

3. a.John petted dogs (existential, within the VP, bound by existential closure)
   b. John hates dogs ("universal", outside the VP, in restrictor of GEN)

This line of thought generalizes to other types of DP's, not limited to bare plurals. Though here, and I'll be very brief about this, the kind of thinking shifts from reference to higher tripartite structure operators to a notion of "presuppositionality" (restrictor clauses have a presuppostional character to them). The consequence is that any NP/DP that is "presuppositional" in nature <u>must</u> move into a higher position in the IP to be interpretable; it cannot remain within the VP. This makes for a lengthy list of types of DP/NP's:

>   --Things "bound by" the generic operator
>   --Strong quantifiers

--Definites and demonstratives
--Proper names
--Specific indefinites
--Partitives
--Unfocused elements (?)
--Pronouns (?)

(Diesing discusses unfocused elements only briefly and inconclusively, and does not mention pronouns explicitly, but I'm assuming their definiteness would also require them to move, at least on deictic and E-type readings.) At this point we ask, what does this leave that need not move out of the VP in order to be interpretable? It turns out to be just the class of weak indefinites, and nothing else.

This concludes my very brief expositon of the Diesing (1992) framework. This discussion certainly does not do justice to the range of data she considers in motivating her theory; nor does it do justice to the problems, technical, conceptual, and empirical, that might be noted. My present task is to try and replace the Mapping Hypothesis with a semantically-motivated framework from which the observations associated with the Mapping Hypotheis might follow as a consequence. The twin independent stipulations, the Mapping Hypothesis itself, and that Existential Closure occurs at the VP level only (when in the founding work it was a discourse-level operator), are behind my concerns. But for now, let us return to the question why why only weak indefinites are left in the VP.

2. "Incorporated" Nominals. I want to argue that the VP is the domain of a context-free interpretive mechanism specifying an event-type, which is then the input to the usual context-sensitive propositional semantics generally assumed for all levels of the sentence. That is, something fundamentally different goes on within the VP that does not go on "above" the VP--it is only information about types/properties that appears there and not information about (contingent) particulars. Hopefully, it will follow from this that only weak indefinites may appear within the VP.

The strategy I am going to pursue here is to examine the nature of some constructions which, depending on plausibility alone, I would regard as paradigm cases of NP/DP's that must occur within the VP. Incorporation and incorporation-like structures would appear to be the best bet. A paradigm case is presented in (4):

4. Arnajaraq eqalut-tur-p-u-q (West Greenlandic, Van Geenhoven, 1996)
   A.ABS salmon-eat-IND-[u]-3SG
   "A. ate salmon"

Here, the direct object form displays a lack of case-marking (we might also talk in terms of "weak case, de Hoop, 1992), is semantically neutral with respect to number, and must appear adjacent to verb, as is typical of those languages with overt morphological incorporation (e.g. Baker, 1988).

I also include bare count singular forms in many languages, those normally displaying articles and/or case-marking in the normal instance, but lacking these in many direct-object constructions. Hindi, for instance, has no articles but normally displays case, but allows some bare singular objects:

5. a. anu kitaab   paRh rahii hai (Hindi, Dayal 1999)
     Anu book[sg] read-PROG-PR
   "Anu is reading a book"

cf: b. anu   kitaab-ko   paRh rahii hai
      Anu book[sg]-ACC read-PROG-PR
    "Anu is reading the book"

Norwegian has articles but no case-marking (aside from pronouns), but can countenance direct object bare singulars.

6   Jeg har bestilt billett. (Norwegian, Borthen 1998)
   I have ordered ticket[sg]
   "I ordered a ticket"

And Albanian has both articles and case-marking, both of which are absent in bare singular object constructions:

7. Ana do të blejë biçikletë (Albanian, Kallulli, 1999)
   Anna wants to buy bicycle[sg]
   "Anna wants to buy a bicycle"

In all these cases, not just any noun can go with any verb that can take that noun with an article. For instance, in Hindi one can "see girl" but cannot "see woman", and so forth. The semantics of these constructions from these (and other) quite diverse languages is surprisingly constant. You get indefinite readings that are neither specific nor partitive (the weak reading only, as pointed out by Enç, 1991, for Turkish); these show scope neutrality, with narrow-scope only readings; and they are existential. These are precisely the characteristics one might expect from noun phrases that are always found "within the VP" on the Diesing analysis. I am not saying these structures are "the same" in all respects, clearly they are not; but these striking semantic and formal similarities seem a good place to start.

A clear intuition one finds expressed in work on incorprated structures and bare singular (and, occasionally, plural) complements, is that the noun is combining with the verb in a way that is different from the way (true) arguments combine with verbs. The notion that these structures designate "typical activities", or that the noun "modifies the verb" to form a "complex predicate" represents a persistent driving intuition (Dayal, 1999; Haiden, 1996; Rapoport, 1996; Borthen, 1998, among others). I am going to build on these intuitions, but suggest instead that, rather than the mechanisms being different for combining verb and bare argument, they also differ in the kind of denotation expressed.

> Hypothesis: These types of structures give rise to a denotation that is within the denotation-type of verbs.

I am assuming here that the denotation-type of verbs is qualitatively different from the denotation-type of sentences. This is not so in most versions of propoitional semantics In a Montague grammar, for instance, a verb meaning is a function that is evaluated with respect to exactly the same parameters (same model, times, worlds, and assignment functions) as full sentences, and everything in between. That is, in Zucchi's (1993) terms, the denotations of verbs should not be construed as a subset of the set of propositions. I will shortly sketch a system in which they differ.

The idea that incorporation-like structures yield meanings that are the same as basic verb meanings receives some spotty support from the fact that in some incorporating languages, an incorporated transitive verb may take a "doubled" object, as in the Mohawk example in (8), as if it were still a transitive verb.

8. Kikv rabahbot wa-ha-its-a-hnini-'ki rake-'niha (Mohawk, Baker, 1995)
   This bullhead FACT-M..sg.SUBJ- fish-buy-PUNCT my-father
   "My father 'fish-bought' this bullhead"

3. Event-types. I am going to follow Bach (1986) in assuming that verbs denote what he calls eventualities. These eventualities, in the present case, are not semantically functional: they have no "argument positions" in the semantics of the familiar sort (though the sentences they appear in do have syntactic argument positions). Verbs and verbs plus their incorporated arguments denote exactly the same sort of thing; verbs are not an n-place functions that are reduced to an n-1-place functions upon addition of an argument, at this level of structure. Let's be a little more specific.

I am going to take one element of the model to be **E**, a set of eventualities (which I construe here as event-types). A given verb denotes some member of **E**, and the verbs collectively denote a subset. Each element of **E** is related to other elements of that set. As commonly assumed, it has a complete join semilattice structure (not necessarily with atoms) defined by the part-of relation ≥. (Intuitively, $[\![run]\!] \leq [\![move]\!]$, $[\![sing]\!] \leq [\![sing \vee swim]\!]$, it is <u>not</u> the case that $[\![laugh]\!] \leq [\![eat]\!]$, and so forth.)

Arguments added at this level modify the verb's denotation to create, intuitively, a more specific event-type which is itself a(nother) member of **E**, i.e. one that is a part of the original. Thus: $[\![eat\ cake]\!] \leq [\![eat]\!]$. Furthermore, $[\![eat\ cake]\!]$ will enter into the lattice structure of **E** generally, like the meaning of a basic verb.

We need to say something about the arguments that are added (noting once again, this is not, at this point, a function-argument semantics). Certainly among those to be added are bare singulars and number-neutral forms. There is some uncertainty about what we should take these to denote. One idea is that they denote kinds (Carlson, 1977; Chierchia, 1998). But more recently (e.g. McNally, 1998) the term "property", has been employed, and without really differentiating or deciding between the two here, I'll employ the somewhat more neutral term "property", as on Chierchia's (1998) account bare singular count nouns cannot denote kinds, and I want them included. **P** is the domain of nominal meanings, and each nominal finds a meaning in this domain. **P** has a complete join semilattice structure defined on it that is similar to that of **E**, so that, intuitively: $[\![cat]\!] \leq [\![mammal]\!]$, $[\![fat\ dentist]\!] \leq [\![dentist]\!]$, and it is <u>not</u> the case that $[\![table]\!] \leq [\![dog]\!]$.

If N and N' are property-denoting arguments, and $[\![N]\!] \leq [\![N']\!]$ both in **P**, and $[\![V]\!]$ is a member of **E**, then $[\![V\ N]\!] \leq [\![V\ N']\!]$ and both are in **E**. (And, in the example, if $\neg[\![N]\!] \leq [\![N']\!]$, then $\neg[\![V\ N]\!] \leq [\![V\ N']\!]$). So, again intuitively $[\![eat\ cake]\!] \leq [\![eat\ food]\!]$, and so on.

At this point, the ontology only consists of types of things; there is, quite plausibly, no room here for entities such as individuals; to my knowledge individual-denoting experssions such as proper names are not incorporated. There are no times, no possible worlds, no truth, only types. It is tempting to use the term "concept" at this point, but I am going to leave open the question of whether this is an appropriate reinterpretation.

• Unmotivated, but plausible assumption: individuals (you, me, Bob) are not properties (or types) and such expressions have no denotation in **E** or **P.**

The only types of variables countenanced for nominal expressions at this level of interpretation are property-level variables; there are no individual-level variables. If X is a property-level (nominal) variable, the interpretation of $[\![V\ X]\!] = [\![V]\!]$, that is, it will

make no contribution to the interpretation of the consituent until it is assigned a value from **P**.

4. <u>VP meanings</u>. Above was sketched a notion of what a verb meaning might be. In this section I outline a proposal for VP meanings. This is motivated by two considerations. One the one hand, we need to provide for the addition of other argument expressions; incorporation phenomena only appear to be limited to one argument, typically the direct object but occasionally the subject. The other consideration is we want to be able to define weak quantifiers, such as "five" or "many", which appears to require that a counting of individuals be employed.

To accomplish this, I am going to very roughly follow Bealer (1982) in his definition of extensions of properties. Like the characterizations of verb meanings given above, again we define things non-propositionally.

First, we define a domain Σ of token, ephemeral events. If I write the letter "t", and ten seconds later, write the letter "t" again, there are two distinct token events, even though they are of exactly the same type, writing the letter "t". The extension of a given event type E is $^U E \subseteq \Sigma$, intuitively the set of token events instantiating that event-type. However, these events are not, at this point, situated in worlds; they are not provided with spatio-temporal relations to one another, and have no part-whole relations except as provided for by a join semilattice structure is defined on Σ . The lattice structure of **E** is projected homomorphically onto the domain of Σ,.   Thus $^U[\![sprint]\!] \subseteq {}^U[\![run]\!] \subseteq {}^U[\![move]\!]$, and $^U[\![fat\ cat]\!] \subseteq {}^U[\![cat]\!] \subseteq {}^U[\![mammal]\!]$. However, if in a given situation I build a house, and as a part of building that house I hammer a nail, then at this level of representation my hammering of the nail would not be a part of building a house. This specification woild have to await the mapping of the members of Σ into possible worlds.

Corresponding to **P** there is another domain **U** of some sort of entities and their pluralities, upon which is defined a join semilattice structure, to account for pluralities. These entities are best understood as property-instantiations, and not as individuals proper. The problem is that the same individual may have different properties at different times, and in different worlds. The same individual may be a child, then an adult; a student, then a lawyer, and so forth, so the members of **U** might be looked upon as individuals-while-they-are-an-N, and not individuals proper. If N is an argument property term P, its extension is $^U P \subseteq \mathbf{U}$. We need to make provision for properties of pluralities in **U**: if $a \in {}^U[\![N]\!]$ and $b \in {}^U[\![N]\!]$, then $a \lor b \in {}^U[\![N]\!]$ (but not conversely, to account for collective readings). That is, if the parts of a group instantiate a property, then the group instantiates that property. Furthermore, if N, N' are property-denoting terms and $N \leq N'$, then the extension of N will be a sublattice of the extension of N'.

Finally, the lattice structure of the verb denotations is projected onto the domain of VP denotations: If $^U[\![V\ N\ ]\!] = A$ and $^U[\![V\ N']\!] = A'$, and if $^U[\![N]\!] \subseteq {}^U[\![N']\!]$, then $A \subseteq A'$. This needs to be made recursive, to account for the addition of more arguments. I am going to assume a version of the proposals of Carlson (1984) to add arguments. Here, each argument is associated with a thematic role θ, among the set of thematic roles, assigned to arguments by the syntax, which operates on arguments to produce a denotation $\theta(^U[\![N]\!]) \subseteq \Sigma$. This denotation is intersected with the existing event-type, to produce an event-type which is a subset of the that event-type. As the arguments are assigned different θ-roles, the denotation for each argument will be different, thus distinguishing them semantically from one another. What this means is that for any θ_i and θ_j, if the two are distinct, $\theta_i(^U[\![N]\!]) \neq \theta_j(^U[\![N]\!])$ (intuitively, the set of events a participates in as a, say, Agent, are distinct from the set of events it participates in as a Patient, for instance). Variables for

types (which include the suprema of the nominal expression that enter into the construction) are handled in the same way as above (see Guerts, 1996, for one motivation for property-level variables). There is some question of the need for property instantiation variables; it depends on whether the scoping of weak indefinites with respect to one another can be handled through the mechanism of distributivity, which remains an open question at the moment.

Weak indefinite quantifiers, such as "five", "several", "many", "some" and so forth, are treated as essentially intersective modifiers of nominal meanings. That is, if $^\cup[\![\text{five}]\!]$ denotes all groups with five atoms, and $^\cup[\![\text{cats}]\!]$ denotes all individual and groups of cats, then $^\cup[\![\text{five}]\!] \cap {}^\cup[\![\text{cats}]\!]$ will be all those groups that are cats that have five members (Kamp and Reyle, 1993). This is reflective of the fact, noted by Johnsen (1987) that the weak indefinites are their own converses, in contrast to the strong quantifiers.

5. IP meanings. In going from VP to IP, we make a transition to the usual sort of propositional semantics. Before this point, there is no truth, worlds, times, only denotation defined on sets that are types or extensions of types. These types (via their extensions), however, are projected homomorphically into the set of propositions, defining a subset of them.

We now include, at the IP level, a set of possible worlds W and a domain of Individuals **A,** into which **U** is mapped, with the possibility that any two or more members of **U** might be mapped to the same members of **A**.. We need a mapping from Σ to W. I'll go the unimaginitive route and assume every member of Σ is mapped to some member of W. I'm assuming ephemeral, token events "get to" make but one "appearance" in the structure of possible worlds, and then they're done for. Two different events can be mapped to the same world, and possibly to the same event in that world. (Here, I actually have in mind an event-structure of the type discussed in detail in Kamp, 1979. I here assume events are parts of possible worlds, but this is only a convenience).

Thus, an event-type E designates a proposition in the following way: $p \subseteq W$ is the proposition defined by $p = \lambda w \exists e\ [\ e \in {}^\cup[\![E]\!]\ \&\ e \leq w]$. Note in particular that if E is expressed by [V(N)], and if E' is expressed by [V(N')] (where the V is the same in both), the set of worlds defined for $^\cup[\![V(N)]\!]$ will be a subset of the worlds defined for $^\cup[\![V(N')]\!]$, preserving the structure of the domain of evantualities.

In more conventional, functional terms, this is the proposition that would be associated with the following expression (assuming V to be a two-place predicate):

$$^\wedge\exists e\ \exists x\ [V(x)(e)\ \&\ N(x)]^{M,w,i,g}$$

That is, the existential closure occurring at the transition from VP to IP meanings is a reflection of the projection of the event-semantics meanings of VP's into the realm of propositional meanings.

6. Weak indefinites again. Now: why weak indefinites within the VP? It is because they conform to the structure of the VP meanings, whereas other expressions do not.. They conform to the structure in the following way: IF you have a situation that is accurately describable by saying, for instance, "John fed five dogs", it is automatically redescribable as "John fed five animals" OR "John fed at least four dogs". On the other hand, if you say "John fed most cats" or "John photographed every dog", it does not follow that he fed or photographed most animals, or every animal. This does not have to do with the upward, downward, or neutral entailingness of the quantifier. The issue is whether a

situation of type A is automatically redescribable as being of type B. Intuitively, this means that we examine situations "in isolation", i.e. as stipulated with no further information available.

There is a second, and at least as important reason why weak indefinites only appear within the VP, on Diesing's account. Namely, evaluation of such sentences as the following, without weak indefinites, require context, i.e. more information than is given by the event-type itself:

9. a. John fed every dog.
   b. John fed those dogs.
   c. John fed some of the dogs.
   d. John fed MANY dogs (and not others)

In order to evaluate the truth of such sentences, it is necessary to know, for instance, if "every dog" is all the dogs there are. If you have a group of five dogs that have been fed, has every dog been fed? You cannot tell, without knowing whether there are other dogs (in the context) that have not been fed. The evaluation of "those dogs" requires context to know if "those dogs" are the ones being referred to at the moment; partitives like "some of the dogs" requires that you have identified, in the context, a set of dogs, some of which were fed and others (quite possibly) not. For "proportional" readings of the weak indefinites (9d), again, the implication is that some have not been fed, otherwise the utterance is infelicitous. Names, too, require context, to know which individual of that name is being referred to, as do definite descriptions and indexical pronouns. The case of specific indefinite readings, in an intuitive sense, requires context, as outlined in Enç (1991).

The present question is whether the notion of "context" that is introduced at the IP level is simply a stipulation, or whether it flows from the nature of the interpretations themselves. If we view context in the way that is most common at the moment in semantics, flowing from the work of Stalnaker (1978) (see also Chierchia and McConnell-Ginet (1999) for a textbook presentation), it is what is taken to be the case for present conversational purposes. This requires reference to a notion of truth and presupposition, both of which are propositional in nature, and cannot be defined at the VP and V levels with the machinery presented here. As a matter of practice, the operators that require a restrictor clause, as in the case of strong quantifiers, commonly have the restrictor clause "filled in" from context by propositional information. Thus, any expression that requires reference to context to be assigned a value must appear at the IP level, and will be undefined at the VP level. In addition, we observe that sentence-type operators that make reference to context, such as tense or modals, appear within the IP at the relevant level of interpretation.

7. <u>Conclusion</u>. I have outlined the basics of a system of semantic interpretation that attempts a marriage of event-semantics and propositional semantics which will have some explanatory force in characterizing certain constructions of natural language and their interpretations. I have made almost unquestioned use of Diesing's (1992) syntactic framework, which makes a clear separation between VP and IP levels in the syntax, setting aside the various critiques of the framework (e.g. Bowers, 1992; Bobaljik, 1996). At a more abstract level, I have argued that any syntactic theory must allow for the parceling out of two fundamentally different types of information in the semantic interpretation, with the event-semantics portion providing a kind of "core" input into the more usual propositional semantics, which is about the interpretation of entire sentences in context. This paper has explored but one consequence of this proposed arrangement, an account in Diesing's terms of why weak indefinite expressions are the only argument

types that do not have to be "moved out" of the VP. This is because they, as a class, preserve the lattice structure of eventualities, whereas others, as a class, do not; and, further, they can be defined without reference to context, a propositional notion, whereas the remainder require reference to context, and thus can only receive an interpretation at the IP level, on the Diesing account. I have tried to motivate via the architecture of the semantics proposed what amounts to a stipulation on the Diesing story, that is, that there is existential closure at the VP level (only), by noting that the existential quantifier is a consequence of the projection of eventualities into the domain of propositions. In a vaguer way, I have also attempted to shed some light on the question of why, on a common view of syntax, there appears to be a "higher" and a "lower" argument position for arguments; this makes some sense if we think about the need for argument information in both the event and propositional semantics. In this same way, I may have also been wrestling with the problem of how to implement the insights of Kuroda (1972) and Ladusaw (1996) in attempting to characterize the phenomenon of "thetic" and "categorical" judgments.

In closing, I want to return to some observations that have been made in the recent literature which the framework presented here has the potential for shedding some light on. In McNally (1998), on existential sentences of English, it is proposed that "[t]he postverbal NP will thus have to be interpreted as a property or quantification over properties" (p. 375) This is her account of why weak indefinites only may appear in these constrcutions. If we take "there" sentences to consist of a property meaning in the postverbal position, which is a VP-internal position, and only acceptable under those circumstances, then we can reproduce McNally's observations within this framework. Note also, as has been known for some time, strong quantifiers are also acceptable in this construction, but only if they have a "kind" reading, as in (10). We take this as evidence that property variables may also occur in this position.

10.   There is every *(kind of) animal in that zoo

Similarly, van Geenhoven (1996), notes that it is possible to associate a non-incorporated quantifier with an incorporated nominal, including weak quantifiers. If the quantifier is strong, however, the variable ranged over must refer to kinds, and not individuals:

11.   Juuna tamarmik atuager-si-v-u-q
        J-ABS all   book-get-IND-[u]-3SG
        #"J. got all the (individual) books"
        "J. got all kinds of books"

Again, if incorporated constructions involve only a place for properties, and not individuals, then within the framework presented we can begin to understand why this might be so.

Footnote

1. This is the contents of a talk delivered at the NP to DP Conference in Antwerp. Different versions of this work have been presented at the University of Washington, McGill University, the National Technical Univerity of Norway/Trondheim, the Thermi Conference on Aspect. I wish to thank the members of these audiences for their many informative comments, and Jeff Runner for his help.

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