In the study of the relation between syntax and semantics, an important tradition of research has developed on the nature of the individual level and stage level distinction among predicates, first noted by Milsark (1977) and subsequently elaborated by Carlson (1977), Kratzer (1989), and Diesing (1990). This line of study has attempted to explain how the difference between the two types of predicates, generally construed as a semantic difference, manifests itself in different syntactic constructions which are allowed with the predicate (there-existential sentences and perceptual report sentences, to take two examples). The relationship between syntax and semantics has also been studied in depth by Kuroda (1972, 1992), in his examination of *wa*/*ga* sentences in Japanese. He has proposed that the different syntactic sentence constructions correspond with the two different types of logical judgment originally proposed by Brentano and Marty, the thetic and categorical judgments. Ladusaw (1994) attempts to bring these lines of study together in order to explain certain characteristics of the ILP/SLP distinction with Kuroda’s distinction between judgment types. In this paper, I attempt to build upon Ladusaw’s account, by providing a syntactic representation of the ILP/SLP and thetic/categorical distinctions. To do this I will examine the syntactic accounts of Kratzer and Diesing of the ILP/SLP distinction, and the account of Kuroda of the thetic/categorical distinction, in order to suggest how the distinctions interact on a syntactic level. I then hope to show how the semantic relations Ladusaw draws between the predicate distinction and judgment distinction are mirrored in the syntax. Finally, I hope to use Kuroda’s
logical notation (1992) to characterize these distinctions at the level of logical form, in order to
explore some of the ramifications of the two distinctions.

Kratzer and Diesing on Bare Plurals:

Diesing (1990), following Kratzer (1989), notes that an ambiguity can arise in the meanings
of sentences containing bare plurals. Specifically, an ambiguity arises for bare plurals combined with
stage-level predicates, which does not occur with individual level predicates. She illustrates this
ambiguity with the following examples:

1) Firemen are available
   a. $\exists_{x,t} x$ is a fireman $+ x$ is available at $t$
   b. $\text{Gen}_{x,t} (x$ is a fireman $+ t$ is a time) $x$ is available at $t$
   c. $\text{Gen}_t (t$ is a time) $\exists_x x$ is a fireman $+ x$ is available at $t$

2) Firemen are intelligent
   a. $\text{Gen}_x (x$ is a fireman) $x$ is intelligent

With a stage level predicate, as in 1), the meaning is ambiguous between an existential and a generic
reading (and further ambiguous between multiple generic readings), whereas with an individual level
predicate, as in 2), only a generic reading is possible. To explain this ambiguity, Kratzer proposes
that individual level predicates have an argument structure such that the agent role is the external
argument, whereas the argument structure of stage level predicates has the Davidsonian “location”
variable as the external argument, and the agent role as an internal argument. The subject of the
predication is generated at the site of the agent role, so that individual level predicates generate
their subjects at Spec (I), in the traditional fashion, while stage level predicates generate their
subjects at Spec (V), within the scope of VP. The subject of the stage level predicate then moves to
Spec (I) in order to get Case, leaving behind a trace at Spec (V). Kratzer then proposes that
existential quantification occurs over VP, while the generic operator quantifies over IP. Thus, when
reconstructing a sentence with a stage-level predicate into logical form, one has the option of either
reconstructing the subject from its final location at Spec (I), so that it gets quantified by the generic
operator, giving the form in 1b), or in reconstructing the subject back onto its trace at Spec (V), so
that it gets quantified by the existential operator at VP, giving the logical forms in 1a) and 1c).

With an individual level predicate, the subject cannot be reconstructed to Spec (V), because there is no trace there, so that only the representation in 2a), similar to that in 1b), is allowed.

Diesing considers this argument, but notes that this analysis fails to account for quantifier float in individual level predicates.

3) The pigs are all in the yard
4) The pigs are all stout

Kratzer's analysis should allow 3), but would predict that 4) would be ungrammatical. The quantifier "all" should not be able to float to VP, because, since the subject "pigs" is generated at Spec (I), there is no NP in the VP to be bound. Diesing suggests that this indicates that even with individual level predicates, there is a relation which holds between the subject position at Spec (I) and that at Spec (V).

Kratzer seems to be arguing out of a tradition which assumes that subjects are generated at Spec (I); her proposal can be seen to be an argument for the possibility that subjects can be generated at Spec (V) in the case of stage-level predicates. The interesting cases for her are thus the stage-level predicates, whose argument structure, counter to traditional formulation, contains the Davidsonian variable as the external argument. Diesing is working out of a different set of assumptions. She takes it as given that subjects typically generate at Spec (V), and is therefore interested in showing subjects which generate at Spec (I). Thus, the interesting cases for her are those in which the subject is generated at Spec (I).

She proposes that the difference between stage and individual level predicates is a difference in INFL used in the sentence. A stage-level predicate uses what she terms "rising INFL", which does not assign a theta role to Spec (I). The subject, generated at Spec (V), therefore gets the agent theta role from the VP, as expected, and then is forced to move up to Spec (I) to get Case. As with Kratzer, this leads to ambiguity in reconstruction, because the subject may be represented either at Spec (I) or at its trace at Spec (V). Individual level predicates, however, use a different type of INFL, termed "control INFL". This INFL assigns an theta role to Spec (I). This assignment of a
theta role at Spec (I) requires that the subject be generated there. Furthermore, the VP still assigns its agent theta role within VP. This theta role must be filled, so the control INFL generates a PRO there, which is coindexed with the subject at Spec (I), and which receives the theta role from VP. The logical form of an individual level predicate can therefore not have the subject reconstructed into Spec (V), because the PRO blocks it, so the bare plural subject of an individual level predicate must be interpreted with the generic operator. This formulation allows quantifier float with individual level predicates, because the quantifier can bind the NP PRO, so that 3) is represented as

3a) The pigs are all PRO, stout.

which is syntactically well-formed, a result which can not emerge from the syntax of Kratzer's proposal.

Ambiguity with Definite Subjects:

An ambiguity, similar to that in 1), emerges when representing stage-level predicates with definite subjects in logical form. The sentence

4) Mary is working

can have two sorts of meaning, either that Mary is working at the present time or as a general property of Mary. The second type of meaning seems more or less synonymous with a sentence like "Mary is employed"; it ascribes a property to the entity “Mary”. These two different meanings can be illustrated by the following examples

5) Mary is downstairs working
6) Mary is working for J.P. Morgan

These two examples seem to correspond with a stage and an individual level predicate, respectively, so that 5) is a description of a particular state of events while 6) involves a property assigned to Mary. This is further illustrated by the perceptual report diagnostic

7) I saw Mary working
This sentence is perfectly well-formed, but the only reading available is the stage-level one; 7) can mean that I saw the event of Mary working, not mean that I saw Mary having the property of working (in the “employed” sense) (the sentence “I saw Mary employed” is well-formed as well, but only means that I saw Mary get hired, not that I saw her in the state of being employed). The property-like reading of “working” is blocked by the perceptual report construction, as one would expect from an individual level predicate, while the eventuality reading as allowed, as for a stage-level predicate. The logical representations of the two possible readings of 4) are

4a. $\exists_t \text{ working (Mary) at } t$
4b. \text{ working (Mary)}

where the reading in 4a) corresponds to 1a), while that in 4b) corresponds to that in 2a), where the quantified bare plural is replaced with the definite NP Mary.

A similar ambiguity arises with the sentences in which the verb is formed in the simple present, so that one is again allowed two different types of meaning, as illustrated by

8) Mary swims

a. Gen$_1$ swims (Mary) at $t$

b. swims (Mary)

The type of reading in 8a) would, for instance, emerge in a situation where one is describing the types of activities Mary does in her spare time, whereas that in 8b) might be used when one is entering Mary into a sporting contest (“which event will Mary be in?” “Mary swims”). As with sentence 4), the two meanings seem to correspond with individual and stage level readings for the predicate “swims”. The ambiguity is less pronounced, because there is less difference in meaning between the predication with the generic operator over time and the predication with no reference to time whatsoever, but I would argue that there is a difference. These two logical forms seem to correspond with those in 1) and 2) as well, so that 8a) corresponds both with 1b) and 1c) because of the presence of the generic operator of time, while 8b) corresponds again with 2a). The conclusion I draw from these two examples is that a single lexical item such as “working” or “swims” can be
ambiguous between an individual level and a stage level reading, a conclusion I draw from the parallels in logical form between 5a) and 8a) with the various meanings for 1), which is a stage level predicate, and those between 5b) and 8b) with the meaning for 2), which is an individual level predicate.

The examples in 4) and 8) suggests a problem with Kratzer's and Diesing's proposals. Kratzer's proposal is overtly lexically based, since it derives the difference in predicate types from the argument structure of the particular verbs involved. Diesing does not explicitly make her proposal lexical, but suggests it. Since she is basing her work on Kratzer's, and does not specifically challenge Kratzer's lexical formulation, it seems likely that she agrees with it. Her choice of terminology also suggests this; she compares the distinction between INFL's which is relevant to the ILP/SLP distinction with "raising" and "control" INFL. Those types of INFL are associated with their verb, a particular verb is lexically determined to use a particular type of INFL, and the implication is that the same holds true for the individual and stage level INFL's; a predicate is lexically determined to have one type of INFL or the other. Her account does not allow for the ambiguity between types of predication in 4), because the predicate "working" would be predicted to have only one type of INFL.

I find Diesing's account of INFL as the source for the ILP/SLP distinction very convincing on the whole, and would like to retain it. To account for 4) and 8), however, I would propose a modification to allow for both types of predication to emerge from a single lexical item. My feeling is that the two types of INFL proposed by Diesing are correct, but that they are not necessarily determined by the predicate used, but rather by the type of statement one wishes to make about the relationship between the subject and the predicate. Diesing's "rising INFL", which I will term "INFL₅", is used when one is making a predication relative to a certain time, while Diesing's "control INFL", which I term INFL₁, is used when one is making a property-like predication. I propose therefore that predication sentences like 4) and 8) can be made by either INFL₁ or INFL₅, and will allow both types of representation into logical form. This would mean that four meanings could arise from a sentence like
9) Firemen are working
   a. $\exists_{x,t} \text{ fireman}(x) + \text{working}(x) \text{ at } t$
   b. $\text{Gen}_{x,t} (\text{fireman}(x) + t \text{ is a time}) \text{ working}(x) \text{ at } t$
   c. $\text{Gen}_{x} (t \text{ is a time}) \exists_{x} \text{ fireman}(x) + \text{working}(x) \text{ at } t$
   d. $\text{Gen}_{x} (\text{fireman}(x)) \text{ working}(x)$

The first three meanings are akin to those from sentence 1). The meaning in 9d) is a little less apparent, but can be seen as making the rather trivial statement that being a fireman involves being employed. This meaning seems hard to use in conversational contexts, but one might use it in, for instance, tabulating census data and determining whether people who list the profession “fireman” on their form should be entered into the category of “working” (where “working” is synonymous with “employed”).

Thus, in the logical analysis of a sentence like 9), there is not one but two sources of ambiguity. The sentence can be analyzed as either involving $\text{INFL}_{1}$ or $\text{INFL}_{S}$. If it involves $\text{INFL}_{1}$, the subject is generated at Spec (I), and only one logical reading should result, that in 9d). If the sentence is taken to be involving $\text{INFL}_{S}$, two readings should result, one which reconstructs the subject at Spec (I) and gives a generic reading for the bare plural, as in 9b), and one which reconstructs the subject at Spec (V), and gives the existential reading for the bare plural. These two ambiguities are obviously not enough, however, because they only predict three logical representations of the sentence in 9), and four are given. Specifically, a representation involving $\text{INFL}_{S}$ which reconstructs the subject at Spec (V), with the existential reading, is given in both the representation in 9a) and 9c). Another source of ambiguity must therefore be posited to account for the two representations of 9a) and 9c). The crucial difference between the two sentences is that 9a) involves an existentially closed $t$ variable, while 9c) quantifies it with the generic operator. Thus, the $t$ variable seems likely to be the other source of ambiguity.

I would suggest that this is the case. The traditional semantic account of the difference between individual and stage level predicates is that stage level predicates are concerned with time, whereas individual level predicates are not. Kratzer proposed that this difference arose out of the argument structures of the predicate: SLP’s contained the Davidsonain variable while ILP’s did not.
Kratzer's account, however, can not allow for the ambiguity in 4) and 8) between the individual and stage level readings, because it is lexically based in the argument structure of the particular predicate. We need, therefore, to find another way to account for the presence of the Davidsonian variable in stage level readings and its absence in individual level readings. I propose that the source of the $t$ variable is at INFL, specifically that INFL$_S$ generates the variable while INFL$_I$ does not. This would provide a syntactic representation of the usual semantic account of the difference given above. Furthermore, the $t$ variable introduced by INFL$_S$ is allowed the same type of ambiguity in logical representation as bare plural subjects are; specifically, the $t$ variable is assigned by INFL$_S$ to the node where the subject is located, in this case Spec (I), and can be represented in logical form as either moving, like the subject NP, into the scope of VP, where it is existentially quantified, or can be represented as remaining within IP but outside VP, where it is generically quantified. I can not coherently give an account of the specific location of the $t$ variable in the syntax, but would merely like to suggest that it can be reconstructed either within VP as existential or within IP as generic.

This, then, accounts for the ambiguity between 9a) and 9c). In both, the sentence is analyzed as INFL$_S$, with the subject reconstructed at Spec (V) and receiving existential quantification. In 9a), the $t$ variable is also reconstructed within VP and existentially quantified, while in 9c) it is reconstructed within IP and quantified with the generic. The account as given so far, with logical ambiguities in a sentence like 9) between INFL$_S$ and INFL$_I$, between possible reconstructions of the bare plural, and between possible reconstructions of the $t$ variable, seems plausible in that it specifically predicts that the four logical representations. A further qualification is needed on this account, however, because of the unacceptability of the meaning

\[9c) \, ^*\text{Gen}_x (\text{fireman}(x)) \, \exists^I_t \, \text{available} \, (x) \, \text{at} \, t\]

According to the account, this meaning should emerge when the bare plural is reconstructed at Spec (I) and the $t$ variable is reconstructed within VP. Now, this meaning can be paraphrased as something like "at a specific spatiotemporal location firemen are generally available". This paraphrase does not make sense, because it seems contradictory to describe the a general
characteristic of firemen at a specific spatiotemporal location. To talk about a general characteristic of firemen assumes a range of spatiotemporal locations over which the general characteristic holds. Furthermore, it seems impossible to identify the truth conditions of the meaning in 9e); at a specific spatiotemporal location there is simply not enough information to assess whether or not the general characteristic proposed for firemen holds true. At best, one can identify whether there are in fact firemen available at the specific location, and assess the truth of that, but in doing so one is really assessing the truth of 9a). With this in mind, I would propose a further qualification on the reconstruction of the $t$ variable: that the $t$ variable cannot be reconstructed in a lower XP in the sentence than the subject is reconstructed at, but can be reconstructed within the same XP or at a higher XP than the subject. In logical form, this is equivalent to saying both that the generic quantifier has wider scope than the existential quantifier (because in the reconstruction from syntax the generic quantifier, at IP, has scope over the existential quantifier, at VP) and that the quantifier over $t$ must have a wider scope than the subject, which either gets narrow scope (as with the bare plural) or is not logically quantified at all (as with NP’s). The meanings for 9) can then be more accurately rewritten as

9) Firemen are working
   a. $\exists_t \exists_x \text{fireman}(x) + \text{working}(x)$ at $t$
   b. $\text{Gen}_t \text{Gen}_x (\text{fireman}(x) + t$ is a time) $\text{working}(x)$ at $t$
   c. $\text{Gen}_t (t$ is a time) $\exists_x \text{fireman}(x) + \text{working}(x)$ at $t$
   d. $\text{Gen}_x (\text{fireman}(x) \text{working}(x))$
   e. *$\text{Gen}_x (\text{fireman}(x)) \exists_t \text{working}(x)$ at $t$

Thus, 9a-c) and 9e) originate from an INFL$_S$ reading of 9) with the accompanying permutations of the $t$ variable and subject position ambiguities, and 9d) arises from an INFL$_I$ reading of 9). The unacceptability of 9e) is due to its failure to conform with the restriction on the scope of quantifier of the $t$ variable, because it is not allowed to have a narrower scope than the quantifier of the subject.

The other issue for this account which has yet to be addressed is the lack of ambiguity of sentences like 2) which only have the single INFL$_I$ reading, specifically the issue of why the INFL$_S$ readings are blocked for it. I feel that the adjective itself in 2) in some way must block the INFL$_S$
reading, and that this hinges upon the semantic account of the individual and stage level distinction mentioned earlier. An adjective such as "intelligent" does not involve reference to a particular spatiotemporal location, in the way that an adjective like "available" or a verb phrase like "is working" does. I do not know if the prohibition of the INFL$_S$ reading of "intelligent" occurs in the syntax, but it certainly can be considered as a manifestation of the semantic attributes of the predicate itself. Looking over the range of predicates, an oft-noted similarity emerges between the individual-level predicates and the stage-level predicates. ILP’s include all NP’s, some AP’s (like "intelligent" or "green"), and some VP’s (like "know French"), while SLP’s include all PP’s, many VP’s (like "is working" or "is running"), and some AP’s (like "available" or "sick"). The SLP’s all seem to have reference to some particular event or spatiotemporal location: this is obvious with PP’s, and is plausible with the VP’s and AP’s as well; the VP “is running” refers to some event of running in the world, and “sick” refers to some event of sickness. ILP’s, in contrast, do not have this feeling of referring to a particular event: NP’s and ILP AP’s refer to a property of the subject which is not manifested in a particular event, and the VP’s, like "know" do not seem to either. The sentence “Mary knows French” is not considered true because of a particular event of Mary knowing French but rather is true if it is a property of Mary that she knows French, while “Mary is running” is considered true if there is an actual event of Mary running in the world. The reference to an event in SLP’s allows formulation with INFL$_S$ with its attendant $t$ variable, while the lack of such a reference in ILP’s blocks INFL$_S$. INFL$_I$ is allowed for both types of predicates. Therefore, the sentence in 2) only allows a single logical representation, one which uses INFL$_I$, because the since predicate does not refer to any particular event or series of events, INFL$_S$ is prohibited, while 1) allows both representations based on INFL$_I$ and INFL$_S$.

In summary, the distinction between individual and stage level predicates is not one based crucially on the predicate itself, but on the type of claim one is making about the predicate. A sentence formed with INFL$_S$ is claiming something about the relationship between the predicate and an event (in the existential reading of $t$) or a series of events (in the generic reading of $t$), while a sentence formed with INFL$_I$ is instead making a claim about a relationship between the predicate
and its subject, either that the predicate is an integral characteristic of the subject, as in 2), or that the predicate is somehow definitional of the subject, as in the reading given for 9d). The syntactic behavior of INFL₁ and INFLₛ are as Diesing describes them, with the modification that the INFLₛ introduces the $t$ variable, which must be bound either existentially in VP or generically in IP, with a restriction on the relation between the scope of the quantifier of the $t$ variable and the scope of the quantifier of the subject. This account thus predicts the full range of possible readings for 1) and 2) in a somewhat coherent fashion.¹

**Japanese Syntax & wa/ga formations:**

Kuroda, in (1972, 1992), gives a description of the semantic difference between *wa* and *ga* sentences in Japanese. He notes the examples²

10) Inu ga hasitte iru  
   “a/the dog is running”

11) Inu wa hasitte iru  
   “the dog is running”

12) Inu ga neko o oikatete iru  
    “a/the dog is chasing a/the cat” or “a/the cat is being chased by a/the dog”

13) Inu wa neko o oikatete iru  
    “the dog is chasing a/the cat”

14) Neko wa inu ga oikatete iru  
    “the cat is being chased by a/the dog”

¹ the account further predicts a reading of 1) as a property of the form

1d) $\text{Gen}_x$ (fireman $(x)$) available $(x)$

which Diesing does not represent. This reading is somewhat hard to come by, but would be relevant if one took part of the definition of firemen to be that they are available. For instance, consider a situation where there is a fireman’s oath, which includes “I pledge to be at all times available”. If one is the fire chief, exhorting a department which is somewhat lax and most of the time certainly not available, one might say “Firemen are available”, and be making a true statement, even though the three readings in 1a-c) are not true (they are generally not available, nor are they available right now, which is why one is trying to rouse them to do better). The sentence is true in the reading in 1d), where one is appealing to the definition of firemen as given in the oath, without regard to the actual state of affairs in the world.

² Two important facts about NP’s in Japanese are that they are unmarked for singular/plural (although verbs are so marked, so the singular/plural is determined by the ending of the verb), and that they are unmarked for definite/indefinite. Thus the translation of “ina ga” is rendered as either “a dog” or “the dog”. “Inu wa” is translated as only “the dog” for reasons which will discussed shortly.
The characterization of the exact semantic function of *wa* and *ga* has traditionally been an issue of great interest in Japanese syntax. Kuno (1973) in a relatively standard account, defines their usage, in sentences out of context, as "thematic" for *wa* and "descriptive" for *ga*. The descriptive *ga* is used to present a state of affairs, while the thematic *wa* is used to focus attention on one NP within that state of affairs. He translates a sentence such as 11) by "as for the dog, it is running".

Kuroda characterizes the distinction as Brentano and Marty's distinction between thetic and categorical judgments. Brentano proposed two different types of judgments: the thetic, which is logically subjectless and involves the simple recognition of an event, and the categorical, which involves the subject of the predication and its relation to an event. Kuroda proposes that sentences with a NP marked with *wa* are categorical, relating the marked NP to the event described, while sentences without *wa* are thetic, simply describing the event. Thus, 10) and 12) are thetic judgments, which concern only the event of running or chasing, while 11) and 13) concern the relation of "Inu" to that event, and 14) concerns the relation of "neko" to it.

To describe the conditions in which these two judgments are acceptable, he distinguishes between "specific" and "generic" sentences, which refer respectively to a particular event and to a generalized state of affairs. In examining the relation between this distinction and the two types of judgments, the following pattern emerges:

*ga* NP's: (specific S, definite NP) (specific S, indefinite NP) *(generic S, definite NP) *(generic S, indefinite NP)

*wa* NP's: (specific S, definite NP) *(specific S, indefinite NP) (generic S, definite NP) (generic S, indefinite NP)

For Kuroda, the impossibility of a categorical judgment in a specific sentence with an indefinite NP arises because of the necessity for a subject in a categorical judgment. If, in a categorical judgment, one is concerned with the relation between the subject and the predicate, with an indefinite subject, one would be "directed not towards its individuality, but towards it as a completely unmarked representative of those individual entities that share the attribute represented by the noun used as
the subject, say *dog*, so that, by describing the relationship between that unmarked representative and the predicate, one would really be describing the relation to "an arbitrary individual entity that might be names by the particular attribute used to refer to it, *dog*," so that one would be making essentially a generic statement. (Kuroda (1972), p. 167) In making a thetic judgment of an indefinite subject, by contrast, one is not interested in the relation between it and the predicate, so one only presents it as an individual entity involved in the event described. Thetic judgments, in turn, fail with generic sentences because generic sentences refer to a generalized relation which holds between the subject and predicate, a relation which the subjectless thetic judgments can not describe.

The syntax of Japanese is a subject which has been much debated in past years, a debate which I can not hope to enter into. Instead, I will simply present a brief sketch of the syntax of *wa/ga* phrases in order to illustrate the patterns of acceptability mentioned above. This representation draws primarily on the syntax suggested by Kuroda (personal communication). Kuroda's basic model for Japanese grammar is

\[
\text{Max}(X) = \text{Max}(Y) \cdot X' \text{ or } \text{Max}(Y) \cdot \text{Max}(X)
\]

\[
X' = X \cdot \text{Max}(Z)
\]

so that the representation of a sentence such as 12) is as follows

\[
15) \quad \text{CP} \quad \text{C'}
\]

\[
\text{Spec(C)} \quad \text{IP} \quad \text{COMP}
\]

\[
\text{Spec(I)} \quad I'
\]

\[
\text{VP} \quad \text{INFL}
\]

\[
\text{Spec(V)} \quad V'
\]

\[
\text{NP} \quad V
\]

\[
\text{Inu ga} \quad \text{neko o oikakete iru}
\]
Kuroda (1992) proposes that the particles “ga” and “o”, which indicate subject and direct object respectively, are assigned by a non-configurational rule which assigns “ga” to the left-most unmarked NP within VP and “o” to any following NP’s within VP. This rule applies after generation at DS but before any clefting movement. He terms these particles “case-markers”, to distinguish them from “Case”, which is assigned at Spec (I). Japanese thus has two possibilities for an NP, it can either get case from this nonconfigurational rule or Case from INFL, either of which is sufficient for the verb (in other words, unlike English, an NP does not have to have Case, but can have simple case instead). In 15), then, the nouns “inu” and “neko” are generated within VP at DS, and are then assigned case-markers by Kuroda’s nonconfigurational rule. The subject NP does not move up to Spec (I) to get Case, but remains within VP at surface structure.

It is commonly agreed that the *wa* operator acts at the level of CP (Kuroda (1992), Miyagawa (1989)). Both writers provide grammatical examples for this view, such as restrictions on floating quantifiers within *wa* sentences (Miyagawa (1989)). Kuroda further notes that the particle *wa* is traditionally considered in Japanese grammar to be a member of the family of “huku-zyosi”, a class of particles which includes *mo* (“also”), *sae* (“even”), and *dake* (“only”), which are usually considered to be operators within CP. In the syntax of *wa* sentences, the particle *wa* is generated at Spec (C), then moved down to Spec (I). The subject of the sentence is generated at Spec (V), gets case assigned to it according to the non-configurational case marking system, then moves up to Spec (I) where it adjoins with the *wa*. Japanese grammar does not allow *wa* and another case marker, such as *ga* or *o* to occur at the same NP, so the case marker drops off, and the subject NP gets Case assigned to it by INFL. The representation of sentence 13), then is
where “INU” has been generated at Spec (V), given the marker ga, then moved up to Spec (I). wa has been generated at Spec (C) and moved down to Spec (I), where it joins “INU ga” to form “INU ga wa”. This construction is disallowed, so the ga drops out, leaving “INU wa” at Spec (I). Similarly, a representation of 14) is

17) CP  
Spec (C)  
Spec (I)  
Spec (V)  
NP  V  
Nekow inu ga oikakete iru  

Where a similar process has taken place on the object “neko” of the verb. As Kuroda argues, this
suggestions that the syntactic subject of a sentence need not be taken as its logical subject, because in 17) the logical subject of the categorical judgment is the syntactic object “neko”.

Kuno (1973) notes a further characteristic of *wa and *ga sentences. Whereas a stage-level predicate, such as in 10)-14) allows both a *wa and a *ga formation, an individual level predicate does not, as shown by

18) John wa gakusei desu
    student is
    “John is a student”

19) *John ga gakusei desu

An individual level predicate can be the basis of only a categorical judgment, not a thetic judgment. This interaction between the ILP/SLP distinction and the two types of judgments is justified by the syntax of the different types of predicates. So far, the examples in 15-17) have shown syntax trees of stage level predicates which directly refer to an event rather than a characteristic or definition; thus, they have all involved INFL\(_{S}\). The NP “gakusei”, by contrast, can only involve an INFL\(_{I}\), so its syntax is represented as

20)
\[
\begin{array}{c}
\text{CP} \\
\text{Spec (C)} & \text{C'} \\
\text{IP} & \text{COMP} \\
\text{Spec (I)} & \text{I'} \\
\text{VP} & \text{INFL}_{I} \\
\text{Spec (V)} & \text{V'} \\
\text{NP} & \text{V} \\
\text{John, wa} & \text{PRO}_{I} & \text{gakusei} & \text{desu}
\end{array}
\]

this representation predicts the failure of 19); because the subject “John” is generated at Spec (I) by
INFL₁, it can not get a ga marker, because it is assigned within VP, but it can get a wa marker, which is generated at Spec (C). A sentence formed with INFL₂, in contrast, will allow both wa and ga sentences. The subject in an INFL₂ sentence is generated at Spec (V), and can move up to Spec (I) to get wa marked. It is not required to move up to Spec (I), however, so it can also remain at Spec (V), where the ga particle has been attached.

The interaction between the syntax of wa and ga formation and the two types of INFL allows us to relatively easily explain the pattern of wa and ga acceptability presented earlier. Kuroda’s specific sentences are those which have the t variable from INFL₂ logically represented within VP with the existential operator, while his generic sentences include both those which have the t variable logically represented within IP with the generic operator and sentences formed with INFL₁, which describe a characteristic or definition without a t variable. In English sentences, I suggested that the t variable is generated by INFL₂ at the location of the subject NP, in that case at Spec (I). In the thetic judgment in Japanese, the subject NP never leaves the VP, so that the t variable is initially generated into VP as well, so it does not have the option of reconstructing up to IP in logical form, so it can not be generically quantified. The thetic judgment, therefore, can not be made on a generic sentence, but only on specific sentences where the t variable is existentially bound. In the categorical judgment, the subject NP moves out of VP up to Spec (I). If this NP is indefinite, it will receive generic quantification there. Since the subject NP is at Spec (I), the t variable will be generated there as well. In logical representation, since the subject is at Spec (I), the t variable has to remain there as well, because if it were to reconstruct into VP it would be quantified with narrower scope than the subject. Therefore, categorical judgments of indefinite specific sentences are prohibited as well.

Ladusaw’s Brentanian Ontology:

Ladusaw (1994), in discussing the interaction between the ILP/SLP distinction and the thetic and categorical judgments, presents a simple ontology of Brentano’s logical system, which he summarizes as
He then summarizes the distinction between judgments as

- basis for a thetic judgment: a description
- basis for a categorical judgment: an object and a property

A thetic judgment is an affirmation or denial of the description in the basis (existential commitment)
A categorical judgment is an affirmation or denial of the basis property to the object in the basis (predication)

We are now in a position to characterize this description of the Brentanian system of judgment in terms of syntactic constructions. As has been shown, in the thetic judgment, the subject remains within the scope of VP. A "description" in logical terms might then be said to be a VP which has all of its argument positions filled. The VP in 15) is a good example of this; both NP nodes are filled. The thetic judgment concerns the truth of the description portrayed in the VP. In contrast, a categorical judgment is based on an object and a property. From the example in 16), a plausible syntactic mapping of this seems to be that an object is an NP at Spec (I), a property is a VP which has either a trace or a PRO which is coindexed with that NP, and the categorical judgment concerns the truth of the predication made between the two.

At this point, an extremely pertinent question presents itself. I have just claimed that a description, which is the basis for a thetic judgment, is a VP without a trace or PRO coindexed with a NP at Spec (I). In English, there are no such VP's; the subject of all VP's moves out from Spec (V) to Spec (I) in order to get Case from INFL, leaving behind a trace. Does this mean that there are no thetic judgments in English, and that they are limited to languages like Japanese which do not require an NP to move out of VP to Spec (I)? The answer is no, and the reason concerns an important difference between the judgment types and the two types of INFL. The two types of INFL are syntactic objects, which motivate the syntax of sentences in different ways; specifically, they determine where the subject NP is generated. The two types of judgment are not syntactic devices in this fashion, but are logical forms, and do not necessarily motivate the syntax of the sentence. Rather, they define what type of judgment is made based on the syntax which is
generated. In other words, the two types of INFL determine which reconstructions of the syntax into logical form are possible, and the two types of judgment describe the truth conditions which are applicable to each reconstruction. An INFL$_5$ generates its subject at Spec (V) and, in English, it moves to Spec (I) to get Case. The subject can then be reconstructed back to Spec (V) or remaining at Spec (I). If it is reconstructed back to Spec (V), the reconstruction is a VP without a trace or PRO, and is a description in the Brentanan classification, and is the basis for a thetic judgment. If the subject NP is reconstructed at Spec (I), the NP becomes a Brentanan object, and the VP, which is reconstructed with a coindexed trace, is a property, and the reconstruction is the basis for a categorical judgment. INFL$_1$ generates the subject NP at Spec (I), so the only possible reconstruction has the NP remain at Spec (I), so it is a Brentanan object as well, and the VP with coindexed PRO is a property, so a sentence with INFL$_1$ is always the basis for a categorical judgment.

In Japanese this distinction between the syntactic nature of the INFL's and the logical nature of the judgments is obscured, because the judgments are marked with the syntactic particles *wa* and *ga* which motivate the syntax in their own ways.

With this clarification made, we can look at the logical representations of the two types of judgment as well. Kuroda (1992) proposes that the categorical judgment, which is concerned with the relation between the subject and its predicate, be represented as a two place function $S$ over an object and another function. For him, a categorical judgment on the sentence

21) John read “Syntactic Structures”

would have the logical representation

21a) $S (\text{John}, \exists, \text{read (~, Syntactic Structures) at } t )$

whereas the thetic judgment on the same sentence would be represented by

21b) $\exists, \text{read (John, Syntactic Structures) at } t )$

The meaning in 21b) says that John did in fact read “Syntactic Structures”, or that the event of John reading “Syntactic Structures” took place, while the meaning in 21a) says roughly that it is a
property of John that he read "Syntactic Structures". The logical representations of these two
types of judgments look reassuringly familiar to the syntactic constructions noted earlier: 21b)
nicely mirrors the structure of a VP without a trace or PRO, while the categorical judgment is based
on an object, which is an NP, and a predicate, which is a VP with an empty location (the trace or
PRO in syntax) into which the object is predicated.

In contrast to the stage level predicate represented in 21), the individual level predicate

22) John is a linguist

is represented by the categorical judgment

22a) S(John, linguist (→))

but crucially not by

22b) *linguist (John)

Which is the representation which could be given to 22) if it allowed a thetic as well as a categorical
reading, as the example in 21) does. Importantly, the form in 22b) is the form usually presented in
semantic representations; this analysis suggests that this is a mistaken representation. I am unable
to into all of the ramifications Kuroda’s system of logical representation, in particular how the
representation accounts for the quantification of bare plurals and of the t variable which was
observed earlier. It is introduced primarily because of the ramifications which it suggests for
individual level predicates, to which I will turn to presently.

Further Issues in Logical Form:

An interesting fact emerges when we investigate the conditions under which each type of
judgment can be judged true or false. A thetic judgment is true if the event which it describes
corresponds with an event in the real world, so that the judgment in 21b) is true if John did read

3 Kuroda acknowledges that, on the face of it, the jump into second-order logic with the proposed S predicate
is superfluous in traditional first-order semantics. He devotes a great deal of Chapter 2 to demonstrating, using
the other “huku-zyosi” mentioned earlier, mo (“also”), sae (“even”), and dake (“only”) that this move is
semantically necessary both to account for the categorical judgment and to represent the meanings of the other
huku-zyosi. This proof is also necessary to prove that the categorical judgment has semantic status at all, and is
not simply pragmatic.
“Syntactic Structures”. A categorical judgment of sentence formed with INFLs has the same truth conditions, if indirectly; the judgment in 21a) is true if John does have the property of having read “Syntactic Structures”. If this is true, then the logical form

23) \( \exists t \) \( \text{read (John, Syntactic Structures) at } t \) 

should be true, because John has the property of having read “Syntactic Structures” only if John was in a relation as described in 23). The relation in 23), however, is exactly the same form as the thetic judgment in 21b), so that the categorical judgment in 21a) is true if and only if the thetic judgment in 21b) is true. 21a) is true if 23) is an accurate representation of the relation between John and “Syntactic Structures”, and 23) in turn is true of John did in fact read “Syntactic Structures”.

When we turn to judgments of based on sentences with INFL1, in contrast, the situation becomes much murkier. The representation in 22a) is true if the relationship between John and linguist is accurately represented by 22b). 22b), however, is not a well-formed judgment, because an individual-level predicate such as “linguist” can only be a categorical, not a thetic judgment. The representation in 22a) is therefore true if the relationship represented is true, but the relationship represented is to be a judgment capable of being assigned a truth value, it itself must be categorical.

22a) \( S(\text{John, linguist}) \)

will be true if the the relation it refers to is true, but that relation is of the form

24) \( S(\text{John, linguist}) \)

as well. this leads to an infinite regress, where an individual-level predicate is only true if it already is so. One might try a different tack, and say that John is a linguist because one knows

25) John is a phonologist

is true, but that does not help either, because the truth value of 25) has the same difficulties as the truth value for 22). In a different way of putting it, one might say that 22a) is only true if someone has already said 22) and had it be true. Sentences formed with INFLs contain a reference to an event or series of events, so their truth value is determined by whether the event or series of events
they describe took place in the world. Sentences formed with INFL₁, however, seem to only refer to other sentences formed with INFL₁.

This conclusion seems completely at odds with our conception of language and wholly unacceptable. It is, in fact, not novel at all; in the 60’s W.V. Quine put forward a view of language which has remarkable similarities. In Quine (1953), he describes language as resembling a force field, whose boundary is experience. The judgments of sentences formed with INFL₅ either directly or indirectly describe events of experience, and are therefore near the border of the field. Sentences formed with INFL₁ are in the middle, an have no empirical content of their own; their truth results from their conformity with the preexisting truth relations in the system. Quine acknowledges that experiences on the border may cause readjustments of the truth values within the system. but “the total field is so underdetermined by its boundary conditions, experience, that there is much latitude of choice as to what statements to reevaluate”; experience itself can not tell you whether “John is a linguist” is true. This lack of external truth conditions persists throughout most, if not all individual level predicates: one can not imagine events in the world which would make “Mary is intelligent” or “Mary knows French” true. One can certainly imagine events which would motivate one to claim that Mary knows French, such as her nice accent or her successful translation of a story, but neither of these renders “Mary knows French” undeniably true. We have noted before that INFL₁ is used in sentences with definition-like meanings, and this is reflected in Quine’s model. The truth conditions of sentences on the inside of the field are not determined by external events, but rather by the structure of definitions and relations throughout the field. One’s claim that Mary knows French depends less on the events of her translating this story or that advertisement and more on one’s own definition of what it is to know French.

At the about the same time, J. L. Austin (1961) was investigating sentences whose truth values, like our analysis of individual-level predicates, depend wholly upon other utterances. He termed them “performative speech acts”, of which a promise is a traditional example. The truth value of “I promise to do X” depends on no reference to any other state of affairs, but is true by virtue of its being said. Once it has been said, when someone else says “Dan promised to do X”,
their statement is true as well, but not because of any conditions in the world which it refers to, but rather because it refers to my previous statement of promising. Marriage is another example of a performative speech act; the individual level predicate "bride" most certainly does not refer to any condition in the external world to assign it a truth value, rather, my statement "Mary is a bride" is true only by virtue of its reference to the previous linguistic act of the marriage ceremony. These examples seem relatively few and far between, but Austin an others have reached the conclusion that performative speech acts are fundamental to language.

The combination of Austin and Quine's models allows for an account of the seemingly paradoxical conclusion reached by the analysis of individual level predicates based on Kuroda's logical system. Statements made with $\text{INFL}_s$, which contain reference to events, are assigned truth values by their correspondence with the world, while those made with $\text{INFL}_t$ are assigned truth value by their correspondence with other statements and definitions made in the language. This allows a coherent account of the meaning of the truth conditions of 22): the definition of linguist contains a number of characteristics which linguists have, such as being interested in language, knowing something about syntax, etc. Once enough reports about particular events involving John, formed with $\text{INFL}_s$, which fill the definition are entered into the language, one may dub John a linguist, a statement which is true not by virtue of John possessing some quality of "linguist-hood" in the physical world but by virtue of its reference to the definition of linguist and its motivation by the relevant stage-level reports of his activities. The interaction between the ILP/SLP distinction and the thetic/categorical distinction examined by Ladusaw thus has important ramifications within the philosophy of language, which in turn shows an important characteristic of the ILP/SLP distinction, namely, that sentences formed with $\text{INFL}_s$ are chiefly concerned with events in the world, and are assigned a truth value based on the correspondence between the sentence and the real world, whereas sentences formed with $\text{INFL}_t$ are concerned with the relationships of definitions within language, and a sentence formed with $\text{INFL}_t$ gets its truth conditions not from its correspondence with some event in the world but from the coherency of the sentence with other sentences and definitions within the language.
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