Integrating Situation Semantics into Syntactic Analysis: A Framework for Partial World Interpretation in Linguistic Theory

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ABSTRACT

Abstract— This study explores the integration of situational contexts into syntactic analysis, with a focus on how specific situations—referred to as partial worlds—influence the truth conditions of utterances in natural language. Building on the theoretical foundations of J.L. Austin's situational theory, Barwise and Etchemendy's approach to truth conditions, and Kratzer's concept of lumps of thought, this paper examines how language encodes events and situations that are dependent on context. Using examples from Nigerian settings, such as card games in Calabar and events in Lagos, we demonstrate that the truth or falsehood of an utterance depends not only on world knowledge but also on the specific partial world it references. Additionally, the study formalizes how tense usage, direct perception reports, and situational dependencies work together to determine the interpretation of utterances within their respective contexts. This framework provides new insights into how syntactic structures and situational semantics can be aligned to account for the complexities of language and meaning, emphasizing the need to consider partial worlds in syntactic analysis for a more nuanced understanding of truth conditions in everyday discourse.

Keywords: Situation Semantics; Syntactic Analysis; Partial Worlds; Event Semantics.

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INTRODUCTION

This work introduces the integration of situation semantics into syntactic analysis, exploring how partial world interpretations provide a richer framework for evaluating linguistic expressions within specific, context-dependent scenarios. Proposed as an alternative to possible world semantics, situation semantics (as outlined by Kratzer, 2009) shifts the basis of linguistic evaluation from complete, totalizing worlds to specific situations—small, relevant fragments of reality. This nuanced approach allows for finer distinctions within syntactic analysis, especially when dealing with linguistic contexts that involve subjectivity, beliefs, counterfactuals, and hypothetical scenarios. By focusing on partial worlds, situation semantics offers a more practical model for understanding how syntactic structure interacts with semantic meaning, providing tools to handle expressions dependent on limited aspects of the speaker's or listener's perspective.

To clarify the motivations behind situation semantics, it's essential first to understand the core principles of possible world semantics, which evaluates propositions based on complete alternative realities. Each possible world represents a full, alternative version of reality, which helps model sentences whose truth values vary across different scenarios (Weisberg, 2013). For example, consider the following belief statement, which draws on possible world semantics to capture its meaning:

(1) *Ekpe believes that Ekaete is a teacher.*

In this example, the truth of the embedded clause (*Ekaete is a teacher*) is evaluated based on Ekpe's beliefs rather than the actual world. Ekpe's mental state may include a scenario in which Ekaete is considered a teacher, even if this does not align with the reality of the actual world. In possible world semantics, this belief is understood within a subset of possible worlds—those that align with Ekpe's mental state. This enables a form of intensionality, where the truth of the embedded proposition (*Ekaete is a teacher*) is assessed relative to Ekpe's belief-worlds rather than the full, actual world.
Consider also the following counterfactual statement:

(2) *If Iduak were a fish, he would swim every day in the river.*

Here, the antecedent clause (*If Iduak were a fish*) clearly contradicts actual reality, as Iduak is not a fish. In possible world semantics, this counterfactual would be evaluated within a set of worlds where Iduak is indeed a fish. Possible world semantics enables a distinction between actual and non-actual circumstances by encompassing multiple complete worlds where the antecedent holds true. Formally, propositions in this framework are mapped to sets of worlds, distinguishing between those where a proposition is true and those where it is false.

For example, given a set of possible worlds W={w1,w2,w3,w4,w5}W = \{w_1, w_2, w_3, w_4, w_5\}W={w1,w2,w3,w4,w5}, a proposition ppp may hold true in worlds w1,w2,w_1, w_2,w1,w2, and w4w_4w4, but false in w3w_3w3 and w5w_5w5. This binary classification aligns with the syntactic structure, as propositions can be analyzed according to which worlds make them true or false.

However, possible world semantics often proves too broad for nuanced syntactic analysis, especially when examining expressions that depend on limited, situation-specific contexts. Treating each world as a monolithic unit can miss essential distinctions between different parts of the same world. Situation semantics offers a solution by allowing evaluations within partial worlds or situations—smaller contexts that capture only the relevant parts of reality. This makes it possible to evaluate expressions in more limited, contextually specific scenarios without invoking an entire world. For example, instead of treating Ekpe's belief about Ekaete as true or false in all contexts, we could analyze it based solely on Ekpe's belief situation, a more focused part of reality in which Ekaete is indeed a teacher.

In situation semantics, linguistic expressions are interpreted in the context of specific situations, or parts of worlds (Kroeger, 2023). This approach offers a refined tool for syntactic analysis by enabling the assessment of linguistic meaning in context-sensitive ways. Principles such as *persistence*, *exemplification*, and *minimality* are crucial in capturing the conditions under which a situation satisfies a proposition (Cipria & Roberts, 2000). *Persistence* means that propositions true within a given situation remain true within any larger, encompassing situation. *Exemplification* draws a parallel between situations and Davidsonian events; situations that exemplify propositions can be treated similarly to events with specific properties (Douglas, 2001). For syntactic analysis, this model allows us to evaluate event predications more accurately, focusing on the limited conditions that define an event without requiring an entire world context.

To illustrate further, consider the sentence:

(3) *Anie believes that Etim is an honest person.*

Here, situation semantics allows us to evaluate the embedded clause within a specific situation reflective of Anie's beliefs about Etim, without needing to claim that Etim's honesty extends universally. This finer-grained approach aligns with the partial nature of syntax-semantics interactions, where context-dependent meaning often hinges on specific aspects of a speaker's viewpoint rather than an overarching world state.

In conclusion, situation semantics offers a framework better suited to syntactic analysis, particularly in cases involving beliefs, counterfactuals, and hypothetical statements. By allowing partial worlds or situations to determine meaning, it provides a model aligned with the nuanced, context-dependent nature of syntax. This shift enables a deeper understanding of how syntactic structure shapes—and is shaped by—interpretive subtleties in meaning across various linguistic and intensional contexts.

MOTIVATIONS FOR CONSIDERING SITUATIONS IN SYNTACTIC ANALYSIS

a) Austinian Topic Situations

b) The notion that utterances are specific to certain situations has roots in the work of Austin (1950). Following Barwise and Etchemendy (1987), we see that the truth or falsehood of an utterance depends significantly on the particular situation being referenced. Consider this adapted example:

c)

d) ***Example 1:***

In two neighborhoods of Calabar, two card games are taking place: Edet is playing with Bassey and Eka, while Aniekan is playing cards with Ini. Imagine someone observing the first game mistakenly thinks Bassey is Aniekan and says, "Aniekan has the queen of hearts." However, the statement is inaccurate in the Austinian sense even if Aniekan does possess the queen of hearts at the other game.

This illustrates the principle of **situation dependency**: an utterance must align with the particular situation it refers to in order to be true. Thus, reports on a person's beliefs or knowledge must consider the relevant context of the utterance.

Example 2:

Before leaving Lagos, Ifiok knew that Dr. Obi saved David's life when he was seriously ill. While Ifiok was out of town, a fire broke out at David's house, and Dr. Obi saved him again. Upon returning, Ifiok hears people discussing "Dr. Obi saved David," assuming they refer to the illness incident, but they actually refer to the fire rescue.

If someone were to say, "Ifiok knows that Dr. Obi saved David," they would misinterpret the context and produce an infelicitous report. This example underscores that world-based information alone may not suffice for accurately evaluating belief and knowledge reports.

e)

f) Tense and Situational Relevance

Austinian topic situations may differ from the situation described by a sentence's main predicate. This distinction often becomes clear in tense usage, as illustrated by Klein & Sag (1985):

Example 3:

In a courtroom in Calabar, a witness is asked what she saw when she entered the room. She says, "There was a document on the table. It was in Efik."

Although the document remains in Efik, the witness refers to the past, anchoring both statements to the past tense, despite the document's language status persisting in the present. This example shows that tense can signal the temporal relevance of a topic

situation, suggesting that more than just world information is necessary to capture situational nuances.

g)

h) Direct Perception Reports

Barwise (1981) and Barwise & Perry (1983) illustrate the role of situations in **direct perception reports**. Direct reports are epistemically neutral, while indirect reports imply a belief. Consider the following contrast:

Example 4:

Udeme saw Bassey hand food to the children.
Udeme saw that Bassey fed the children.

In the first sentence, Udeme's perception is straightforward without any additional beliefs about Bassey's actions, whereas the second implies Udeme has a belief about Bassey's action. The transparency of perception in direct reports, such as the first, allows for the inference that Udeme sees exactly what happens, regardless of what she believes.

i)

j) Lumps of Thought

Kratzer's (1989) concept of **lumps of thought** helps us understand how world structure is often too generalized for situational distinctions. Kratzer suggests that different elements of an activity can be considered separate but related situations.

Example 5:

Amara spends an evening creating art with items like yams and cocoyams. During the session, she pauses to make tea, discard a yam, and examine the cocoyam for a specific shade of color. In this world, the following propositions hold:

1. Amara created a still life.
2. Amara used yams.
3. Amara examined the cocoyam.

According to Kratzer, each of these actions is part of the larger activity of creating the still life, even if specific actions, like tea-making, are independent situations. The **lumping relationship** between propositions suggests that these events share a situation that verifies them collectively, while unrelated actions remain distinct.

Formalizing the Framework for Partial World Interpretation

In this section, we aim to formalize the integration of **situations** into **syntactic analysis** by elaborating on how situations, as discussed through Austinian topic situations, tense usage, direct perception reports, and Kratzer's lumps of thought, contribute to our understanding of partial world interpretation in linguistics. We will detail how these concepts can be mapped into a formal model that accommodates the nuances of partial worlds in linguistic theory, specifically in Nigerian contexts.

k) 1. **Situational Dependency and Partial Worlds**

The notion of **situational dependency** is fundamental to our analysis. As demonstrated through Austinian examples, the truth or falsehood of an utterance hinges on the situation it references. A situation is a context-specific entity, representing not just a state of affairs, but a **partial world** within which the truth of a proposition is evaluated. These partial worlds are grounded in linguistic structures that encode specific details about time, space, and participants in an event.

In the Nigerian context, such partial worlds can be illustrated with local examples, like those from **Calabar** or **Lagos**. Consider the following example:

Example 1 (Revised): In **Calabar**, two card games are happening: one between **Edet** and **Bassey**, and the other between **Aniekan** and **Ini**. A third observer mistakenly says, **"Aniekan has the queen of hearts"**, though **Aniekan** has the queen in the second game, not the first. This misinterpretation occurs because the **situation** under consideration is not specified. If the speaker was not clear about which game was being referred to, the sentence would be judged **false** in the Austinian sense, highlighting how critical it is to reference the correct **partial world** for accurate interpretation.

To formalize this, we can represent situations using a structure where each **situation s** is part of a larger **partial world w**. The utterance must align with a specific sub-world within **w**:

- **(26)** Situation(s) ⊆ Partial World(w) ⇔ the utterance refers to the context encapsulated by **s**.

Thus, truth conditions are evaluated within the context of these partial worlds.

l) 2. **Tense and Situational Relevance**

As we saw in Klein (1994), tense plays a crucial role in anchoring the temporal relevance of a situation. In our formal framework, tense helps establish the **temporal boundaries** of a situation within the larger structure of partial worlds. We can use the notion of **temporal situation anchoring** to map situations to specific points in time within partial worlds.

Example 2 (Revised): In a **courtroom in Calabar**, a witness might say, **"There was a document on the table. It was in Efik."** Despite the document's current status, the witness anchors both statements to the past tense. Here, the statement introduces a **past situation** that is relevant to the utterance's truth value, and this past situation is encapsulated within a **partial world** corresponding to the witness's temporal perspective. This can be formalized as:

- **(27)** Tense(s) ⊆ Temporal Domain(w) ⇔ the situation **s** is relevant to the truth conditions at the specific time-frame of **w**.

By integrating **tense** into the situation model, we can account for the **temporal aspect** of situations and their relation to larger partial worlds, ensuring that interpretations are aligned with the time of utterance.

m) 3. **Direct Perception Reports and Partial Worlds**

Direct perception reports are another key aspect where situation semantics can shed light on the relation between linguistic forms and **world-based knowledge**. In these reports, a speaker conveys their direct experience without additional inferences or beliefs. This epistemic neutrality allows us to focus on the **specific situation** perceived, without introducing external beliefs about the event.

Example 3 (Revised): Consider the sentence, **"Udeme saw Bassey hand food to the children."** This report reflects Udeme's **direct perception** of a situation, encoded within a **partial world** where the action of handing food takes place. This contrasts with indirect perception reports, which involve an inferred belief about a past event, as in **"Udeme saw that Bassey fed the children."**

In formal terms:

- **(28)** Direct Perception Report: λe. **see(Udeme)(e) ∧ hand(Bassey)(food)(children)** ⟺ the situation **e** is directly perceived by Udeme without involving additional beliefs or layers of inference.

This formalization reflects that **direct perception** reports correspond to **specific situations** in the partial world that the perceiver directly engages with, providing an epistemically neutral account of the event.

n) 4. **Lumps of Thought and Partial Worlds**

Kratzer's (1989) concept of **lumps of thought** provides a method to relate distinct but connected events within a larger **partial world**. Each element or action within a larger activity is seen as a **distinct situation** that contributes to the larger whole. This allows for an interpretation of **complex events** as **sets of smaller situations** that are related to each other.

Example 4 (Revised): In **Calabar**, **Amara** spends the evening creating art with yams and cocoyams. During this activity, she pauses to make tea, discards a yam, and inspects a cocoyam. These actions, although distinct, are related to the broader event of creating a still life. We can formalize this as:

- **(29)** Lumped Activity: λe. **create_art(Amara)(yams)(cocoyams) ∧ make_tea(Amara) ∧ examine(cocoyam)(Amara)** ⟺ the distinct actions (making tea, discarding yam) are part of a larger set of situations that together form a coherent **partial world** representing the still life creation.

This formalization captures how distinct actions contribute to the larger world of **Amara's artistic activity**, illustrating the relationship between **small situations** and a larger, cohesive activity within a **partial world**.

In this section, we have explored how situations can be integrated into syntactic analysis by formalizing their role in partial world interpretation. Drawing on the works of Austin, Barwise, Kratzer, and others, we have illustrated how situational dependencies, tense relevance, direct perception reports, and lumps of thought all

contribute to the interpretation of linguistic forms within their respective contexts. By formalizing these elements within the framework of partial worlds, we have shown how situations can be treated as minimal contexts that help determine the truth value of an utterance.

SITUATION SEMANTIC MODEL FOR PARTIAL WORLD INTERPRETATION IN LINGUISTIC THEORY

In our framework, we treat situations as distinct, structured parts of possible worlds, rather than addressing the world as a singular, undifferentiated whole. This approach allows for a fine-grained analysis that captures the context-dependent nature of language interpretation. Here, we model a world within a lattice-theoretic structure, represented as a join semi-lattice. This means that for every pair of elements (x and y), there exists a join element (the least upper bound of x and y) but not necessarily a meet (the greatest lower bound). Thus, the structure has a 'top' element but lacks a 'bottom' element, accommodating the diversity of situations without presuming an absolute lower bound (cf. Figure 2.1).

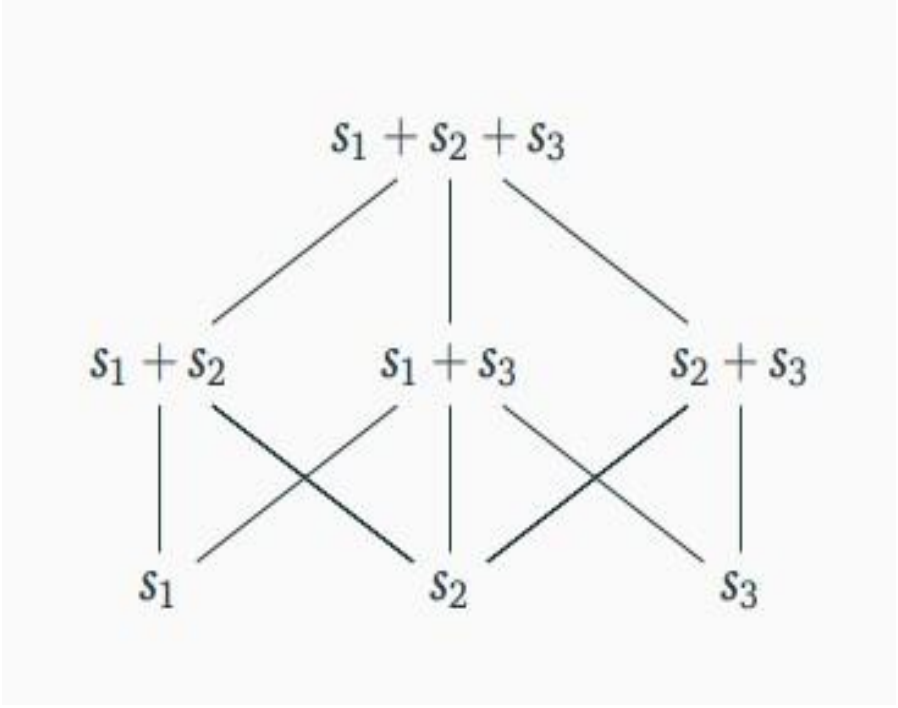

Figure 2.1: Coarse-grained structure of a world

Our situation-based model, then, is constructed as a tuple M=⟨S,D,W,≤,J·K⟩M = \langle S, D, W, \leq, J \cdot K \rangleM=⟨S,D,W,≤,J·K⟩, where:

1. **S** represents the set of all possible situations.
2. **D** is the set of possible individuals.

3. **W** is a set of possible worlds, specifically the set of maximal elements in S with respect to the partial order ≤\leq≤.
4. **≤\leq≤** is the partial ordering over S∪DS \cup DS∪D, which structures situations and individuals in a way that reflects their relational hierarchy.
5. **J \cdot K** is the interpretation function, mapping linguistic expressions to entities in the model.

Explanation of the Ordering Relation

The partial order ≤\leq≤ represents a mereological (part-whole) relationship over S∪DS \cup DS∪D, satisfying reflexivity, anti-symmetry, and transitivity. It is defined to meet two essential conditions:

1. For every situation s∈Ss \in Ss∈S, there exists no individual d∈Dd \in Dd∈D such that s≤ds \leq ds≤d.
2. For every situation s∈Ss \in Ss∈S, there exists a unique maximal situation s′∈Ss' \in Ss′∈S such that s≤s′s \leq s'ss≤s′ and for any other s″∈Ss'' \in Ss″∈S, if s′≤s″s' \leq s''s′≤s″, then s″=s′s'' = s's″=s′.

These conditions establish that no situation can be part of any individual and that each situation belongs to one maximal situation, reinforcing the idea of worlds as maximal entities composed of smaller, contained situations. Consequently, each individual belongs to a single possible world, echoing Lewis's (1968, 1986) counterpart theory.

In this model, individuals are entities within the domain **D** and correspond to expressions of type **e** in linguistic terms. Propositions, or expressions of type **t**, belong to **℘(S)**, the power set of possible situations, meaning they denote sets of situations in which they hold true.

Persistence in Situations

A proposition p∈℘(S)p \in \text{℘(S)}p∈℘(S) is considered persistent if, for any sss and s′s's′ in SSS, where s≤s′s \leq s'ss≤s′, s∈ps \in ps∈p implies s′∈ps' \in ps′∈p. In simpler terms, if a proposition holds in a situation, it will also hold in any broader situation that contains it.

For example, let's consider a Cross River name:

Example: Suppose a proposition ppp states that *Ita completed the fishing trip*. If this proposition is true in a smaller situation sss—say, at the local riverbank—it will also be true in any larger situation s′s's′ that includes the riverbank scene and potentially more, such as the nearby village community witnessing Ita's arrival. This persistence ensures consistency in interpreting events across varying scopes of situations.

Modeling Situation Semantics in Syntactic Analysis

The formalized model outlined here provides a robust foundation for integrating situation semantics into syntactic analysis. By focusing on parts of worlds, or situations, we can better capture the context-sensitive meaning of utterances in natural language.

This framework enables nuanced interpretations in syntax, where expressions can be evaluated not only against an entire world but also against specific situations, improving our understanding of how meaning shifts across contexts.

I have introduced a situation-based model that treats situations as essential units within possible worlds, organized through a partial ordering relation. This model serves as a foundation for syntactic analysis, allowing us to explore the linguistic implications of partial world interpretation and better understand the interaction between language and context. To apply this formal model to syntactic phenomena and interpretations within Nigerian contexts, we can explore how situation semantics aids in the interpretation of language structures and meanings that are heavily context-dependent. Nigerian languages, including dialects spoken in Cross River State like Efik and Ibibio, often rely on contextual cues to convey meaning, making situation semantics an effective framework to analyze language use, idiomatic expressions, and sentence structure. Here, we examine some syntactic and interpretive phenomena, such as pronoun reference, tense interpretation, focus markers, and culturally specific idiomatic expressions, using situation semantics.

Pronoun Reference and Contextual Meaning

In Nigerian languages, pronouns are often interpreted based on situational cues, as specific references may shift depending on context. For example, if we consider the Efik pronoun "emem" (meaning "he/she/they" in English), its meaning is determined by the particular situation in which it is used.

Example:

- Suppose *Emem is going to the river* is a statement made in a context (situation sss) where multiple people are nearby, and Emem is a common name. Here, the context (who is near the river, what roles people have, etc.) helps determine which "Emem" is referred to. The situation model's partial ordering lets us specify this context to limit or broaden the reference of "Emem" based on relevant details (like the specific task or location).

By structuring linguistic meaning within distinct situations, we can ensure that the interpretation function J·KJ \cdot KJ·K assigns the correct referent to pronouns based on situational boundaries, which avoids ambiguity in multi-person or complex contexts common in Nigerian communities.

Tense Interpretation and Contextual Time

Many Nigerian languages use relative, rather than absolute, tense markers. This means that an event's temporal interpretation depends on the specific time or situation context in which the statement is made. For instance, in Ibibio, a phrase like *Ita ini émá* (meaning "Ita will come later") uses context to determine the exact time of Ita's arrival.

Example:

- In situation sss, Ita might be expected to arrive "tomorrow," but in a different situation s′s′s′, the same phrase could imply a week from now. Here, the ordering

relation ≤\leq≤ allows us to structure situations hierarchically, with temporal frames nested within broader or more immediate contexts. Thus, this model enables us to capture the way tense varies in interpretation based on the relational context.

By leveraging situations to represent temporal relations, we can formalize how Nigerian languages flexibly interpret tense depending on immediate or extended contexts, preserving meaning while allowing for situational variance.

Focus Markers and Emphasis in Syntax

Focus markers, prevalent in Nigerian languages, emphasize specific parts of a sentence, altering meaning based on what is foregrounded in the situation. For instance, the use of "yá" in Yoruba and its equivalents in Efik and Ibibio functions to stress a subject or object, thus making it contextually relevant within a particular situation.

Example:

- The phrase *Okon yá is cooking* places emphasis on Okon, implying in a particular situation sss that Okon, rather than others, is the one cooking. If there are multiple individuals potentially cooking, the model interprets "Okon yá" as true only within situations where Okon is indeed the primary actor.

In situation semantics, the partial ordering ≤\leq≤ allows us to capture this focused meaning by specifying that Okon's action holds in only some situations but not all. This enables syntactic analysis that accounts for emphasis, which is integral to understanding the nuanced roles of individuals in sentences.

Culturally Specific Idiomatic Expressions

Many Nigerian languages use idiomatic expressions that hold particular meanings within social or cultural contexts. These expressions are deeply embedded in specific situations and may shift in meaning depending on cultural settings or social relationships. For example, the Efik phrase "*Eyen Eka ke òyom*" (literally, "Mother's child in wealth") implies a successful or prosperous person, often in a proud or admiring tone, based on the social situation of affluence.

Example:

- In a situation sss where Okon is being celebrated for recent achievements, this phrase carries connotations of pride and recognition, whereas in a different context s′s′s′ (e.g., one involving modest settings), the phrase might imply exaggerated praise or irony.

The situation semantics model allows us to analyze these idioms by defining situations that encapsulate specific social or cultural knowledge, helping us capture the intended meaning based on the situational context in which the expression is used.

Politeness and Register Variation Based on Situation

In Nigerian cultures, the use of language often varies with respect to social hierarchy and politeness. Language registers may shift when speaking to elders, community

leaders, or in formal versus informal contexts. For instance, in the Ibibio culture, honorifics or respectful titles might be used in the presence of elders, altering both the syntactic structure and interpretation of sentences.

Example:

- The sentence *Mfon, please greet your father* in a situation with a family setting (situation sss) may use honorific forms or even alter verb forms to reflect respect. In another situation s′s′s′ with peers, this would be less formal.

The interpretation function J·KJ \cdot KJ·K in the model can assign different forms or meanings to these sentences based on social situations, preserving politeness or register and reflecting hierarchical relationships relevant to Nigerian cultures.

By applying situation semantics to syntactic analysis within Nigerian contexts, we gain a framework that is highly adaptable to the nuances of meaning shaped by cultural, social, and temporal contexts. The partial ordering in our model allows us to flexibly structure relationships across situations, helping capture how context-dependent interpretations reflect authentic linguistic usage in Nigerian languages. This approach not only facilitates a more accurate syntactic representation but also allows us to understand how context, emphasis, and cultural specificity play roles in the interpretation of language in Nigeria.

MINIMALITY AND EXEMPLIFICATION

The concepts of minimality and exemplification are foundational in Kratzer's framework and serve as essential tools for situation semantics. In this approach, a situation is considered *minimal* in relation to a specific predicate or proposition if it contains only those elements necessary to make that proposition true, and nothing extraneous. Let us delve deeper into this with an example that includes culturally relevant names from Cross River State.

Suppose we have a situation sss that includes *Udo*, *Itoro*, and their actions of greeting each other. Here, sss is minimal with respect to the proposition that *Udo* and *Itoro* greeted each other, as it contains only these individuals and their mutual greeting, with no other actions or elements.

Now, imagine a related but smaller situation s′s′s′, which is part of sss and contains only *Itoro* and *Itoro's* greeting action. In this scenario, we cannot say that sss is minimal with respect to *Itoro* greeted someone, because within sss, *Udo* and his greeting are also present. Therefore, *Udo*'s presence and greeting prevent sss from being minimal with respect to just *Itoro's* greeting. In contrast, a situation is considered *maximal* if it meets the condition in (19): it has no larger situation within which it is a proper part. In situation semantics, maximal situations are akin to possible worlds, representing the largest coherent contexts without being subsets of any larger situation.

(19) ∀s′∈S[s≤s′→s′=s]\forall s' \in S[s \leq s' \rightarrow s' = s]∀s′∈S[s≤s′→s′=s]

This maximality condition signifies that situations labeled as possible worlds are those with no supersets; they are the most inclusive entities within the system.

Exemplification of Propositions

An eventuality that *exemplifies* a proposition is a situation that is sufficient to make that proposition true without containing irrelevant elements. This minimality ensures that the situation is small enough to solely support the proposition in question. Formally, an eventuality s∈ps \in ps∈p exemplifies or supports ppp if:

1. **All proper parts of it satisfy ppp**: If a smaller situation s′s's′ within sss satisfies the proposition ppp, then sss exemplifies ppp.
2. **Minimality Condition**: There is no part of sss that satisfies ppp on its own without being a part of the broader situation.

Consider a traditional scenario involving the proposition *Ini's yam farm has yams*, which we can call ppp. We have two situations: one where *Ini's yam farm* is depicted with just yams (minimal situation) and another where it includes yams along with cassava (non-minimal situation). In the minimal situation containing only yams, the proposition ppp is true as it supports the statement about yams. However, in the larger situation containing both yams and cassava, minimality is lost since the presence of cassava is irrelevant to the truth of ppp.

This distinction allows us to separate essential elements from extraneous ones, making the model effective for syntactic analysis within languages that often rely on context to determine relevance and completeness.

To formalize, we use ex\text{ex}ex to signify the exemplification relation, where:

(20) ex(s,p)\text{ex}(s, p)ex(s,p) = sss exemplifies ppp

Illustrative Example: Exemplification in Cross River Cultural Context

Consider a scenario involving *Okon*, a fisherman, where the proposition is *Okon caught fish*. We'll use two situations:

- Situation *A*: Includes *Okon* and only fish that he caught.
- Situation *B*: Includes *Okon*, his fish, and other unrelated elements like a visitor *Aniekan* and some vegetables.

In situation *A*, *Okon caught fish* is exemplified because it contains only the elements necessary to satisfy the proposition—Okon and his fish. Situation *B*, however, does not exemplify the proposition because of the presence of additional elements, such as *Aniekan* and vegetables, which are not relevant to the truth of *Okon caught fish*. Therefore, situation *A* meets the conditions of minimality required for exemplification, while situation *B* does not.

In this section, I examined the Kratzerian model of situation semantics by exploring minimality and exemplification within Nigerian contexts, specifically using culturally relevant names and scenarios. These formal concepts provide a basis for analyzing how situations support propositions, allowing us to distinguish essential parts of events from irrelevant details in interpretation. Moving forward, we will explore how events themselves can be represented and understood within this situation-based framework,

further integrating semantics into syntactic analysis. In the context of integrating situation semantics into syntactic analysis, understanding events within a situation-based framework involves viewing events as situations that are represented by specific contexts or scenarios in which actions or states occur. By using Kratzer's situation semantics model, events are not just abstract, temporal entities, but are seen as concrete situations that instantiate specific propositions. This shift allows a richer, context-dependent interpretation of events, moving away from simple event descriptions to complex situational representations that are sensitive to their syntactic and semantic contexts.

Events in a Situation-Based Framework

In situation semantics, events are understood as **situations** that satisfy certain conditions relevant to the propositions or predicates they instantiate. A situation is minimal if it contains no irrelevant information for a particular predicate, and maximal if it cannot be part of any larger situation. This distinction between minimality and maximality plays a critical role in how events are represented and interpreted.
For example, in a Nigerian context, let's take the sentence:

"Nkoyo danced in the village."

Here, the event of dancing in the village is not just an abstract event; it is a situation in which specific participants (Nkoyo and the village) and a specific activity (dancing) take place. The situation semantics framework helps define this event through the interaction of the components of the situation: Nkoyo, the action (dancing), and the location (the village).

o)

p) 1. **Event and Situation as Part of Possible Worlds**

In this situation-based framework, we can model events as a specific type of situation that occurs in a possible world. The situation in which Nkoyo dances is part of a larger world, but the world is structured in such a way that it contains smaller situations (or events) that are parts of larger ones.

- **Example:** Suppose that Nkoyo's dance in the village is a part of a larger situation in which multiple activities are happening during a festival. The specific event of dancing could be represented as a smaller situation within this broader context.

q) 2. **Maximal and Minimal Situations in Events**

An event is a situation that exemplifies a certain proposition. To understand how events are represented within this framework, we apply the notion of **minimality** and **maximality**:

- **Minimal Situation:** An event is minimal with respect to a predicate if it contains only what is necessary for the truth of the proposition. For example, if the proposition is "Nkoyo danced," a minimal situation for this proposition would be one where Nkoyo is dancing and there are no extraneous details.

  - **Example:** If Nkoyo dances, but someone else (say, Efiong) is also dancing nearby, the situation where Nkoyo dances alone might be considered a minimal situation for the predicate "Nkoyo danced."
- **Maximal Situation:** An event is maximal if it cannot be part of a larger situation. In other words, no other situation can contain the event as a proper part. If Nkoyo's dancing is a part of a broader festival event, then the specific event of Nkoyo dancing might be maximal if there are no smaller situations that could better define the event.

r) 3. **Exemplification of Events**

Exemplification refers to the idea that a situation or event exemplifies or supports a proposition if it satisfies the conditions of that proposition. This notion is central to understanding how events fit within the broader framework of possible worlds and situations. For instance, suppose we want to capture the proposition:

- **"Nkoyo danced the Ekpe dance."**

In a situation-based model, **Nkoyo dancing the Ekpe dance** is an event that supports the proposition if all of the smaller parts (or sub-situations) of the larger situation also support the proposition. The minimality condition ensures that no irrelevant details (e.g., a passing car or a barking dog) are part of the situation that exemplifies the proposition. The situation where Nkoyo is performing the Ekpe dance would satisfy the proposition because it is "small enough" to be relevant, focusing only on Nkoyo and the dance itself.

s) 4. **Event Composition and the Role of Syntax**

In a syntactic analysis, events can be structured through the composition of predicates and arguments, where the syntactic structure determines how different situations (or parts of events) are combined to form a larger event. For instance, syntactic structures can tell us how actions (verbs) interact with participants (subjects, objects) and how these actions take place in particular locations (prepositions or locatives). This interaction between syntax and situation semantics allows for a more nuanced understanding of event structure.

- **Example:** Consider the sentence: **"Efiong cooked the soup in the kitchen."**

In a syntactic-semantic framework, we analyze the verb "cooked" as an event that involves Efiong (the subject), the soup (the object), and the kitchen (the location). The situation-based framework allows us to interpret this as a situation in which Efiong's action of cooking the soup is situated in the kitchen, and the kitchen is a relevant part of the situation. This event (cooking) is minimal with respect to the proposition "Efiong cooked the soup" because it contains only the necessary elements for the truth of the proposition.

t) 5. **Partial World Interpretation and Event Representation**

In a situation-based approach to partial world interpretation, events are not fully determined until the situation in which they occur is specified. Since different situations can instantiate the same event, partial worlds offer flexibility in interpreting events across different contexts. This is particularly useful in Nigerian contexts, where social, cultural, and locational factors can significantly shape how an event is understood.

- **Example:** The event of **"Nkoyo attending the Calabar Carnival"** can be interpreted differently based on the partial world in which it is located. In one context, the focus might be on the visual spectacle of the carnival, while in another, it might be on the social or political importance of the event. Both interpretations are valid, depending on the specific situation in which the event is being considered.

By integrating situation semantics into the syntactic analysis of events, we achieve a more dynamic and context-sensitive understanding of how events are represented and interpreted. Events are no longer just abstract occurrences, but are embedded in specific situations that are modeled as parts of possible worlds. This approach provides a robust framework for capturing the complexities of linguistic events in Nigerian contexts, where cultural, social, and locational factors heavily influence meaning. Furthermore, it underscores the importance of syntax in determining how events are composed and interpreted within the broader structure of meaning.

BRIDGING SITUATION SEMANTICS WITH EVENT SEMANTICS

Situation semantics offers a powerful lens through which we can interpret events as specific situations, helping us clarify how actions and eventualities are structured within linguistic meaning. To illustrate how situation semantics bridges with event semantics, let's consider a sentence within the Nigerian context and analyze how events are represented in terms of situations. Consider the following example:

"Nkoyo won the village dance competition."

This sentence holds true if there exists an event of winning, whose **Agent** is Nkoyo, and whose **Theme** is the village dance competition. But what exactly constitutes an event in this context? In a situation semantics framework, an **event** can be understood as a **situation** in which certain conditions hold, and this situation is minimal in a way that it excludes irrelevant actions or elements. For instance, the event of winning the competition by Nkoyo refers to a situation in which Nkoyo is specifically winning the competition, and it does not include unrelated activities like singing, eating, or chatting, even though those could be happening in the same broader context.

Event as a Minimal Situation

In this case, the situation in which Nkoyo wins the competition exemplifies the proposition that **Nkoyo wins the village dance competition**, while excluding anything

irrelevant to that action. This minimality condition is central to **Davidsonian predication** in event semantics. According to Davidson's theory, events are predicated of participants, and these events must be minimal to satisfy the truth conditions of the sentence. For instance, **Nkoyo's win** in the competition is not just any broader situation where she happens to be, but a very specific situation where she is winning, excluding all other activities not pertinent to winning.

Let's represent this through formal notation. For the sentence "Nkoyo won the village dance competition," we can say:

- **(24)** λe. **P(a)(e)** abbreviates **λs.(P(a)(s) ∧ ex(s,P(a)))**, where **ex(s,p) = 1 iff s exemplifies p** (adapted from Potts 2013).

In this formula, **P** represents a unary predicate (such as "winning"), **a** is the agent (Nkoyo), and **e** is the event argument. The notation illustrates that a set of eventualities (or events) can be thought of as a set of situations that exemplify a propositional entity. These situations are minimal in that they contain no extraneous elements, focusing solely on what is necessary to support the truth of the proposition.

Example of Event Representation

To further explore this, let's adapt the situation-based framework to the sentence in the Nigerian context:

"Nkoyo won the village dance competition."

In a situation-based framework, we would interpret the proposition as follows:

- **(25)** λs. [past(s) ∧ ∃e[e ⩽ s ∧ wins(e) ∧ agents(e) = Nkoyo ∧ themes(e) = the village dance competition]].

In this representation, **s** represents the situation under consideration, and the event **e** is contained within the situation **s**. The event of **Nkoyo winning** the competition is represented as a specific eventuality within the situation, where the agent is Nkoyo and the theme is the competition. This interpretation focuses on the specific situation that exemplifies the proposition that **Nkoyo wins the competition**, rather than the broader situation in which she may be involved in other activities unrelated to the winning event. Thus, while the sentence describes the event of Nkoyo winning, what we are really discussing are the situations that exemplify the proposition of **Nkoyo winning** the competition. This is where the connection between situation semantics and event semantics becomes clear. Rather than viewing events as standalone abstract entities, we view them as particular situations that instantiate the predicates assigned to them.

Through the integration of situation semantics into event semantics, we achieve a nuanced understanding of how events can be represented as minimal situations within a given context. The formalization of eventualities in this framework reveals that events are not merely abstract occurrences but are bound to specific situations that exemplify the propositions we want to describe. This framework, when applied to Nigerian contexts such as Nkoyo's victory in a dance competition, allows us to articulate how events are instantiated in specific, minimal situations, and how they relate to broader contexts. By applying this situation-based model, we can move beyond abstract event descriptions

and explore how events are embedded within particular contexts, both syntactically and semantically.

CONCLUSION

This paper has presented a framework for integrating situation semantics into syntactic analysis, emphasizing the role of partial worlds in interpreting utterances. By exploring concepts such as Austin's situational theory, tense usage, and direct perception reports, we have shown how context-sensitive elements of language, including events and situations, contribute to the truth conditions of statements. Using examples rooted in Nigerian contexts, we have highlighted the ways in which world knowledge and contextual references shape meaning in discourse. The study underscores the importance of treating situations as dynamic entities that influence syntactic structure and interpretation, rather than static constructs limited to a single world perspective. Future research could build on this framework by exploring the application of partial world interpretation in various linguistic and cultural contexts, offering further insights into the interplay between syntax and semantics in natural language. Ultimately, the integration of situational contexts into syntactic analysis provides a more nuanced and accurate understanding of meaning in language, fostering richer insights into the complexities of human communication.

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