The Imperfective Puzzle in Korean*

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Much attention in recent Korean linguistics literature has been paid to the imperfective puzzle surrounding the periphrastic marker *-ko iss-*. This marker corresponds to English BE + *-ing* in a way but, unlike its English counterpart, *-ko* (KO) is a connective meaning 'and', and *iss-* (ISS) literally means 'exist', though it is often glossed as BE or Copular in the literature.

The imperfective puzzle usually refers to the phenomenon in which sentences containing KO ISS sentences are two-ways ambiguous when occurring with so-called 'put on' type verbs (e.g., Kim 1986, Kim 1990, Lee 1991, Kim 1993, Ahn 1995, Son 2004, Lee 2008). For instance, (1) can be interpreted as describing the action of Yoona putting clothes on herself or the state of the clothes being on her. (Here and throughout, the action reading will be labeled a 'progressive (P) state' reading and the state reading a 'result (R) state' reading. Also, to stay neutral in citing examples from the existing literature, the morphemes participating in the formation of a periphrastic imperfective marker will not be glossed.)

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(1) Yoona-nun **os-ul** **ip**-ko iss-∅-ta.
    Y.-Top **clothes-Acc** **wear**-KO ISS-N.Pst-Decl
    'Yoona is <u>putting on clothes</u>' (P-state)
    or 'Yoona is <u>wearing clothes</u>.' (R-state)

The ambiguity of KO ISS illustrated by (1) is intriguing in and of it-self. There is yet another puzzle that merits attention, however: Korean has another imperfective marker *-e iss-* (E ISS) and it also produces an R-state reading, as exemplified in (2) (see, among others, Lee 1991, Ahn 1995, Lee 2008, K. Kim to appear).

(2) Yenghuy-nun byengtul-**e** **iss**-∅-ta.
    Y.-Top get.sick-**E** **ISS**-N.Pst-Decl
    Not: 'Yenghuy <u>is getting sick</u>.'(P-state)
    'Yenghuy is <u>in the state of being sick.</u>' (R-state)

The fact that R-state readings can be produced not just by KO ISS but also by E ISS suggests that an adequate analysis of one imperfective should cap-ture the behavior of the other as well. But such an analysis is yet to be pro-posed in the literature.

The present paper is an attempt to fill this lacuna. More specifically, it aims to examine the R-state readings produced by KO ISS and E ISS and propose a formal semantic analysis for them. The upshot of the proposal will be that the R-state reading produced by KO ISS and the one produced by E ISS are of a different nature. The former is concerned with the subject's existential circumstance wherein the object's temporary state is maintained. The latter is concerned with the subject's existential circumstance in which its state simply holds, without any maintenance, for some duration of time. Another important claim will be that KO, E, and ISS each make significant contributions to the semantics, contra the existing analyses, in particular Son (2004) and Lee (2008).

The outline of this paper is as follows: Section 1 goes over a representa-tive analysis of KO ISS and carves out more specific questions to be ad-dressed in subsequent sections. This will amount to identifying the desidera-ta for a proper analysis of KO ISS. Section 2 clarifies what an R-state read-ing really means. Section 3 presents the formal semantics of KO ISS and E ISS imperfectives. Section 4 summarizes and concludes the paper.

1. Problems Surrounding the Ambiguity Puzzle

Although there is a wealth of literature on the ambiguity of KO ISS, to my knowledge, there is only one formal analysis, namely, Son (2004). Thus, in

this section, I briefly review her analysis and thereby identify outstanding problems.

According to Son (2004), the ambiguity stems from two sources: (i) the selectional versatility of KO and (ii) the lexical ambiguity of 'put on' type verbs. In a nutshell, KO can select for various types of verbal categories such as Voice Phrase or Applicative Phrase, and 'put on' type verbs can assign either Agentive-Locative role or plain Locative role to the surface subject. When the subject of a 'put on' type verb bears Agentive as well as Locative role, the sentence receives a P-state reading; when the subject bears just Locative role, an R-state reading comes about.

Son's analysis can readily explain the ambiguity of sentences like (1). It can also account for why sentences like (3) are not ambiguous even when they contain 'put on' type verbs; in (3), being an inanimate entity, the subject cannot bear Agentive-Locative role, so P-state reading does not arise.

(3) **Nwunsalam**-i   os-ul   ip-ko   iss-∅-ta.
     snowman-Nom   clothes-Acc   wear-KO   ISS-N.Pst-Decl
     #'<u>A/the snowman</u> is putting on clothes. (P-state)
     √'<u>A/the snowman</u> is wearing clothes.' (R-state)

Despite its merits, however, Son's analysis cannot capture the full spectrum of facts. First, it fails to explain why (4) receives an R-state interpretation, even though the subject does not bear Locative role.

(4) <u>Context</u>: it is freezing outside.
     Yenghuy-nun (chwuwun-tey) **mwun-ul**   **yel**-ko   iss-∅-ta.
     Y.-Top   (cold-but)   **door-Acc open**-KO ISS-N.Pst-Decl
     'Yenghuy <u>is opening the door</u>' or 'Yenghuy <u>has the door open.</u>'
                                          (adapted from Kim 2006: ex. (11))

Another weakness rests in the assumption that KO lacks semantic import although the ambiguity of KO ISS sentences is supposed to arise in part from its selectional flexibility (Son 2004:112). While it is perfectly conceivable that some morpho-syntactic elements are semantically vacuous, there is reason to challenge such treatment of KO.

One argument comes from the fact that ambiguity disappears when KO is replaced by E. To be more accurate, the sentence becomes ungrammatical because KO ISS takes a transitive predicate to yield an R-state reading, whereas E ISS occurs only with telic intransitives or inchoatives (cf. E. Lee 2008 for a slightly different characterization). Furthermore, when occurring with intransitives, KO ISS only yields a P-state reading, regardless of the telicity of the VP. To see this, consider (5) and (6).

<u>With Transitive VPs</u>

(5)a. Yenghuy-nun os-ul   ip-**ko/*e**   iss-∅-ta.
    Y.-Top   clothes-Acc   put.on-**KO/E**   ISS-N.Pst-Decl
    'Yenghuy is putting the clothes on herself.'(P-state)
    'Yenghuy has clothes on. (R-state)

  b. Yenghuy-ka   mwun-ul   yel-**ko/*e**   iss-∅-ta.
    Y.-Nom   door-Acc open-**KO/E**   ISS-N.Pst-Decl
    'Yenghuy is opening the door.'(P-state)
    'Yenghuy has the door open.'(R-state)

<u>With intransitive VPs</u>

(6)a. Yenghuy-nun talli-**ko/*e**   iss-∅-ta.
    Y.-Top   run- **KO/E**   ISS-N.Pst-Decl
    'Yenghuy is running.'(P-state)
    Not: 'Yenghuy is in the state of having run.' (R-state)

  b. Thayang-i   ttu-**ko/e**   iss-∅-ta
    The sun-Nom   rise-**KO/E**   ISS-N.Pst-Decl
    'The sun is rising.' (P-state)
    'The sun has risen.' (R-state)

Since the possible interpretation for a sentence is determined by the selection of the connective in accordance with the predicate type, it seems only logical to conclude that KO and E participate in semantic computation.

This preliminary analysis lets us see that offering an adequate analysis of KO ISS and E ISS would require answering the following questions at the very least:

(i)   What is the true nature of an R-state reading?
(ii) Are the R-state readings produced by KO ISS and E ISS of the same kind? If so, can they receive a uniform account? If not, what is responsible for their divide?
(iii) What are the semantic contributions of KO and ISS? How do they correlate with the availability of P-state vs. R-state readings?

Providing possible answers to these questions is the purpose of the next two sections.

2. Unveiling an R-state reading

In order to reveal the true nature of an R-state reading, I would like to point out first that not just 'put on' type predicates but also numerous other predicates can yield ambiguity with KO ISS, although this fact has gone largely unnoticed in the literature. We have already seen in (3) that 'open X' can

yield ambiguity. Notice now that predicates like 'carry X', 'close/lock X', 'start a fire', 'clean/decorate X', and 'turn on/off X' can also yield both P-state and R-state readings with KO ISS, as exemplified in (7)-(10).

(7) Mina-nun **kapang-ul** **tul**-ko iss-∅-ta.
   M.-Nom **bag-Acc** **carry**-KO ISS-N.Pst-Decl
   'Mina is lifting a/the bag.' (P-state)
   'Mina has a/the bag in her hands.' (R-state)

(8) Uju-nun **mwun-ul** **camku**-ko iss-ess-ta.
   U.-Nom **door-Acc** **lock**-KO ISS-Pst-Decl
   'Uju was locking the door.' (P-state)
   'Uju had the door locked.' (R-state)

(9) Yenghuy-nun **pwul-ul** **phiwu**-ko iss-∅-ta.
   Y.-Top **fire-Acc** **burn**-KO ISS-N.Pst-Decl
   'Yenghuy is starting a fire' (P-state)
   'Yenghuy has/keeps the fire going.' (R-state)

(10) Yoona-nun **cip-ul** **chiwu**-ko iss-∅-ta.
   Y.-Top **house-Acc** **clean**-KO ISS-N.Pst Decl
   'Yoona is cleaning the house.' (P-state)
   'Yoona exist with the house cleaned.' (R-state)

(11) Jina-un **eyekhon-ul** **thul**-ko iss-ess-ta.
   J.-Top **air.conditioner-Acc turn.on**-KO ISS-Pst-Decl
   'Jina was turning on the air conditioner.' (P-state)
   'Jina had the air conditioner on.' (R-state)

One might suspect that these predicates are unified by telicity, that is, they are alike in that their lexical semantics entails the existence of a clear endpoint to the eventualities they describe. As it turns out, however, telicity alone cannot unify them; typical accomplishment predicates such as 'build a house', 'melt/thaw an ice cube', and 'burn a tree' do not give rise to R-state readings with KO ISS, as illustrated by (12) and (13).

(12) Yenghuy-ka **elum** **hana-lul nok-i**-ko iss-∅-ta.
   Y.-Nom **ice.cube** **one-Acc melt-Caus**-KO ISS-N.PstDecl
   'Yenghuy is melting an ice cube.' (P-state)
   Not: Yenghuy has an ice cube melted. (R-state)

(13) Yenghuy-ka **namwu hana-lul thaywu**-ko   iss-∅-ta.
      Y.-Nom   **tree   one-Acc burn**-KO   ISS-N.Pst-Decl
      'Yenghuy <u>is burning a tree</u>.'   (P-state)
       Not: Yenghuy <u>has a tree burnt</u>. (R-state)

What is then the common property of these predicates? I argue that it is their ability to allow for a reading wherein an agentive individual exists maintaining a theme-like individual in some temporary state, without altering its physical form or ontological integrity.[1]

This way of looking at things elucidates what is known as an R-state reading: It consists of two components, namely, (i) object's change of state and (ii) subject's maintenance of that state. That is, it actually results from a complex semantic structure wherein predication of the subject embeds predication of the object.

This double-predication analysis of an R-state reading produced by KO ISS affords us a relatively simple account of the contrast between minimal pairs like (9) and (12): when I start a fire and try to keep it, I can maintain the fire's physical form. This explains why (9) can receive an R-state reading. On the other hand, when I melt an ice cube and try to keep it, I cannot succeed in my attempt because, once melted, an ice cube is no longer an ice cube. For this reason, we cannot assign an R-state reading to (12).

The proposed analysis also provides an elegant account of why KO ISS requires a transitive verb to yield an R-state reading, as shown in (5) and (6), a property often noted but left unexplained in the literature (e.g., Lee 1991, Kim 1993, Son 2004, Lee 2008). Intransitive predicate plus KO ISS do not engender an R-state reading because the nature of the reading is such that it involves both an agentive individual and a theme-like individual.

Since some intransitives can yield an R-state reading when occurring with E ISS, however, the R-state reading produced by KO ISS and the one produced by E ISS have to be of a different nature, contra the widely-held view (see Lee 1991, Kim 1993, Lee 2008). The R-state reading associated with E ISS does not involve a layered structure in which an external argument maintains the internal argument's change of state. This, I propose, is due to the semantic 'function' E ISS imperfective is employed to perform: it is to describe the surface subject or semantic object's existential circumstance, which simply holds for some time being.

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[1]It has been brought to my attention that K. Kim (to appear) makes a similar claim. But the details of her claim are a bit different from mine. Furthermore, under that analysis, the characteristic property of the R-state reading produced by KO ISS is not formally derived, unlike here, as we will see in section 3.

A welcome result of this analysis is that it lets us explain why some telic intransitive predicates cannot occur with E ISS yielding an R-state reading, as observed by Kim (to appear). Take (14), for instance: (a) is judged good but (b) is not because, in the latter, the surface subject no longer exists, so an existential property cannot be ascribed to it.

(14) a. Cungke-ka   **ssah-i**-e   iss-∅-ta.
      Evidence-Nom   **accumulate-Pass**-E Exist-N.Pst-Decl
    'Much evidence has <u>been accumulated</u>.'
  b.*Cungke-ka   **epeci**-e   iss-∅-ta.
      Evidence-Nom   **disappear**-E   Exist-N.Pst-Decl
      Intended: 'Evidence has <u>disappeared</u>.'

In the next section, I develop a formal analysis of KO ISS and E ISS and establish that the difference between them stems crucially from KO.

3. A Formal Analysis of KO ISS and E ISS

Before launching a formal analysis, a few preliminary remarks are in order. First, I will use KO ISS$_R$ and KO ISS$_P$ to refer to KO ISS that yield an R-state reading and a P-state reading, respectively. Second, I will assume the VP-internal subject hypothesis (e.g., Fukui and Speas 1986). Third, a type-theoretic and truth-conditional semantics will be adopted (see, e.g., Klein and Sag 1985). Finally, we will adopt extensional semantics until it is deemed necessary to talk about things in possible worlds semantics terms.

3.1. The Syntax and the Semantics of KO ISS$_R$

Let me begin by outlining the morpho-syntactic assumptions to be made in deriving the semantics of KO ISS$_R$ imperfectives. First, I would like to argue that ISS$_R$ is a lexical verb and the surface subject is its argument. Support for this analysis comes from the fact that, in a KO ISS$_R$ sentence, a manner adverb can occur between *ko* and *iss* modifying *iss*. This is illustrated in (15). Suppose I have a son named Uju. This evening I have to go to a party to which children are not welcome. So I tell my son to stay safe by keeping the door locked. This contextualization makes the sentence not only gram-matical but also felicitous. Furthermore, it shows that the only possible read-ing for it is one in which the manner adverb *ancelnhakey* modifies *iss*; if *iss* were an auxiliary, such modification would not be possible.

(15)   Uju-un   mwun-ul camku-ko **ancenhakey**   iss-ess-ta.
      U.-Top   door-Acc lock-KO   **safely**   ISS-Pst-Decl
      'Uju <u>existed/stayed safely</u> with the door locked.'
      Not: 'Uju <u>locked the door safely</u> and existed/stayed in that state.'

Notice that, in a purely progressive sentence, a manner adverb cannot occur between *ko* and *iss* modifying *iss*, though it can modify the main verb, as shown in (16).

(16) John-un   wuntongcang-ul   **yelshimhi**   talli-ko
     J.-Top   playground-Acc   **vigorously**   run-KO
     (*****yelshimhi)   iss-ess-ta.
      vigorously   ISS-Pst-Decl
     Intended: 'John was <u>vigorously running</u> in the playground.'

Second, I propose that the 'main' predicate, such as *tat-* 'to close' in (4), selects for a PRO argument that gets controlled by the surface subject. A PRO is posited here because such verbs have an agentive role to assign but the external role bearer is never pronounced when occurring with KO ISS.

Third, I propose that KO is syntactically a connective but it makes two semantic contributions: (i) perfect aspect and (ii) the relational predicate 'keep'. I further argue that KO selects for a null subject PRO and a VP complement, which branches out into a null perfect aspect marker $\varnothing$ and another VP, as depicted in (17).[2] (Here, DP_1 is the subject and DP_2 is the object.)

(17) $[_{vP2} DP_1 [_{vP2} [_{ConP} PRO_1 [_{vP1} [_{vP1} PRO_1 DP_2 V] [_{PERF} \varnothing]] KO] ISS]]$

Evidence for the perfect meaning contributed by KO_R comes from the fact that, in a sentence receiving an R-state reading, the auxiliary verb *noh* 'have' (Lit. 'put') can occur before KO, yielding a temporal abutting reading for two sets of eventualities. Sentence (18) is an illustrative case: the (a) and the (b) sentences are synonymous with each other.

(18)a. John-un   mwun-ul   camku-ko   iss-$\varnothing$-ta.
      J.-Top   door-Acc   lock-KO   ISS-N.Pst-Decl
      Intended: 'John exists with the door closed.'
  b. John-un   mwun-ul   camku-e   **noh**-ko   iss-$\varnothing$-ta.
      J.-Top   door-Acc   lock-E   **Aux**-KO   ISS-N.Pst-Decl
      'John locked the door <u>and then</u> exists in that state.'

With regard to the claim that KO_R contributes the 'keep' meaning, supporting evidence comes from the fact that, with the light verb *ha* 'do', KO can mean 'with', as shown in (19).

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[2] Given the proposed semantic contribution of KO, it is plausible that KO actually selects for an Aspect Phrase, rather than a VP. But calling it a VP would be fine for our purposes.

(19) Yenghuy-nun   Swunhi-**hako**   noll-ass-ta.
     Y.-Top   S.-**with**   play-Pst-Decl
     'Yenghuy played <u>with</u> Suwnhi.'

On an intuitive level, 'with' is analogous to 'have' or 'keep'. Furthermore, it is a two-place predicate, just like 'have' or 'keep'. So it will not be too far-fetched to hypothesize that KO_R is represented as 'keep' (or 'have') in the logical structure.

Treating KO_R as encoding the meaning of 'keep' would be tantamount to postulating that the morpheme takes an external argument, since 'keep' is a transitive verb. But KO's argument never surfaces in KO ISS sentences. So, given the Theta Criterion, we are led to hypothesize that it is a PRO.[3]

Turning now to the semantics of KO ISS_R, I would like to build my analysis on Parsons' (1990) treatment of Perfect Aspect. According to Parsons, perfect aspect introduces a 'target state', which refers to the temporary state that comes about when the event denoted by the sentence culminates and holds true of the incremental theme argument (p. 234). Obviously, what Parsons calls a target state parallels what we call an R-state. Given this notional similarity between the two types of state, I suggest (20) as the lexical entry for the null perfect marker $\varnothing$.[4]

(20) $[[\varnothing]] = \quad \lambda P_{<lt>}.\lambda s.\lambda t.\exists e[\tau(e) < t \ \& \ P(e) = 1 \ \& \ Target(e) = s \ \&$
$t \subseteq \tau(s)]$

As for the lexical entry for KO_R, I propose (21). This formally captures what is outlined above in prose.

(21) $[[KO_R]] = \lambda R_{<s<it>>}.\lambda x.\lambda s''.\lambda t.\exists s'[R(s')(t) = 1 \ \& \ keep(x)(s')(s'')$
$\& \ t \subseteq \tau(s'')]$

Finally, I propose (22) as the lexical entry for ISS_R.

(22) $[[ISS_R]] = \lambda Q_{<s,<it>>}.\lambda x.\lambda s.\lambda t.\exists s[Q(s)(t) = 1 \ \& \ exist(x)(s) \ \&$
$IN(x)(s) \ \& \ t \subseteq \tau(s)]$

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[3]Further support comes from the widely-held assumption that KO imperfective always selects for a non-finite verbal category (e.g., Son 2004, Lee 2008). Since non-finite clauses are the proto-typical habitat for a PRO, it stands to reason that KO's complement harbors one as well.

[4]Here and throughout, l is a type for events, s for states, i for times, and t for truth-values. In addition, τ is shorthand for 'run time' of an eventuality.

When we apply these lexical entries to (4) and assume the syntactic structure given in (16) while applying the standard semantics of Tense, we obtain (23) as its logical form for the sentence on the R-state reading.

(4) Yenghuy-ka   mwun-ul   tat-ko   iss-∅-ta.
    Y.-Nom   door-Acc close-KO   ISS-N.Pst-Decl
    'Yenghuy <u>has the door closed</u>.' (R-state)
     Lit.: 'Yenghuy <u>exists with</u> the door closed.'

(23) $\exists t[now \subseteq t \ \& \ \exists s''.\exists s[\exists s'[\exists e[\tau(e) < t \ \& \ close(door)(Yenghuy)(e)$
     $\& \ Target(e) = s' \ \& \ t \subseteq \tau(s')] \ \& \ keep(Yenghuy)(s')(s) \ \& \ t \subseteq \tau(s)]$
     $\& \ exist(Yenghuy)(s'') \ \& \ IN(Yenghuy)(s) \ \& \ t \subseteq \tau(s'')]]$[5]

This logical form basically says that Yenghuy exists keeping the door in the closed state for a while. This matches our intuitions about the meaning of the sentence. We can therefore conclude that the proposed analysis is on the right track (for further discussion, see M. Kim to appear).

3.2. The Syntax and the Semantics of E ISS

I propose that E ISS is identical to KO ISS$_R$ except for the 'keep' meaning contributed by KO. That is, E is a connective that just spells out perfect aspect and ISS has the same lexical verbal status. So the structure for an E ISS sentence is much simpler, as can be seen in (24): there is just one PRO in the structure which saturates the (internal) argument of the 'main' verb.

(24) $[_{VP2}$ DP$_1$ $[_{CONP}$ $[_{VP1}$ PRO$_1$ V] $[_{PERF}$ E]] $[_v$ ISS]]

Since E spells out perfect, it has the same lexical entry as ∅, as given in (25). Similarly, ISS's denotation is identical to (22).

(25) $[[E]] = \lambda P_{<lt>}.\lambda s.\lambda t.\exists e[\tau(e) < t \ \& \ P(e) = 1 \ \& \ Target(e) = s \ \&$
     $t \subseteq \tau(s)]$

When we apply these denotations to sentence (26) while assuming the structure depicted in (24), we obtain (27) as its logical form.

(26) Mwun-i   tat-hi-e   iss-∅-ta
     door-Nom   close-Caus-E   ISS-N.Pst-Decl
     'The door is closed.'

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[5]This logical form can be enriched by the inclusion of world variables and an implicit location argument of ISS, because 'existence' usually involves 'location'.

(27) $\exists t[now \subseteq t \ \& \ \exists s\exists s'[\exists e[\tau(e) < t \ \& \ close(door)(x)(e) \ \& \ Target(e)$
$= s \ \& \ t \subseteq \tau(s)] \ \& \ exist(door)(s') \ \& \ IN(door)(s) \ \& \ t \subseteq \tau(s')]]]$

The derived logical structure matches our intuitions about the meaning of the sentence. Furthermore, it correctly captures the subtle nuance that the state of the door is not maintained by an implicit agent; it simply holds for some time being.

3.3. The Syntax and the Semantics of KO ISS$_P$

Space precludes me from talking extensively about KO ISS$_P$. So let me just offer the gist of the idea I have in mind here (see, for details, M. Kim 2008, M. Kim to appear). I believe that KO$_P$ is a connective, just like KO$_R$, but ISS$_P$ is an auxiliary. I contend, however, that the way in which a P-state reading comes about parallels the derivation of an R-state reading: both KO and ISS contribute to the semantics.

To be more specific: due to its literal meaning 'and', KO introduces an in-progress state in the sense of Parsons (1990), as formally given in (28).

(28) $[[KO_P]] = \lambda P_{<lt>}.\lambda s.\lambda t.\lambda w.\exists e[\tau(e) < t \ \& \ P(e)(w) = 1 \ \&$
$In\text{-}progress(e) = s \ \& \ t \subseteq \tau(s)]$

After KO$_P$ combines with the main VP, ISS$_P$ comes along and makes the sentence assert that the 'continuation branch' of the VP meaning in the sense of Landman (1992) exists in some possible world; that is, if the event continues in some world, it will culminate. And this is due to its denotation given in (29).

(29) $[[ISS_P]] = Q_{<s<i<w, t>>}.\lambda s'.\lambda t'.\lambda w'.\exists s.\exists w[Q(s)(t)(w) = 1 \ \&$
$<s', t', w'> \in CON(g(s), t, w) \ \& \ [[Q]](s')(t')(w') = 1]$

When applied to (4), this set of assumptions yield (30).

(30) $\exists t[now \subseteq t \ \& \ \exists s.\exists w[\exists e[\tau(e) < t \ \& \ close(door)(John)(e)(w) \ \&$
$In\text{-}progress(e) = s \ \& \ t \subseteq \tau(s)] \ \& \ \exists s'. \ \exists t'.\exists w'.[<s', t', w'> \in$
$CON(g(s), t, w) \ \& \ \exists e'[\tau(e') < t \ \& \ close(door)(John)(e')(w') \ \&$
$In\text{-}progress(e') = s' \ \& \ t' \subseteq \tau(s)] = 1]]]$

This logical structure captures the P-state reading of the sentence. So we conclude that the present analysis of KO ISS$_P$ is a promising line to pursue.

4. Summary and Conclusion

This paper has two main claims. First, the R-state readings produced by KO ISS and E ISS are not identical, contrary to the prevailing belief: one involves a complex predication structure and the other involves a simplex predication structure. Second, the imperfective puzzle arises crucially from the syntax and semantics of KO, E, and ISS, in particular due to the connective KO and the existential verb ISS. An important revelation, however, is that, despite their differences, KO ISS$_P$, KO ISS$_R$, and E ISS all help to assert about the continuity of some temporary state, be it a P-state or an R-state, and the existence of some entity, be it an eventuality or an individual.

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