Pseudo-Raising and Its Implications for Linguistic Theory: A Preliminary Study

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Abstract: This paper aims to lay the groundwork for an exploration into a linguistic phenomenon called "pseudo-raising", also known as "copy raising". As the most important property of a pseudo-raising (PR) sentence, it requires a pronominal "copy" in the embedded clause, coindexed with the matrix subject when it is a non-expletive DP. Simply put, there must be a variable bound by the matrix subject in the embedded clause for the PR sentence to be well-formed. However, previous studies have shown that some PR sentences do not require the presence of a copy, the reason of which needs to be taken into account. In this current, Landau (2011) proposes the "P-source − Copy Generalization", which successfully captures many of the relevant facts discussed in the literature. In this paper, we approach the question of how this is reflected in syntax, mentioning the possibility that the notion of evidentiality might contribute to solving the question.

Keywords: Pseudo-raising · Copy raising · Base-generation · θ-role · P-source · Evidentiality

1. Introduction

Since the publication of Postal (1974), many researchers have addressed the syntactic operation "raising" as an operation in which a constituent in a non-finite embedded clause moves to the matrix subject position. To begin with, let us look at the following examples to grasp how sentences involving the operation are assumed to be derived:

(1) a. Alfred seems to eat his veggies.
     b. $[_{TP}$ Alfred$_i$ $[_{T'}$ $[_{VP}$ seems $[_{TP}$ t$_i$ $[_{T'}$ to $[_{VP}$ t$_i$ eat his veggies]]]]]]

(Rooryck, 2000, p.1)

(1b) is the structure of (1a). First, the constituent *Alfred* is generated in the specifier position of the embedded VP, and receives a θ-role from the combination of the verb *eat* and its internal argument *his veggies*. It then moves to the specifier position of the embedded TP due to the EPP feature on T, and further moves to the specifier position of the matrix TP to receive Case, by virtue of the unavailability of Case at the landing site of the first movement. It is important to note that this operation does not alter the logical proposition of the derived sentence: its meaning does not change dramatically before and after the operation is applied, because it does not influence the argument structure of the sentence. Moreover, the non-alternation of the logical proposition is closely connected with the property of the position in which the raised element lands. Specifically, it is assumed that the relevant position is a non-θ-position, as evidenced by the following examples[1]:

(2) a. The fur {seems / [#]wants} to fly.   (Radford, 2004, p.273)
     b. There seems to be trouble in the Congo.   (Postal, 1974, p.34)
     c. * There {tried / expected / hoped} to be a man here. (Hornstein, 2003, p.7)

Basically, an idiomatic interpretation does not survive if the idiom chunks display discontinuity (i.e. if they are separated). Nevertheless, the example with *seem* in (2a) is interpretable as having the meaning of the idiom *the fur flies*. The availability of the idiomatic reading can straightforwardly be accounted for if we assume that the idiom component *the fur* raises from the θ-position in the embedded clause to the non-θ-position in the matrix clause. Additionally, the subject position of the raising predicate can be

occupied by the (non-thematic) expletive *there* as in (2b), while it cannot occur in the subject position of a non-raising predicate, as exemplified in (2c). The facts observed also suggest that the subject position of a raising predicate is a non-θ-position, but that of a non-raising predicate is a θ-position. Hence, it is reasonable to assume that the subject position of a raising verb is a non-θ- position.

Related to the syntactic operation in discussion, the topic of our interest is a linguistic phenomenon called "pseudo-raising" (in Rooryck's (2000) terminology), also referred to as "copy raising" (Potsdam & Runner, 2001; Landau, 2011; among others)[2]. We will henceforth use the term "pseudo-raising" (PR), following Rooryck (2000). We have seen in (1) and (2) that it is assumed that the subject position of a raising verb is a non-θ-position. Hence, (3a) below, a sentence in which the expletive *it* has occurred in the matrix subject position, is not problematic. However, the situation is not straightforward in (3b), which looks like involving some raising operation as indicated by coindexing[3]:

(3) a. It seems {as if / as though / like} John is happy.
     b. John$_i$ seems {as if / as though / like} he$_i$ is happy.

(Lappin, 1983, p.122)

The sentence in (3b) can be analyzed in two different ways, in terms of whether it involves movement or base-generation. As it turns out, there is empirical evidence that claims that the base-generation approach is theoretically better than the movement approach. This is because the three issues in the following, addressed in Section 2, arise if we assume that PR sentences involve a movement operation as well as "ordinary" raising ones:

(4) a. Tensed S Condition (Chomsky, 1973)
     b. Improper Movement (Chomsky, 1981)
     c. Principle of Full Interpretation (Chomsky, 1995) (cf. θ-Criterion (Chomsky, 1981))

The theoretical issues (4a) and (4b) do not arise under the assumption that the matrix subject and its copy are base-generated (Lappin, 1983, 1984; Rooryck, 2000; Potsdam & Runner, 2001) although the issue (4c) needs to be elaborated on. Moreover, previous studies have concluded that the relevant sentences also need to be addressed regarding the following aspects:

(5) a. The property of the matrix subject position; a θ- or non-θ-position.
     b. The syntactic factor that determines the property.
     c. The environments in which a pronominal "copy" must occur in the embedded clause.

Given (4) and (5), this paper will delve into the derivation of PR sentences and the linguistic phenomena related to them, by reviewing how previous studies overcame the theoretical issues and challenges described above. It will also consider what analysis would be regarded as the most suitable and reliable, examining the relationship between the "P-source－Copy Generalization (PCG)" proposed by Landau (2011) and the grammatical notion of evidentiality (cf. Aikhenvald, 2004).

The paper is organized as follows. Section 2 observes the properties of PR sentences and compares the movement and base-generation approaches, mentioning how the theoretical issues in (4) can be handled under each of the two. Based on the discussion, Section 3 examines the aspects in (5) that need to be explored. Subsequently, Section 4 tentatively proposes how the aspects in (5) are licensed in the derivation of PR sentences in syntax, and clarifies our future research topics. Finally, Section 5 makes concluding remarks.

2. The Two Approaches: Movement vs. Base-Generation

In this section, we compare the movement and base-generation approaches. As an introduction to the discussion, let us examine the properties of pseudo-raising (PR) sentences that have been attracting researchers' attention, which is connected with the aspect in (5c): the environments in which a pronominal "copy" must occur in the embedded clause. First, consider the following examples:

(6) a. John$_i$ seems {as if / as though / like} he$_i$ is happy. (Lappin, 1983, p.122)
    b. * John seems {as if / as though / like} Bill is happy. (Lappin, 1983, p.122)

The contrast in (6) indicates that a pronominal copy is necessary in the clause introduced by *as if*, *as though*, or *like* when the matrix subject is a non-expletive DP. Moreover, the examples below further indicate that the position in which the copy occurs does not have to be a subject position[4]:

(7) a. Bill$_i$ seems as if Mary is chasing {him$_i$ / *Sam}. (Lappin, 1983, p.122)
    b. Mary$_i$ appears as if {her$_i$ / *John's job} is going well. (Lappin, 1983, p.122)

As exemplified, PR sentences are required to have a pronominal copy in the embedded clause, given the string "DP - PR predicate - *as if*". Furthermore, the embedded clause, headed by *as if,* in the examples above is a complement to the matrix predicate. A copy is always optional when the embedded clause is an adjunct to the matrix predicate as illustrated in (8) below, but this type of sentence is different from the one in discussion.

(8) John walks as if the pavement is uneven. (Lappin, 1984, p.242)

Thus, we concentrate on PR sentences like (6) and (7) that involve an embedded clause introduced by *as if*, *as though*, or *like,* which is a complement to the matrix predicate, setting aside adjunct cases as in (8). In short, what counts the most in the current discussion is that PR sentences involving an *as if*-complement generally require the presence of a pronominal copy coindexed with the matrix subject in the embedded clause, when the relevant subject is a non-expletive DP. Crucially, the property in discussion leads to the analysis that the relevant sentences are derived by some raising operation in the sense that an antecedent and its trace must be coindexed, analogous to the coindexation between the matrix subject and its copy. However, such an analysis does not hold under several syntactic theories, and this section thoroughly addresses this issue.

2.1 Movement Approach

To understand what syntactic theories conflict with the movement approach, let us first look at the configuration in (9). Assuming that PR sentences like (6a) involve a raising operation, we would have to accept the following configuration:

(9) [$_{TP}$ John$_i$ [$_{T'}$ [$_{VP}$ seems [$_{CP}$ t$_i$ [$_{C'}$ as if [$_{TP}$ t$_i$ (=he) is happy]]]]]]

This configuration, however, poses several challenges to syntactic theories. One is that it goes against Chomsky's (1973) claim that the condition in (10) must be satisfied as a general principle of grammar[5]:

(10) Tensed S Condition (Chomsky, 1973)
     A-movement is impossible from a tensed clause.

The Tensed S Condition is a condition that restricts the movement of an argument out of a tensed clause. Given this condition, the configuration in (9) should be ruled out, because an argument is extracted from the tensed embedded clause. However, contrary to the prediction, the sentence is well-formed. This suggests that the relevant sentence does not involve a movement (or raising) operation in the derivation.
    Moreover, the configuration in question faces another conflict with a principle formulated in Chomsky (1981), which is described below:

(11) Improper Movement
     Any movement that involves a chain in the sequence of A → A' → A is excluded.

Notice that the configuration in (9) involves the movement of an element in an A-position to another via an intermediate A'-position, which should be regarded as Improper Movement along the line of (11). However, the sentence is ruled in, which implies that it is not derived by a movement operation.

Crucially, the facts obtained from (10) and (11) strongly suggest that the movement approach poses theoretical issues. In what follows, we examine the validity of an alternative approach, the approach in which the matrix subject and its copy are base-generated rather than derived by movement.

2.2 Base-Generation Approach

In this section, we delve into the analysis that PR sentences are not derived by a movement operation despite their appearance, which seems to involve raising of a copy element from the tensed embedded clause to the subject position in the matrix clause. Compared with (9), if we adopt the base-generation approach, we would obtain the following configuration:

(12) $[_{TP}$ John$_i$ $[_{T'}$ $[_{VP}$ seems $[_{CP}$ $[_{C'}$ as if $[_{TP}$ he$_i$ is happy]]]]]]
               ↑   ↑
         base-generation   base-generation

The advantage of this approach is that it does not pose issues regarding the Tensed S Condition and Improper Movement, since the configuration does not involve a movement operation. Additionally, the spell-out of a copy can be dealt with in a rather straightforward way under the base-generation account. Notice that the configuration in (9) needs an independent motivation to replace the trace that is phonologically unrealized with a copy that is phonologically realized. It is worth noting that such a rule might be similar to the rule of intrusive (or resumptive) pronoun insertion. Ura (1998) proposes that a language-particular rule, what he calls the "Rule S", plays a role in spelling out the trace with a pronominal copy (See Ura (1998) for details). The relevant operation is essentially analogous with the derivation of intrusive pronouns; however, many previous studies have concluded that the PR pronominal copy is not an intrusive pronoun (Chao & Sells, 1983; Heycook, 1994; Lappin, 1983; Potsdam & Runner, 2001; Sells, 1984; among others). On the other hand, the issue does not arise under the base-generation approach, because no trace would be involved in the derivation. Therefore, the base-generation approach has more advantages than the movement approach because it does not violate the general principles of grammar of significance.

However, it is too early to conclude that the configuration in (12) is impeccable. As seen in Section 1, the subject position of a raising verb is assumed to be a non-θ-position. Then, it logically follows that there is no way that the raised DP receives an appropriate interpretation or a θ-role in the position, in violation of the Principle of Full Interpretation (FI) (Chomsky, 1995), or the θ-criterion (Chomsky, 1981), an equivalent principle in generative syntax, which are described as (13) and (14) below:

(13)   Principle of Full Interpretation (Chomsky, 1995)
         PF and LF representations may not contain an element that is uninterpretable in the performance systems (i.e. the sensorimotor system and the conceptual-intentional system).

(14)   θ-Criterion (Chomsky, 1981)
         An argument is assigned a unique θ-role, and a θ-role is assigned to a unique argument.

To resolve these issues, we can assume that the matrix subject shares the θ-role assigned to the pronominal copy through the A-chain between them, following Lappin (1983, 1984) and Rooryck (2000). However, we would face crucial disadvantages if we adopt this view. That is, Lappin's (1984) analysis requires a revision of the θ-criterion, because it allows two arguments to share one θ-role, which violates the conventional θ-criterion[6, 7]. Essentially in the same way, Rooryck (2000) analyzes that a sharing relation is built through a special configuration for PR sentences[8]. However, the logic is consistent only under the assumption of the construction-particular "special" configuration. Technically, their analyses are not made to be in violation of the θ-criterion (or its revised version), but it is still unclear whether the same logic is true of FI. After all, we still need to address the issue of how the derivation of PR sentences satisfies the principle in (13) (or in (14)).

The conclusion to be drawn for this section is that the base-generation approach has more advantages than the movement approach, because the former can circumvent the theoretical issues concerning the

Tensed S Condition and Improper Movement. However, even under this approach, it still remains unclear how the Principle of Full Interpretation (or the θ-criterion) can be satisfied under the assumption that the subject position of a raising verb is a non-θ-position, because it would be problematic if a DP is base-generated in such a position where it cannot be assigned a θ-role. In the next section, we will address the relevant issue, following Potsdam and Runner (2001) and Landau (2011).

3. Seeking Further Properties of Pseudo-Raising

In this section, we will look at Potsdam and Runner (2001) and Landau's (2011) pioneering works on pseudo-raising. In detail, the former proposed that PR predicates are ambiguous between a thematic and a non-thematic use, and the latter that the properties of PR sentences can be generalized with a notion that he calls the "P-source" (Landau, 2011). The generalization is called the "P-source − Copy Generalization" (Landau, 2011), and its reliability is supported by a variety of PR examples. In what follows, we will look into their proposals.

3.1 Thematic and Non-Thematic Use

First, let us consider what Potsdam and Runner (2001) claim. Their main claim is that, in PR sentences, the position in which the main subject occurs is a non-θ-position if its copy occurs in a subject position in the embedded clause, and it is a θ-position if its copy occurs in a non-subject position in the clause, as illustrated below:

(15) a. $\underline{\text{Subject}_i}$ PR-predicate {as if / as though / like} $\underline{\text{Subject}_i}$ …
          non-θ-position
      b. $\underline{\text{Subject}_i}$ PR-predicate {as if / as though / like} … $\underline{\text{Non-Subject}_i}$ …
          θ-position

Therefore, to simply and coherently describe their proposal, PR predicates may take both a thematic and non-thematic subject when they select a complement clause introduced by *as if, as though*, or *like*. To show that the claim in (15) is positive, Potsdam and Runner (2001) provide the examples in (16) below, which in fact empirically support their claim:

(16) a. [%]$\underline{\text{There}}$ seem like $\underline{\text{there}}$ are problems.
      b. *$\underline{\text{There}}$ seems like John expects $\underline{\text{there}}$ to be an election.
      c. [%]$\underline{\text{The shit}}$ appears as though $\underline{\text{it}}$'s going to hit the fan very soon.
      d. *$\underline{\text{The other foot}}$ appears like the shoe is on $\underline{\text{it}}$.

(Potsdam & Runner, 2001, pp.455–456)

Let us compare (16a) and (16b), and (16c) and (16d). In the former example sentences, the copy is realized as *there*, although the position in which it occurs is different in each sentence. More specifically, when the copy occurs in a subject position as in (16a), the sentence is acceptable (although it seems that some language varieties rule out such a sentence). On the other hand, (16b), in which the copy occurs in a non-subject position, is ungrammatical. Let us now consider what the asymmetry is attributed to. First, it is generally assumed that expletives including *there* only occur in a non-θ-position due to their property of being semantically vacuous. As seen in (2c), *there* cannot occur in the subject position of a non-raising predicate, because such a predicate takes an external argument, namely its subject is endowed with a markedness, which is associated with a certain thematic role (e.g. agent, experiencer, etc.). Provided that no such role may be allocated to expletives, it logically follows that *there* can only occur in a non-θ-position. Therefore, the contrast between (16a) and (16b) suggests that the subject position of (16a) is a non-θ-position, while that of (16b) is a θ-position. Moreover, the same result is obtained from the contrast between (16c) and (16d): an idiomatic interpretation is possible only when the copy occurs in a subject position. This further suggests that the subject position of (16c) is a non-θ-position, while that of (16d) is a θ-position.

Additionally, the facts in (17) and (18) lend further plausibility to the claim that PR predicates are ambiguous between a thematic and a non-thematic use. Notice that a PR sentence can be paraphrased as

a sentence with the expletive *it*, only when the copy occurs in a subject position as in (17), not when it occurs in a non-subject position as in (18).

(17) a. He seems like he's ill.
     b. =It seems like he is ill.
(18) a. He seems like Kim just dumped him.
     b. ≠It seems like Kim just dumped him.

(Potsdam & Runner, 2001, p.457)

The contrasts above provide us with more evidence that the matrix subject position of (17a) is a non-θ-position, whereas that of (18a) is a θ-position. However, as the major issue to be addressed, it is still unclear how these properties are licensed in the derivation, because Potsdam and Runner (2001) do not elaborate on the details of the lexical properties of those PR predicates. Therefore, the nature of PR sentences needs to be scrutinized.

To summarize, Potsdam and Runner's (2001) analysis indicates that we may need to admit the idea that the thematic property of a raising verb's subject position is determined depending on where a copy occurs. In the next section, we will delve into Landau's (2011) generalization that successfully captures our intuition as to what entries are included in the descriptions of PR predicates in the lexicon.

3.2 The P-source − Copy Generalization

Before examining Landau's (2011) analysis, let us go over the property of a PR sentence using the examples in (6), which are reproduced as (19) below:

(19) a. John$_i$ seems {as if / as though / like} he$_i$ is happy.   (Lappin, 1983, p.122)
     b. * John seems {as if / as though / like} Bill is happy.   (Lappin, 1983, p.122)

As exemplified, PR sentences basically require a pronominal copy for them to be licensed. However, previous studies have pointed out that some of them are not susceptible to the relevant licensing condition (e.g. Landau, 2011). For instance, consider the following examples, along with the context of the utterance:

(20) a. *Context*: I read about the nutritional merits of Tibetan food, and remark:
         It *sounds*$_1$ like Tibetans are healthier than us.
     b. *Context*: I read about the nutritional merits of *tsampa*, the Tibetan flour (made of roasted barley and butter tea), and remark:
         Tsampa sounds$_2$ like Tibetans are healthier *(eating it).
     c. *Context*: My friend tells me about the nutritional merits of Tibetan food. I respond:
         You *sound*$_3$ like Tibetans are healthier than us.

(Landau, 2011, p.794)

Be aware that a copy is irrelevant to PR sentences starting with *it*, as in (20a). On the other hand, it should be noted that (20b) is required to have a copy in the embedded clause for it to be well-formed, whereas (20c) does not have to meet this requirement. Given the data, the observed facts naturally lead to the following question: in what circumstances is a copy obligatory?

Landau (2011) provides insights into this question, mentioning the matrix subject's property. He claims that a copy is obligatory when the subject is not the source of perception regarding the proposition denoted in the embedded clause selected by a PR predicate, which is generally a perceptual verb. He attempts to generalize this condition, using the term "P(erceptual)-source":

(21) The P-source − Copy Generalization (PCG) (Landau, 2011, p.787)
      Given a sentence "DP$_i$ V$_{perc}$ (*to* DP$_j$) like CP",
      where V$_{perc}$ ∈ {*seem, appear, look, sound, feel, smell, taste*}:
      A copy (= pronoun coindexed with DP$_i$) is necessary in CP iff DP$_i$ is not a P-source.

Given (21), let us now return to (20) and see if the PCG is true of the examples in it. In (20b), the proposition that *Tibetans are healthier eating tsampa* is a piece of information obtained from the article

that the person read, and therefore the article is the P-source of the proposition. However, *tsampa*, a non-P-source element, occurs in the matrix subject position, so the copy is necessary. By contrast, *you* is the P-source of the proposition that *Tibetans are healthier than us* in (20c), and hence, the sentence does not require the presence of a copy for it to be well-formed. Thus, the question of when a copy is necessary in a PR sentence is empirically generalized in (21).

Based on the generalization, Landau (2011) further mentions the selectional properties of the PR predicates. Specifically, he argues that such predicates like *sound* only have two major concepts: $SOUND_B$ and $SOUND_T$. He assumes that $SOUND_B$ builds "a binary relation between an experiencer and a proposition (ignoring the event argument)" (p. 798), whereas $SOUND_T$ builds "a ternary relation, specifying that an auditory sensation originating in the P-source generates in the experiencer the thought/impression denoted by the propositional argument" (p. 798). The denotation of $SOUND_B$ is that an auditory stimulus about a certain event has given the experiencer a certain thought or impression, which is expressed in the form of a propositional argument. During the perceptual event, the P-source of the perceived proposition is left unspecified, because the concept is irrelevant to $SOUND_B$. In comparison, the denotation of $SOUND_T$ involves specifying the P-source because of its ternary nature: $SOUND_T$ consists of three different components. Therefore, $SOUND_B$ lacks one of the three components compared with $SOUND_T$. More importantly, it is necessary to make this distinction to incorporate the notion of P-source into the lexical entries. Furthermore, he proposes that PR predicates like *sound* encompass three lexical entries based on the distinction, as illustrated in (22) below, which correspond to each usage of the predicate in (20). Note that *s* is an event variable, *z* an experiencer variable, *p* a propositional complement, and *P* its predicative variant. *x* and *y* denote a P-source subject argument and a non-P-source subject argument, respectively:

(22) Lexical entries for *sound*
    a.   *sound$_1$*: $\lambda z.\lambda p.\lambda s.SOUND_B$ (s, z, p)   (cf. (20a))
    b.   *sound$_2$*: $\lambda y.\lambda z.\lambda P.\lambda s.SOUND_B$ (s, z, P(y))   (cf. (20b))
    c.   *sound$_3$*: $\lambda x.\lambda z.\lambda p.\lambda s.SOUND_T$ (s, x, z, p)   (cf. (20c))
                                                             (Landau, 2011, p.799)

To briefly describe each of the three, *sound$_1$* denotes that an auditory stimulus about an event *s* has given the experiencer *z* a thought or impression denoted by the proposition *p*. Because the relation is built by $SOUND_B$, the P-source has no way to get involved in the relation. This entry corresponds to the use of *sound* with the expletive *it* as its subject. Then, *sound$_2$* denotes that an auditory stimulus about an event *s* has given the experiencer *z* a thought or impression denoted by the predicative proposition *P(y), y* a non-P-source subject argument. Finally, *sound$_3$* incorporates the notion of P-source because of its ternary nature, along with the denotation that can be expressed by *sound$_1$*. More importantly, the denotation of *sound$_2$* corresponds to the non-thematic use of the verb and that of *sound$_3$* the thematic use (Landau, 2011). Therefore, the key point is that a PR predicate has the three different uses, one for use with an expletive, another for use with a non-thematic subject, and the other for use with a thematic subject. It is important to note here that PR sentences containing the relevant predicate should be licensed (or successfully interpreted in the performance systems) thanks to the three different lexical entries. This indicates that the challenges in (5) are circumvented in information-processing processes. Moreover, the proposed lexical entries and the PCG capture the relevant facts concerning PR sentences described in (4) and (5). In this respect, the proposals are reliable and can be advocated.

Now we have established the semantic properties of PR predicates, we can tackle the next question: what syntactic category is the P-source concerned with? In the next section, we will introduce a possible analysis that may solve the question, using the notion of "evidentiality" (cf. Aikhenvald, 2004) and clarify what topics we should deal with in our future research.

4. Proposal and Future Research Topics

In this section, we tentatively propose what syntactic category the three different lexical entries for the PR predicates are associated with. More specifically, we would like to point out that the notion of P-source is closely connected with the notion of evidentiality, and its fundamental definition is described in the following:

(23) Evidential expressions "[cover] the way in which the information was acquired."

(Aikhenvald, 2004, p.3)

According to Aikhenvald (2004), languages that can express evidentiality typically express it by means of a sentence-final particle. Japanese is one example language that marks the evidentiality of a reported proposition with such an element. In order to understand how it works, let us consider the following examples:

(24) a. Ame-ga   fut-tei-ru   -sooda.   [Hearsay]
          rain-NOM   fall-ASP-PRES   Evid$_{Hearsay}$
          'I heard that it's raining'.
      b. Ame-ga   fut-tei-ru   -rashii.   [Inference]
          rain-NOM   fall-ASP-PRES   Evid$_{Inferential}$
          'It is likely that it's raining'.

The elements -*sooda* and -*rashii* are sentence-final particles that specify the source of information as *hearsay* and *inference*, respectively. For example, -*sooda* indicates that the speaker has obtained the information by auditory stimuli, whereas -*rashii* indicates that the proposition is obtained through the speaker's inference, and therefore the information source lies in the speaker him/herself. Moreover, it is important to note that Aikhenvald (2004) assumes that the notion of evidentiality makes it a grammatical category, as can be seen in (24) where -*sooda* and -*rashii* are given the label "Evid". Assuming that the relevant notion is language-universal, we are led to predict that English also has expressions to mark and license the evidentiality of a sentence. In fact, the language has expressions whose information sources can be sought in grammatical constituency:

(25) a. I hear you have a brother that goes to Lehigh.
      b. She says they met the professor later.   (Fox, 2001, p.172)

The sentences in (25) are both utterances made based on auditory stimuli. This implies that *I hear* in (25a) and *she says* in (25b) might constitute a grammatical category related to evidentiality.

   Let us now consider how evidentiality is encoded in syntax. According to Cinque (1999), adverbs exhibit the rigid ordering constraint illustrated in the following:

(26) Universal Adverb Hierarchy
      [*frankly* Mood$_{speech\ act}$ [*fortunately* Mood$_{evaluative}$ [*allegedly* Mood$_{evidential}$ [*probably* Mod$_{epistemic}$
      [*once* T (Past)...]]]]]   (Cinque, 1999, p.106)

Under this hypothesis, the hierarchy has a layer labelled as "Mood$_{evidential}$", which is connected with the notion of evidentiality. Therefore, we can assume that the adverbials -*sooda* and *I hear* in (24a) and (25a), respectively, can consist of the relevant category because they denote a source of evidentiality (cf. Honda, Naya, Ikarashi & Mori, 2015). Adopting this view, we would obtain the following structures for (24a) and (25a) through a process of "re-analyzing" the discontinuous element *I hear* into a constituent occupying Spec-MoodEvidP (see Nishimaki (2015) and Honda et al. (2015) for the details of the relevant re-analysis):

(27) a. [$_{MoodEvidP}$ [$_{MoodEvid'}$ [$_{TP}$ Ame-ga fut-tei-ru] -rashii]]
      b. [$_{MoodEvidP}$ I hear [$_{MoodEvid'}$ [$_{TP}$ I [$_{vP}$ hear [$_{CP}$ [$_{TP}$ it's raining]]]]]]

Assuming that the P-source of a perceived proposition can be incorporated into the denotation of a sentence only when the category MoodEvidP is present, we are led to predict, concerning the derivation of PR sentences, that it is present when the selected PR predicate is the third type (i.e. the one corresponding to *sound$_3$* in (22)), and it is not when the selected PR predicate is the second type (i.e. the one corresponding to *sound$_2$* in (22)). Therefore, the question of whether the P-source is involved in the denotation of a PR sentence could be answered by the alleged structure in (27). This possibility can be motivated by Asudeh and Toivonen's (2012) claim that the subject of a PR predicate is "interpreted as

the source of perception" (p.334). Their claim indicates that a PR sentence, as well as sentences like (24) and (25), carries a sense of evidentiality. To understand this, let us look at the following examples:

(28)　a.　Charley looked to me like he goosed Francine.
　　　b.　I saw Charley.　　　　　　　　　　　　　　　　　　　(Rogers, 1974b, p.77)

Rogers (1974b) observes that there must be the context in (28b) as a presupposition to utter the PR sentence in (28a). Essentially, *Charley* is the source of perception given to the speaker, namely the perception that *Charley goosed Francine*. In this respect, the subject plays a role as the source of perception expressed by the *like* clause. Accordingly, the structure of (28a) might be as follows[9]:

(29)　[$_{MoodEvidP}$ Charley$_i$ looked (to me) [$_{MoodEvid'}$ ... [$_{PP}$ [$_{P'}$ like [$_{CP}$ [$_{C'}$ ø [$_{TP}$ he$_i$ goosed Francine]]]]]]

In this structure, *Charley* is interpreted as the source of perception[10] ; more precisely, it is interpreted as the indirect source of information in the sense that *Charley*, but not the speaker, is the source of information. Thus, there is a possibility that the subject of a PR sentence is licensed in syntax by the depicted grammatical category. Although we need to consider the validity of the analysis in further detail, we leave the topic for future research.

5. Concluding Remarks

In conclusion, the nature of PR sentences may be accounted for by the P-source − Copy Generalization, and by the assumption that a PR predicate has the three different lexical entries. It is important to note that the theoretical issues in (4) and the aspects in (5) are all handled successfully under the analysis. Moreover, it captures Potsdam and Runner's (2001) claim that PR predicates are ambiguous between a thematic and a non-thematic use thanks to the enunciation of their contained lexical entries. Given the semantic properties of the relevant predicates, we are motivated to consider how they are reflected in syntax. We claim that the notion of evidentiality is particularly close to the notion of P-source, and hence propose that PR sentences that incorporate the P-source into their derivations involve MoodEvidP, whose property determines whether a copy is necessary in the embedded clause; although, at this point this is only a speculation and hence, needs careful observation in further detail. Nevertheless, we are motivated to argue for the existence of such a grammatical category, because the two notions share many characteristics. We leave the argument for our future research, because the possibility needs to be examined carefully.

Notes

[1] The hash represents that the sentence with the verb is not interpretable as idiomatic.
[2] The linguistic phenomenon was addressed in detail in Rogers (1971, 1972, 1974a, 1974b), who named it "Richard", because the example sentences that he used contained the word *Richard*.
[3] Some researchers (cf. Kobayashi (1994), among others) analyze that *seem* takes a small clause PP complement headed by *as if,* and the subject element in Spec-PP raises to the matrix subject position, analogous to standard raising. However, Landau (2011) dismisses this analysis.
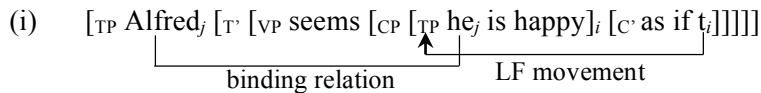[4] In GB framework, (7b) cannot be analyzed as derived by a raising operation, given the configuration [$_{TP}$ [$_{DP}$ [$_{D'}$ her] [$_{NP}$ job]] [$_{T'}$ is [$_{VP}$ going well]]]. Notice that *her* cannot be governed by T due to the presence of an inherent barrier intervening between them, namely the maximal projection of DP. Therefore, the DP yields an island effect and its internal items are resistant to extraction.
[5] The description is cited from Potsdam and Runner (2001, p.460).
[6] He adopts the "Restricted Theta Criterion" proposed by Williams (1983). Interested readers are referred to the article.
[7] There is a possibility that FI rules in θ-role sharing between two arguments. However, at least the θ-criterion does not allow the building of such a relation. Thus, we need to consider if FI has the same requirements as the θ-criterion does, but we do not go into details here for the sake of simplification.
[8] Rooryck (2000) proposes the following configuration for a pseudo-raising sentence:

(i) $[_{TP}$ Alfred$_j$ $[_{T'}$ $[_{VP}$ seems $[_{CP}$ $[_{TP}$ he$_j$ is happy$]_i$ $[_{C'}$ as if t$_i$$]]]]]$

binding relation   LF movement

[9] We assume that *as* and *like* constitute the category P and *if* and *though* the category C, following Landau (2011).

[10] It is important to note that (29) is a potential counterexample to the PCG in (21), as *Charley* is the P-source of the reported proposition but the sentence is required to have a pronominal copy in the embedded clause to be well-formed. This suggests that the notion of P-source is not completely sufficient to account for when a copy is required. However, at this point, it is not clear what influences the occurrence of a copy, other than the P-source. Hence, we leave the issue as an open question.

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