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## In Support of the Implicature Approach to Deriving Ignorance Inferences

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### ABSTRACT

*Lack of Relevant Identification approach (LRIA: cf. Aloni 2001; Aloni & Port 2012; Aloni & Port 2015) and Ignorance Implicature approach (IIA. cf. Alonso-Ovalle & Menendez-Benito 2010; Alonso-Ovalle & Menendez-Benito 2013; Alonso-Ovalle & Menendez-Benito 2017) are two main methods to account for the ignorance component associated with indefinites across languages. Analyzing Japanese wh-ka indefinites, Sudo (2010) proposes to derive the ignorance component of the wh-ka indefinites exclusively under the LRIA. However, Alonso-Ovalle & Shimoyama (2014) present an argument against Sudo's (2010) LRIA based account of derivation of the ignorance component of the Japanese wh-ka epistemic indefinites. Alonso-Ovalle & Shimoyama argue that it is premature to deviate from the IIA. Alonso-Ovalle & Shimoyama, based on new observations, claim that wh-ka indefinites are faced with issues when analysed exclusively under LRIA. In this paper, relevant data retrieved from the existing literature and new data introduced by the author based on native speaker judgements are analysed in light of the LRIA and IIA, thus following the deductive approach to draw the conclusions. Based on the observations of wh-indefinites in Sinhala exhibiting similar as well as varied behaviours in light of those of Japanese, this paper shows evidence in support of Alonso-Ovalle & Shimoyama (2014). It claims that deviating from the IIA so abruptly to derive the ignorance implicatures of epistemic indefinites exclusively under the LRIA is quite ineffectual. The paper also presents novel and interesting data from Sinhala that pose challenges even for the two existing approaches. It highlights the need for a new approach/method to account for the derivation of ignorance inferences associated with epistemic indefinites cross-linguistically.*

**KEYWORDS:** *Ignorance, Implicatures, Indefinites, Sinhala, Japanese*

## 1 INTRODUCTION

Two different methods: Ignorance Implicature approach (hereafter IIA: Alonso-Ovalle & Menendez-Benito 2010; Alonso-Ovalle & Menendez-Benito 2013; Alonso-Ovalle & Menendez-Benito 2017) and Lack of Relevant Identification approach (hereafter LRIA: Aloni 2001; Aloni & Port 2012; and Aloni & Port 2015) are mainly used to account for the derivation of the ignorance component of epistemic indefinites in languages. The IIA proposes that the ignorance effect of epistemic indefinites is due to an “epistemic modal variation” component in indefinites that signals that “there is no individual that satisfies the existential claim in all worlds compatible with what the speaker believes” (Alonso-Ovalle & Shimoyama 2014, p. 11). This ignorance component is claimed to be a quantity implicature that results from a competition between the proposition that is asserted and the propositions that workout as alternatives to that proposition. On the other hand, the LRIA proposes that the ignorance component of epistemic indefinites conveys that the speaker cannot identify the individual associated with the indefinite in some contextually determined manner. Thus, Aloni & Port (2012) claim that the ignorance component associated with indefinites is not an implicature. But it is derived by way of a contextually determined shift in a method associated with identification<sup>1</sup>. Aloni & Port (2015) and Aloni & Port (2012) propose that the methods of identification cross-linguistically follow a hierarchy as in (1).

- (1) ostension > naming > description
- (2) In Romance, but not in Germanic, the identification method required for knowledge must be higher in order than the identification method

required for epistemic indefinites. (Aloni & Port 2015, p. 131)

In this background, Sudo (2010) argues that Japanese *wh-ka* indefinites are concerned with the “identifiability” of the individual in question as represented in (3).

- (3) John likes who-ka.
  - a.  $\exists x$ : John likes x.
  - b. The speaker cannot identify x. (Sudo 2010, p.13)

Inspired by examples as in (4), Sudo (2010) argues that the speaker knows which book Juan bought, i.e., the most expensive book in the store, in some contextually relevant way, and he also shows that it conveys that the speaker cannot identify the book in some other contextually relevant way.

- (4) Juan-wa dare-ka sono honya-de ichiban takai hon-o katta.  
 Juan-top which-KA that book.store-loc most expensive book-acc bought  
 “Juan bought some book that is most expensive in the store.” (Sudo 2010, p.14)

Bringing up evidence that shows that the ignorance component of the *wh-ka* indefinites disappears in both downward entailing (DE) and upward entailing (UE) contexts, which is the signature of the quantity implicature as a conversational implicature (Grice 1989), Alonso-Ovalle & Shimoyama (2014) challenges Sudo’s (2010) LRIA based analysis of *wh-ka* indefinites. Alonso-Ovalle & Shimoyama (2014) argue that in a scenario like that in (5), the speaker cannot utter (6) because (6) conveys that he/she does not have idea as to with which student Prof. Tanaka is dancing.

<sup>1</sup> For a detailed description of the two approaches, see (Alonso-Ovalle and Menendez-Benito, 2013).

- (5) Scenario: Right now, every professor is dancing with a student. J is seeing quite clearly the scene. She knows perfectly well who a student is and who a professor is in that department. L calls J over the phone. (Alonso-Ovalle & Shimoyama 2014, p. 12)
- (6) \*Tanaka-sensee-ga dare-ka gakusee-to odotteru.  
Tanaka-professor-NOMwho-KA student-with is.dancing  
“Prof. Tanaka is dancing with some student.” (Alonso-Ovalle & Shimoyama 2014, p. 13)

They show that, at the same time, it would be appropriate for the speaker to utter (7a) in the same context where the ignorance component would disappear, and hence the hearer can well ask the question in (7b).

- (7) a. J: *Dono kyooju-mo dare-ka gakusee-to odotteru.*  
which professor-MO who-KA student-with is.dancing  
“Every professor is dancing with some student.”
- b. L: *Dare-ga dare-toodotteru no?*  
who-NOMwho-witis.dancing Q  
“Who is dancing with who?”  
(Alonso-Ovalle & Shimoyama 2014, p. 13)

They argue that this disappearance of the ignorance implicatures in an upward entailing environment with respect to the nuclear scope of the universal quantifier is predicted in the IIA, but not under the LRIA. Under the LRIA, the ignorance inferences are expected to cancel only in the downward entailing environments.

Based on the examples that follow here, they also show that the ignorance component of *wh-ka* epistemic indefinites is akin to a quantity implicature. They show that the ignorance component disappears in downward entailing environments as in (8).

- (8) Ken-wa dare-ka gengogakka-no gakusee-to tsukiatteiru-no-de-wa nai.  
Ken-TOP who-KA linguistics.dept-GEN student-with dating-NO-DE-WA NEG  
“It’s not that Ken is dating a student in the linguistics department.” (Alonso-Ovalle & Shimoyama 2014, p. 15)

As seen in (9), the ignorance inferences associated with *wh-ka* indefinites are also cancellable.

- (9) Ken-wa dare-ka gengogaku-no gakusei-to kekkonshita. jitsuwa dare-da-ka Ken-TOP who-KA linguistics-GEN student-with married in.fact who-COP-Q shitteru. know  
“Ken married a linguistics student. In fact, (I) know who it is.” (Alonso-Ovalle & Shimoyama 2014, p. 15)

As (10) shows, the ignorance component can be reinforced without redundancy.

- (10) Ken-wa dare-ka gengogakka-no gakusei-to tsukiatteiru kedo, dare-da-ka shira-nai.  
Ken-TOPwho-KAlinguistics.dept-GENstudent-withdatingbutwho-COP-Qknow-not  
“Ken is dating a student in the linguistics department, but (I) don’t know who it is.”  
(Alonso-Ovalle & Shimoyama 2014, p. 15)

As (11) shows, it can express partial ignorance.

- (11) Ken-wa dare-ka/doko-kaie-nonaka-no heya-ni iru hazuda.  
Ken-TOP which.one-KA/where-KA house-GEN inside-GEN room-LOC  
“Ken must be in a room of the

house.”(Alonso-Ovalle & Shimoyama 2014,p. 15)<sup>2</sup>

Showing evidence that *wh-ka* indefinites signal different types of ignorance, they also argue that the ignorance component related to *wh-ka* indefinites is not common across different *wh-ka* types. They show that in a scenario as in (12), the speaker cannot utter the sentence in (13) with *dare-ka* (which-ka) as it signals that she does not know which mushroom she touched.

- (12) This time J and L are hiking in the woods. As they go down a steep hill, they see a troop of mushrooms. J’s hand inadvertently touches one. She clearly sees the mushroom that she touched.
- (13) J:\*Dare-ka kinoko-ni sawat-ta!  
 which.one-KA mushroom-DAT  
 touch-past  
 “(I) touched which one-ka mushroom!” (Alonso-Ovalle & Shimoyama, 2014, p. 13)

However, the use of *nani-ka* (what-ka), replacing *dare-ka* (which-ka) is acceptable in the same context, which shows variations in the levels of ignorance associated with *wh-ka* indefinites.

- (14) J: Nani-ka kinoko-ni sawat-ta!  
 what-KA mushroom-DAT touch-  
 PAST  
 “(I) touched what-ka mushroom!”  
 (Alonso-Ovalle & Shimoyama 2014, p. 13)

As Alonso-Ovalle & Shimoyama (2014) argue, the difference between *which-ka* and *what-ka* cases may be handled in terms of LRIA. For example, the *which-ka* cases require some other method of identification than Ostension (perceptual evidence). They however argue that this way of analysis requires a contextually

presupposed method of identification. They assert that the ignorance component of a language is not necessarily tied to an existence of a method required by context and thus challenges the LRIA to the analysis of the ignorance component of the Japanese *wh-ka* indefinites. In this background, they claim that Japanese *wh-ka* indefinites bear very strong evidence in favor of the IIA to handling of their ignorance component. Showing that empirical facts of *wa-ka* indefinites also bear evidence against the LRIA, Alonso-Ovalle & Shimoyama (2014) argue that a departure from the IIA is ‘premature’ (Alonso-Ovalle & Shimoyama 2014, p. 12).

A more recent account of Sinhala epistemic indefinites is found in Slade (2015). In Slade (2015), he attempts to account for the ignorance component of Sinhala indefinites in terms of LRIA that analyzes the ignorance component of indefinites as being derived from the speaker’s inability to identify the individual associated with the existential claim in a contextually relevant way.

Within this background, the objective of this paper is to examine how the Ignorance Implicature approach (IIA: Alonso-Ovalle & Menendez-Benito 2010; Alonso-Ovalle & Menendez-Benito 2013; Alonso-Ovalle & Menendez-Benito 2017) or Lack of Relevant Identification approach LRIA: Aloni 2001; Aloni & port 2012; and Aloni & Port 2015) can handle the ignorance component associated with epistemic indefinites in Sinhala. Accordingly, the paper investigates whether it is the IIA or LRIA that can better account for ignorance inferences in Sinhala. The paper shows evidence that most significant facts such as disappearance of ignorance inferences in upward entailing contexts associated with the ignorance component of epistemic indefinites in Sinhala can be accounted for by way of the Ignorance Implicature approach, rather than Lack of Relevant Identification approach. Thus,

<sup>2</sup> I would also like to thank Professor Hisashi Morita for the judgment of the data here.

the paper shows more evidence in support of Alonso-Ovalle & Shimoyama (2014), that deviating from the IIA to the derivation of the ignorance inferences associated with epistemic indefinites in general is quite unmotivated. I also show evidence that there are facts associated with the ignorance component of epistemic indefinites in Sinhala that any of the approaches: IIA or LRIA cannot handle. Accordingly, the paper paves ways for further research in the area of derivation of ignorance inferences cross linguistically.

The paper is organized according to the following structure. Section 2 discusses the research methodology applied in the study. Section 3 deals with results and discussion. Section 4 presents the conclusions and recommendations.

## **2 RESEARCH METHODOLOGY**

This section discusses the methodology used in this investigation. First, it presents details related to collection of language data from primary and secondary sources. Second, it discusses data testing and analysis method and procedure.

### **2.1. Data Collection**

As is the standard in the discipline of linguistics, language samples in this paper consist of sentences/phrases that are generally and commonly used in the languages taken up for investigation in this paper. As evident, some example sentences were adopted from secondary sources such as those in the existing literature as in Sudo (2010), Alonso-Ovalle & Shimoyama (2014), and Aloni & Port (2015). Respective references are provided in the relevant instances. New data introduced by the author as a native speaker of Sinhala were also taken up for investigation and analysis. When certain sentences were interpreted, grammatical

judgements by native speakers of Japanese and Sinhala were used, and the details of these judgments are provided in the respective places. A formal grammatical judgement task was not carried out as two native speakers of Sinhala and Japanese were informally consulted to take judgements only on certain doubtful contexts. The readers are directed to footnotes 2 and 6 for more details with respect to the samples, types of sentences and references to the two native speakers who gave grammatical judgements on the particular sentences.<sup>3</sup>

### **2.2 Data Analysis**

The investigation in the current study is based on the deductive research approach where conclusions are drawn by analyzing and testing the hypothesis in light of the existing theories and studies such as LRIA and IIA. For instance, data in the existing literature (cf. Sudo 2010, Alonso-Ovalle & Shimoyama 2014, and Aloni & Port 2015) and new data provided by the author as a native speaker of Sinhala were tested with respect to LRIA and IIA and analysed considering LRIA and IIA to reach the conclusions.

## **3 RESULTS & DISCUSSION**

In this section, first, it is shown that the ignorance component associated with the Sinhala wh-epistemic indefinites holds evidence applicable to both IIA and LRIA to a certain extent. Second, it shows that IIA is superior to the LRIA as the former is able to handle the most significant aspects of epistemic indefinites: disappearance of ignorance inferences in upward entailing contexts that LRIA cannot handle. Thus, it is claimed that the ignorance facts of epistemic indefinites in Sinhala are more in support of the IIA. It also shows that there are some ignorance facts of

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<sup>3</sup> However, since this is not an experimental study involving participants, the data about participants were not added.

Sinhala epistemic indefinites that do not fall under any of the two approaches.

### 3.1 Ignorance Component and its Distribution in Sinhala Epistemic Indefinites

Sinhala has different types of indefinites to express ignorance in the nominal domain. Other than the plain indefinite (15), two other types of indefinites are formed by adding the particles *-hari* and *-də* to indeterminate phrases (IDPs: cf. Kuroda 1965 and Kratzer & Shimoyama 2002) in Sinhala as in (16a) and (16b). These are referred to as *-hari* (16a) and *-də* (16b) indefinites.

- (15) a. Siri poth-ak gattha.  
Siri book-INDF bought  
'Siri bought a book.'
- (16) a. John mokak-hari gattha.  
John what-hari bought  
'John bought something.'
- b. Siri mokak-də gattha.  
Siri what-də bought  
'Siri bought something.'

Indefinites formed in this way function in Sinhala the way indefinite pronouns like *something*, *somebody* do in English. A complex indefinite can be formed by adding a plain indefinite to an indefinite pronoun as in (17)<sup>4</sup>.

- (17) a. Siri mokak-hari poth-ak gattha.  
Siri what-hari book-INDF bought  
'Siri bought some book.'
- b. Siri mokak-də poth-ak gattha.  
Siri what-də book-INDF bought  
'Siri bought some book.'

Indefinites formed with both the particles *-hari* and *-də* overtly express ignorance, and are, thus, epistemic indefinites. For example, both the

sentences in (18) and (19) make the 'existential' claim that some teacher called and also convey that the speaker does not have an idea as to who called. It would be odd for a hearer to ask 'Who' after the speaker has uttered the sentences.

- (18) A: kauru-hari guruwariy-ak katha keruwa  
who-hari teacher-INDF call did  
'Some teacher called.': The speaker  
does not know who (Implicature)  
B: \*Kau-də?  
who-də  
'Who?''<sup>5</sup>
- (19) A: kau-də guruwariy-ak katha keruwa.  
who-də teacher-INDF call did  
'Some teacher called.': The speaker  
does not know who (Implicature)  
B: \*Kau-də?  
who-də  
'Who?'

However, a construction with a plain indefinite as in (20) does not have to convey that the speaker is ignorant about who called.

- (20) A: guruwariy-ak katha keruwa.  
teacher-INDF call did  
'A teacher called.'  
B: Kau-də?  
who-də  
'Who?'  
A: 'Mary''<sup>6</sup>

Thus, the Sinhala *-hari* and *-də* indefinites can rightly be called epistemic indefinites because they overtly express ignorance. In the following section, I discuss how wh-epistemic indefinites in Sinhala relate to the II and LRI approaches in the handling of ignorance component of Sinhala epistemic indefinites.

<sup>4</sup> When the plain indefinite is added to an indefinite pronoun, the indefinite pronoun functions like a determiner for the interpretation of the plain indefinite.

<sup>5</sup> The particle *-də* also functions as a question marker in Sinhala as seen here. As questions are not the main concern in the paper, it is not taken up for discussion and is left for future research.

<sup>6</sup> I would like to thank Professor Lalith Ananda for the judgements of the data here.

### 3.2. Sinhala Epistemic Indefinites under II and LRI Approaches

The two types of *-hari* and *-də* indefinites show different ways of behavior under the two types of approaches: LRIA and IIA. Consider the Scenario in (21). In this context, it is felicitous for the hearer to ask, “Which one?” (22/23) and for the speaker to identify the student by ostentation, i.e. “That one to the left, etc.” as in (22/23. i). This shows that the ignorance component of Sinhala *-hari* and *-də* indefinites are compatible in a context in which the speaker can visually recognize/identify the person but is ignorant in some other method of identification such as naming, employment, etc., which shows evidence in support of the LRI approach.

- (21) John is kissing some girl.  
Two people A and B are watching the scene.
- (22) A: John kauru-hari kell-ek imbinawa.  
John who-hari girl-INDF kiss  
‘John is kissing some girl’  
B: \*kau-də?  
who-də  
‘Who?’  
B: monə kena-də?  
which one-də  
‘Which one?’
- (i) A: That one over there. [pointing]  
(ii) A: The blonde. (in case there is only one pragmatically-salient blonde)  
(iii) A: \*Sally Bloggs, the daughter of our department head.
- (23) A: John kau-də kell-ek imbinawa.  
John who-də girl-ek kiss  
‘John is kissing some girl’  
B: \*kau də?  
who-də  
‘Who?’  
B: monə kena də?  
which one-də  
‘Which one?’

- (i) A: That one over there.  
[pointing]  
(ii) A: The blonde. (in case there is only one pragmatically-salient blonde)  
(iii) A: \*Sally Bloggs, the daughter of our department head.

However, more important and crucial evidence which undermines the evidence for the LRIA is observed with the cancelable properties of *-hari* indefinites. As with *wh-ka* indefinites in Japanese, a *-hari* indefinite is felicitous in the same context as in (5) (repeated here in (24) when it is embedded under a universal quantifier and the ignorance component of the indefinite disappears as shown in (25).

(24) Scenario: Right now, every professor is dancing with a student. J is seeing quite clearly the scene. She knows perfectly well who a student is and who a professor is in that department. L calls J over the phone.

- (25) hæmə mahachaaryəwarəy-ek-mə  
kauru-hari sisay-ek ekkə natənəwa.  
every professor-INDF-EPH who-hari.  
student-INDF with dance  
“Every professor dances with some student.”

This behavior of *-hari* indefinites bears evidence against LRIA where it does not predict the ignorance component to disappear in an upward entailing context as in (25). However, this kind of disappearance of the ignorance component in an upward entailing context is predicted under IIA. As discussed with respect to the example (7) in Section 1, this was the main challenge presented by Alonso-Ovalle and Shimoyama (2014) to argue against LRIA. Thus, it can be argued that *-hari* indefinites in Sinhala are mainly in keeping with IIA, but not LRIA.

At the same time, the behaviour of *-də* indefinites is different. It will still hold on to the ignorance component and, even if embedded

under a universal quantifier, it would be infelicitous in the context of (24) as shown in (26).

- (26) hāmə mahachaaryəwarəy-ek-mə kau-  
də lamay-ek ekkə natənəwa.  
every professor-INDF-EPH who-də  
student-INDF with dance  
“Every professor dances with some student.”

The example in (25) shows that the ignorance component of *-hari* indefinites disappears in upward entailing contexts, which provides evidence in support of the implicature approach. However, the ignorance component of *-də* indefinites remains non-cancellable (26) which also poses problems for the implicature approach. Thus, Sinhala *-də* indefinites bear strong evidence to show that their ignorance component is a conventional implicature (i.e., it cannot be cancelled), rather than a conversational implicature. If it is a conversational implicature in the sense of Kratzer & Shimoyama (2002) and Alonso-Ovalle & Menendez-Benito (2010), it should be able to be canceled.

- (27) \*Siri monəwa-də kəwa, mama dannawa  
eyaa monəwa-də kəwe kiyala-th.  
Siri something ate, I know he what ate  
that-also  
“Siri ate something, and I also know what he ate.”

On the other hand, the ignorance property of *-hari* indefinites can be canceled in contexts like those involving teasing or joking as shown in (28).

- (28) Siri monəwa-hari kəwa, mama dannawa  
eyaa monəwa-də kəwe kiyala-th.  
Siri something ate, I know he what-  
də ate that-also  
“Siri ate something, and I also know what he ate.”

This shows that the *-də* indefinites in Sinhala are also different from those of Japanese *wh-ka* indefinites. The ignorance component of *wh-ka* indefinites can be obviated, but that of the Sinhala *-də* indefinites can never be obviated. Overall, it could be seen that the ignorance component of *-hari* indefinites is a conversational implicature (i.e., its ignorance component can disappear or can be cancelled) while that of *-də* indefinites is a conventional implicature (i.e., its ignorance component cannot disappear or cannot be cancelled). Thus, it is claimed that the ignorance component of *-hari* and *-də* indefinites is more akin to an implicature (IIA) as there are no provisions in the LRIA to account for the non/cancelable properties of the *-hari* and *-də* indefinites. At the same time, the IIA predicts ignorance inferences to be obviated or canceled in certain contexts as discussed above. However, it was seen that the ignorance implicatures of *-də* indefinites cannot be canceled, which is something that the IIA does not have provisions to handle. This is also in keeping with Slade (2015) as discussed in Section 1. Even though Slade (2015) tries to account for the ignorance effects of Sinhala indefinites based on different pragmatic clues and methods of identification, he notes that the results are inconclusive: “Although thinking about epistemic indefinites in Sinhala and in English in terms of identification methods is useful, it appears that ostension does not provide a good characterization of the felicity conditions” (Slade 2015, p.90). He asserts that “...formulating a reasonable formal semantic analysis of epistemic indefinites also requires paying attention to morphological make up of such indefinites especially in languages like Sinhala, Malayalam or Japanese, where the morphological components of epistemic indefinites participate systematically in the formation of a variety of other structures.” (Slade 2015, p.90).

#### 4 CONCLUSION & RECOMMENDATIONS

This paper reviewed Alonso-Ovalle and Shimoyama's (2014) reply to Sudo (2010) that proposed to derive the ignorance component of Japanese *wa-ka* indefinites solely based on the Lack of Relevant Identification approach. Alonso-Ovalle & Shimoyama (2014) presented evidence from Japanese *wa-ka* indefinites to argue that the ignorance facts of Japanese *wa-ka* indefinites cannot be exclusively derived based on the Lack of Relevant Identification approach. In this paper, it was claimed that the ignorance component associated with Sinhala epistemic indefinites cannot also be accounted for exclusively by the Lack of Relevant Identification approach. It was also claimed that there are facts associated with Sinhala epistemic indefinites that any of these existing methods cannot handle. The requirement for a new approach/method to uniformly account for all the nuances associated with the ignorance component of epistemic indefinites cross-linguistically is highlighted

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