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Introducing *diri*: Understanding the Role of *diri* as a Reflexivizer

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The expression of reflexivity in Indonesian and related languages is based on various strategies, see Cole and Hermon (2005), Kartono (2013), and Schadler (2014) for discussion. This paper focuses on the expression of reflexivity based on the element diri and its cognates, not discussed in these papers. As a reflexive marker, bare diri is not specified for grammatical features such as number, gender, and person, so it imposes no restrictions on the value of the subject argument. It is only allowed with a subset of verbs, namely agenttheme verbs. Our goal is to determine its precise role. After applying a number of diagnostics for argumenthood (Dimitriadis and Everaert 2014), we show that diri is not an argument. We propose that the role of diri is that of an element marking detransitivization of the verb and reflecting an operation combining the latter's agent and theme roles into one complex agent-theme role ("a bundling operation" in the sense of Reinhart and Siloni 2005). This complex role is assigned to the remaining argument resulting in a reflexive interpretation. Further tests also show that agent and patient roles are indeed present in verbs with diri after the bundling operation.

Keywords: Reflexivity; Indonesian; Bundling; Agent-Theme Verbs; Argumenthood

1. INTRODUCTION. Indonesian, like many other languages, employs a number of different strategies to express reflexivity; see, for instance, Kartono (2013) and Schadler (2014) for discussion. One strategy involves the use of the "supercomplex" reflexive *dirinya sendiri*, as in (1a). This element must be bound in its local domain (roughly the co-argument domain). Another strategy uses the element *dirinya*, which is also morpho-syntactically complex and may be locally or nonlocally bound (1b). For the sake of convenience, we will refer to these as "full reflexive" and "half reflexive," respectively. Similar strategies are employed in other Malayic languages in Indonesia, such as Palembang¹ (2) and Jambi (3), see also *dirinya* in Malay (Cole and Hermon 2005) and *awake deen* in Peranakan Javanese (Cole, Hermon, and Yanti 2008).²

^{1.} On the Glottolog website (Hammarström et al. 2020), this language is also known as Musi.

^{2.} In quoting examples from the literature, we leave glossing as it is. In other cases, we use the Leipzig Glossing rules. We choose 'self' as a neutral translation for *sendiri* in order to avoid prejudging an analysis. *Sendiri* can also mean 'alone'. It is also used as an emphatic reflexive in Indonesian. The prefix *meN*- and the suffix -*kan* (and their variants) are written as *meN*- and -*kan* in the glossing, in order not to prejudge any of the competing analyses of their functions.

- (1) Indonesian
 - a. Rita_j me-lihat diri-nya sendiri_{j.}
 Rita meN-see body-3sg.gen self
 'Rita sees herself.'
 - b. Rita_j meng-(k)ira Anton_k me-lihat diri-nya_{j/k}.

 Rita meN-think Anton meN-see body-3sg.GEN

 'Rita thought that Anton saw himself/her.'
- (2) Palembang
 - a. Rita_j ny-(j)ingok dio dewek_j.

 Rita ny-see 3 self

 'Rita saw herself.'
 - b. Rita_j ny-(s)angko Anton_k nyingok diri-nyo_{j/k.}
 Rita ny-think Anton ny-see body-3sg.gen
 'Rita thought that Anton saw himself/her.'
- (3) CITY JAMBI
 - a. Rita_j n-(t)engok diri-nyo dewek_j.

 Rita n-see body-3sg.GEN self

 'Rita saw herself'
 - b. Rita_j kiro Anton_k n-(t)engok diri-nyo_{j/k}. Rita think Anton n-see body-3sG.GEN 'Rita thought that Anton saw himself/her.'

In this paper, we will focus on a third strategy of reflexivity based on the element *diri*, not discussed in these papers. According to the Kamus Besar Bahasa Indonesia—Indonesian Dictionary (Badan Pengembangan dan Pembinaan Bahasa 2017), the word *diri* means 'body' or 'self'. Consequently, we will gloss it as 'body', leaving open whether this properly reflects its current meaning.

1.1. *diri.* The element *diri* only occurs with a limited class of verbs, as will be shown below. In this, it is similar to other reflexive markers, like the Dutch unstressed anaphor *zich*, or a suffix like *-sja* in Russian. Bare *diri* is not specified for phi-features, such as person (first, second, or third person), gender (feminine or masculine), and number (singular or plural), so it imposes no restrictions on the value of the subject argument. Example (4) provides some examples of verbs allowing *diri* (4a,b) and not allowing it (4c,e).

(4) Indonesian

- a. Anak-anak bisa men-jaga diri.
 child-DUPL can meN-protect body
 'Children can protect themselves.'
- Anton mem-basuh diri setelah pulang dari kerja.
 Anton meN-wash body after return from work
 'Anton washed himself after returning from work.'
- c. *Dia me-lihat diri di cermin.

 3sG meN-see body in mirror

 'She sees herself in the mirror.'

- d. *Anto mem-benci diri.

 Anto meN-hate body

 'Anto hates himself.'
- e. *Anto men-cinta-i diri. Anto meN-love-i body 'Anto loves himself.'

As (4) shows, verbs such as 'protect' in (4a) and 'wash' in (4b) allow combination with *diri*, but verbs such as 'see' in (4c), 'hate' in (4d), and 'love' in (4e) do not.

So, what kind of verbs in Indonesian can be combined with *diri* resulting in a reflexive interpretation? On the basis of a survey we conducted,³ we conclude that it is a subset of the class of verbs that assigns an agent role to their subject and a theme role to their object, agent—theme verbs for short. As we will see in section 2, this result is in line with a generalization reported in Reinhart and Siloni (2005). This subset includes verbs like 'defend', 'injure', 'prostitute', 'candidate', and 'torture', as illustrated in (5).

- (5) a. Dia mem-pertahan-kan diri dari serangan tersebut. 3sg meN-defend-kan body from attack the 'He defends himself from the attack.'
 - b. Jika anak remaja Anda mengaku bahwa ia suka if kid teenage 2GEN confess that 3SG like me-luka-i diri, upayakan untuk tidak panik atau me-injure-i body try to not panik or bereaksi berlebihan.
 - 'If your teenage kid confesses that he likes to injure himself, try not to panik or overreact.'
 - https://www.jw.org/id/perpustakaan/majalah/g201308/remaja-melukai-diri/ (accessed May 12, 2019)
 - c. Demi gaya hidup, siswi SMA dan for style life student senior.high.school and mahasiswi ini me-lacur-kan diri di laman. university.student.female these *me*-prostitute-*kan* body in internet 'In order to have a decent life style, these students of senior high school and university prostitute themselves on the internet.'
 - d. Prabowo men-calon-kan diri di Pilpres 2019.
 Prabowo meN-candidate-kan body in presidential election 2019.
 'Prabowo candidates himself in the presidential election 2019.'

^{3.} The data of the languages investigated were collected during several months from April 2018 to January 2019. The data were collected from the Internet, questionnaires, and by interviews. All respondents are native speakers: Indonesian, two dialects of Palembang, two dialects of Jambi, and two dialects of Lampung. The number of respondents varies from five to ten people for each language. Some respondents live in The Netherlands, some of them live in Indonesia, particularly in the provinces of Jambi, South Sumatra, and Lampung, where the languages investigated are located. The methodology applied in collecting the data involved distributing questionnaires via e-mails and interviewing the respondents directly. In The Netherlands, the interviews were done in person and sometimes by a phone call. For the respondents who live in Indonesia, the interviews were conducted by phone calls or video connection. Texting via WhatsApp was also frequently used to check the validity of the data or to ask the details of the glossing of the related languages.

e. Dia meny-(s)iksa diri karena dia me-milik-i 3sG meN-torture body because 3sG meN-have-i gangguan mental.

problem mental 'He tortures himself because he has a mental problem.'

Diri is occasionally also found with verbs bearing the prefix ber- (6a), although

(6) a. Rita ber-hias diri di depan kaca.

Rita ber-primp body in front mirror

'Rita primps herself in front of the mirror.'

ber- is traditionally assumed to mark intransitivity (6b).

- b. *Rita ber-hias ibu-nya di depan kaca. Rita ber-hias mother-3sg.GEN in front mirror 'Rita primps her mother in front of the mirror.'
- **1.2. RESEARCH QUESTION.** Our main goal is to determine the precise status and role of *diri*.⁴ Is it an argument with a restricted distribution, or does it play another role? Why is *diri* allowed in constructions such as in (7), but ill-formed in (8)?
- (7) Anton mem-basuh diri. Anton meN-wash body 'Anton washes himself.'
- (8) *Anton mem-benci diri.

 Anton meN-hate body

 'Anton hates himself.'

This use of *diri* in (7) also raises the question of what precisely its role is in (9a). The prefix *ber*- in Indonesian, as mentioned previously, marks intransitive verbs. When bare *diri* is replaced with an internal argument such as *temannya* 'her friend', the result is ill-formed (9b). However, as illustrated in (9a), when this verb is combined with bare *diri* the result is well formed and has a reflexive interpretation. It seems, then, that *berhias* 'primp' is intrinsically reflexive since it still carries a reflexive meaning even without the bare *diri* (9c).

- (9) a. Anna ber-hias diri di depan kaca. Anna ber-primp body in front mirror 'Anna primps (herself) in front of the mirror.'
 - b. *Anna ber-hias teman-nya di depan kaca. Anna ber-primp friend.3sg.GEN in front mirror.' Anna primps her friend in front of the mirror.'
 - c. Anna ber-hias di depan kaca.

 Anna ber-primp in front mirror

 'Anna primps (herself) in front of the mirror.'

^{4.} Since we are interested in the broader pattern among the Malayic langages, we also include varieties of the following languages in our investigation: Palembang, Jambi, and Lampung. An element similar to diri is found in these languages as well. However, we found no significant differences among the overall patterns in these languages and their varieties. The data are presented in the Appendix.

But if so, what precisely could the role of *diri* be? These questions are discussed in detail in the following sections. The intrinsically reflexive verbs prefixed with *ber*- will be discussed separately in section 6.

This paper is organized as follows. After the current introductory part, section 2 provides some theoretical background on reflexivity. Section 3 briefly describes some relevant aspects of the affixal system in our language sample. Section 4 discusses the role of the element *diri*. This part systematically applies three diagnostics of bare *diri*, in order to determine whether it is an anaphor in an argument position or plays another role. These diagnostics comprise the availability of proxy readings, object comparison, and sloppy/strict readings in *only*-sentences. Section 5 assesses the status of the thematic roles when the element *diri* is used, by applying tests for agenthood and patienthood. Section 6 addresses the status of *diri* when it occurs with verbs carrying the prefix *ber*-. In section 7, we discuss to what extent the element *diri* is similar to simplex anaphors in other languages, such as *zich* in Dutch. Section 8 sums up the results.

- **2. REFLEXIVITY.** In order to prepare the ground for an analysis, we will first provide some theoretical background. Informally, we can define reflexivity as in (10):
- (10) A predicate is reflexive iff one of its arguments bears two of its thematic roles⁵

Crosslinguistically, we find a variety of means to express reflexivity (see Faltz 1985, Schladt 2000, or Dimitriadis and Everaert 2004, for extensive overviews). Some of these strategies preserve transitivity as for instance English (11a), with the *self*-morpheme acting as an explicit marker of reflexivity, whereas other strategies in fact involve detransitivization, as in (11b):

- (11) a. Bill washed himself.
 - b. Bill washed.

It is important to note that many languages use several strategies, as the English example above shows.

Discussing Oceanic languages, a subbranch of the Malayo-Polynesian family Moyse-Faurie (2008, 2017) distinguishes between what she refers to as middle situations (including *grooming* actions), encoded by intransitive or pseudopassive constructions and reflexive constructions, which are transitive and can be explicitly marked as reflexive. In Moyse-Faurie (2017), she focuses on transitive reflexives, presenting a typology of such markers in Oceanic languages with many examples illustrating the type of variation one finds. Her 2008 contribution includes a discussion of middle-based strategies.

The transitive strategies to express reflexivity are exemplified as follows. First, reflexive markers can occur as reflexive nouns, in the form of bound head

^{5.} See Jespersen (1933): When the subject and object are identical, we use for the latter a so-called reflexive pronoun, formed by means of *self*, for example, *I defend myself*.

nouns (obligatorily possessed nouns), such as body parts, as in Kwaio (12). Second, they can occur as reflexive modifiers. If so, their lexical origins in these languages are mostly transparent and can be derived from a word for 'alone', or from words for 'return', or 'again'. They may occur as preverbal particles as in Taba, West Uvean, and Caac (see 13) or as nominal adjuncts, as in Maori and Bislama (14), and in others as (verbal) adverbs as in East Uvean (15). The semantic domain of these markers is strictly delimited and does not overlap with the middle and the reciprocal domains.

(12) Kwaio (South East Solomon, Central Eastern Oceanic)
Ngai a aga-si-a **labe-na** naa ilonunu.
3sg.foc 3sg see-tr-3sg body-poss.3sg loc mirror
'He saw himself in the mirror.' (Keesing 1985:167)

(13) CAAC (New Caledonia, Extreme-North of the Mainland)

I jae wi i na cawek.

3SG AGAIN bite 3SG DEIC dog

'The dog is biting himself.' or

'The dog is biting him again.'

(14) BISLAMA

Hemi kilim hem wan.

3sg hit.tr 3sg alone

'He is hitting himself.'

'The top turns on itself.'

(Melanesian pidgin, Vanuatu)

(15) EAST UVEAN

'e mamilo te ipu iate ia **pe**.

NSPC turn ART TOP OBL 3SG ITN

Moyse-Faurie (2017) (Nuclear Polynesian)

(New Caledonia)

Moyse-Faurie (2008)

In the intransitive forms, one finds strategies with and without an additional reflexive marker. As an example of the latter, Moyse-Faurie (2008) presents (16) from Xârâcùù, which can be compared to English (11b). She presents (17) from Iaai as an example of the former.

(16) XÂRÂCÙÙ Nâ xii 1sg shave 'I am shaving.'

(17) IAAI (New Caledonia)

Ame ûg-i 3sg.imp pref-shave 'He is shaving.'

Moyse-Faurie (2008)

In Indonesian, the reflexive *diri-nya* is of the type 'possessed body-part noun' (like in (12)) and can be combined with the element *sendiri*, literally 'alone', which can function as a nominal adjunct and as an adverb.⁶ As an adverb

^{6.} As already mentioned, unlike *dirinya*, *dirinya sendiri* must be locally bound. See Kartono (2013).

(see 18b), however, it does not have a reflexivizing function by itself (contrary to what happens in some of the Oceanic languages Moyse-Faurie describes).

- (18) a. Dia mem-bebas-kan diri-nya (sendiri).

 3sg meN-free-kan body-3sg.gen self

 'He frees himself.'
 - B. Rita men-cuci sendiri tanpa ditemani suami-nya.
 Rita meN-wash alone without accompanied husband-3sg.GEN

 'Rita washed (the clothes) alone without being accompanied by her husband.'

NOT: 'Rita washed herself without being accompanied by her husband.'

Any general approach to reflexivity should be able to do justice to the variety of means that are used to represent it, but also take into account that not all ways to represent reflexivity have the same semantic effects, as we will see in detail. For an overview of the issues and an analysis of transitive reflexives, see Dimitriadis, Everaert, and Reuland (2017) and Reuland (2017). As indicated in section 1.2, in the present study, we focus on the role of *diri* in Indonesian, and we will explore whether reflexivization with *diri* in fact involves a detransitivizing strategy.

In developing our analysis, I will take my lead from Reinhart and Siloni (2005) and use the tests discussed in Dimitriadis and Everaert (2014) (see section 4), but our results will be framework independent.

Reinhart and Siloni (2005) provide a detailed study of reflexivization cross-linguistically. They argue that one of the possible operations yielding a reflexive interpretation is a lexical operation on a transitive verb by which the object argument is reduced, yielding a syntactically intransitive verb. By this operation, two of the verb's thematic roles (the agent role and the patient/theme role) are bundled into a complex [agent—theme] role, which is assigned to the remaining subject argument. The result is a form that is reflexive in the sense of (10). More formally, this operation is as given in (19):

(19) Reflexivization by bundling $[\theta_i][\theta_j] \rightarrow [\theta_i - \theta_j]$ where θ_i is the agent θ -role and θ_i is the patient/theme role.

The operation is illustrated in (20), using the transitive verb *wash* as its basis and yielding its intransitive reflexive form.

- (20) a. Verb entry: wash_{acc} (θ_1 , θ_2) (Here, θ_1 , and θ_2 stand for the agent and patient/theme roles, respectively. The subscript *acc* indicates that in its transitive use the verb *wash* assigns accusative case to its object.)
 - b. The output of the application of (19): wash $[\theta_1 \theta_2]$ (This step indicates the formation of a composite theta-role and the loss of the verb's ability to license accusative case.)
 - c. Syntactic output combined with a subject *Max*: $Max_{[Agent-Theme]}$ washed.

In English, lexical bundling is highly restricted—primarily to grooming verbs. In other languages, it is less so, but, as argued by Reinhart and Siloni, it is always limited to agent-theme verbs. In the case of English, the bundling operation simply eliminates the object; it is effected without any marking, in one fell swoop also eliminating the case assigning property of the verb, see also the case of Xârâcùù in (16). In many other languages, bundling by itself does not eliminate the verb's case assigning property, leaving a residual case. If so, some element must be inserted to check and eliminate this residual case. For instance, in Russian, bundling requires the suffix -sja. In this, it is similar to suffixes in a variety of other languages such as -ij(t) in Tegi Khanty (Volkova and Reuland 2014), -əlt in Meadow Mari (Volkova 2014, 2017), and possibly the prefix \hat{u} - in Iaai (17), and other prefixes in Oceanic languages reflecting the Proto-Oceanic form *paRi- (Moyse-Faurie 2008, 2017). Such elements—what Faltz (1985) calls verbal reflexives—signal that the basic transitive verb root has been detransitivized and has lost the capacity to assign accusative case, or otherwise license a direct object argument. The affixes -sja. -ij(t) and -əlt have all been shown not to be semantic arguments by the tests discussed by Dimitriadis and Everaert (2014).

In Dutch, bundling is accompanied by the obligatory presence of the simplex anaphor *zich*, which is only specified for person, but not for gender and number. Just like in the other languages mentioned, reflexivization with *zich* is restricted to a subset of agent–theme verbs, whereas subject experiencer verbs like *bewonderen* 'admire' verbs require the complex anaphor *zichzelf*, which does not affect transitivity; see (21).⁷

(21) a. Simplex anaphor

Winnie waste zich.

Winnie washed himself

'Winnie washed.'

b. Complex anaphor

Winnie bewonderde zichzelf/*zich.
Winnen admired himself
'Winnie admired himself.'

(Everaert 1986)

The tests discussed by Dimitriadis and Everaert (2014) show that Dutch *zich* in (21a) is not a semantic argument. As already shown in Everaert (1986), it absorbs structural accusative case. More specifically, Reinhart and Siloni (2005) argue that *zich* is inserted in the direct object position to check and eliminate the accusative case residue left by the bundling operation. So, *zich*, though not itself an affix, is similar to the affixes in other languages (discussed above) in that it signals that bundling has taken place. By absorbing the residual case feature, it makes sure that the derivation does not violate a syntactic principle.

Dimitriadis and Everaert (2014) also provide the tools to show that the thematic roles of the basic verb are preserved by the bundling operation; the effect

^{7.} See also, for instance, Meadow Mari (Volkova 2017) and Tegi Khanti (Volkova and Reuland 2014).

of bundling is that the two roles are together assigned as a complex to the single remaining argument without violating the theta criterion. Thus, such lexically reflexive verbs are syntactically intransitive indeed, but for the semantics both roles are still present, as we will see in detail in section 5.

The question is, then, how the Indonesian system fits in and more specifically, whether *diri* is an argumental reflexive, or just an element licensing the bundling operation, effectively a marker of intransitivity.

3. A BRIEF OVERVIEW OF AFFIXES IN INDONESIAN AND THE OTHER LANGUAGES IN THE SAMPLE. Indonesian has a variety of morphemes marking properties of argument structure. Prefixes such as *meN*-, *ber*-, and *di*-, and suffixes such as *-kan* and *-i* can modify a stem changing aspects of its meaning and determining the way in which it is inserted into the syntactic structure. The prefixes *meN*- and *ber*- are used in active verbs, whereas the prefix *di*- marks passive voice. For present purposes just a brief overview will suffice, and we will not discuss *di*- since it is not immediately relevant.

Most of the verbs with *diri* occur in active voice with the prefix *meN*-, with or without the suffix *-kan/-i*, as illustrated in (22) below. This active voice is mostly indicated by the prefix *meN*-, although it can also be realized in the form of bare verbs (without affixes). Other less frequent occurrences of *diri* such as with verbs carrying the prefix *ber*- are possible too. See example (28) for illustration.

All in all, verbs with *diri* are mainly found with the prefix *meN*-. This is due to the fact that this is the prefix that is typically associated with the class of agent—theme verbs, which allows bundling, as discussed in the previous section.

- (22) a. Anton mem-basuh diri setelah sampai di rumah. Anton meN-wash body after arrive in home 'Anton washed himself after arriving at home.'
 - b. Ringo men-(t)unjuk-kan diri di depan banyak orang. Ringo meN-display-kan body in front many people 'Ringo displayed himself in front of many people.'
- **3.1. AFFIXES** *meN-...-kan* **IN INDONESIAN.** There is an extensive literature on the status of the prefix *meN-*, see for instance, Sneddon (1996), who argues that *meN-* is an active-voice marker. Mintz (2002) also argues that the prefix *meN-* is an active marker indicating that the subject is an agent or actor that is responsible for carrying out an action. Arka (2000) states that this prefix signifies the actor subject mapping. As to the suffix *-kan*, Cole and Son (2002) argue that verbs with the suffix *-kan* always occur as transitives and that the suffix shows the properties of both a causative and an applicative. Furthermore, Arka (2000), who carried out a more detailed investigation of the suffix *-kan*, states that there are two types of causatives; the periphrastic causative in (23a) and the morphological causative in which the suffix *-kan* is included; see (23b).

- (23) Periphrastic causative
 - a. Ali mem-**buat** orang itu *datang*.

 Ali *meN*-make man the come

 'Ali made the man come.'

 Morphological causative
 - b. Ali men-datang-kan orang itu.

 Ali meN-come-CAUSE man the
 'Ali made the man come.'

(Arka 2000)

Arka (2000) further argues that both (23a) and (23b) have the same meaning, but they are not totally synonymous. The sentence (23a), for instance, may have a non-volitional causer, but (23b) cannot. Another suffix is the suffix -i which Arka describes as "homonymous" to -kan because it has similar functions as -kan that is as causative (24a,b).

- (24) a. Ia mem-*basah-kan* handuk-nya.
 3sg *meN*-wet-CAUSE towel-POSS
 - 'She made her towel wet/She moistened her towel.'
 - b. Ia mem-basah-i handuk-nya.
 3SG meN-wet-CAUSE towel-POSS
 'She made her towel wet/She moistened her towel.' (Arka 2000)

Alternatively, in the spirit of the system developed by Reinhart (2002) and Reinhart and Siloni (2005), Nuriah (2004) argues that *meN*- and *-kan* have nothing to do with thematic structures. She gives examples that some verbs like *buka* 'to open' can occur in the form of bare verbs (without affixes) with a transitive meaning (25a,b).

- (25) a. Anto buka toko.

 Anto open store

 'Anto opens a store.'
 - b. Anto mem-buka toko. Anto *meN*-open store 'Anto opens a store.'

(Nuriah 2004)

Nuriah (2004) argues that the prefix *meN*- is used to license a root to be the head of VP (which marks it as a verb), and also marks subject prominence when the meaning of the verb is eventive (25b).

Other researchers argue that the prefix *meN*- has a further function as a subject agreement marker. Willett (1993) argues that the prefix *meN*- in Malayic languages realizes the verbal agreement with the subject NP, that is, the external argument licensed in the specifier position of TP. In line with Willett, Cole et al. (1999/2000) argue that *meN*- represents an active-voice marker reflecting subject agreement. According to them, *meN*- is required in the active voice when the external argument is moved out of VP to the specifier of TP. However, *meN*- is omitted when the internal argument moves across the verb, for instance, to the specifier of a functional projection above the verb. See (26a,b) for illustration.

(26) a. Active voice

Ali **mem**-beri-kan hadiah itu kepada Fatimah Ali *meN*-give-*kan* gift the to Fatimah 'Ali gives the gift to Fatimah.'

b. Object voice

[Hadiah itu]_i Ali \emptyset -beri-kan t_i kepada Fatimah gift the Ali \emptyset -give-kan to Fatimah 'The gift, Ali gives to Fatimah/Ali gives the gift to Fatimah.'

Thus, in Indonesian and the other languages of our sample, the prefix *meN*- or its counterpart occurs when the agent NP is moved out of VP to the specifier of TP. Similarly, the null prefix is required when the internal argument is moved out of the VP.

- **3.2. THE PREFIX** *ber-* **IN INDONESIAN.** In Indonesian, the combination of verbs with *diri* is not restricted to verbs with the affixes *meN-...-kan*, but it is also possible with verbs carrying the prefix *ber-*. Traditionally, it is assumed that the prefix *ber-* marks intransitive verbs (see 27a), but there are a few verbs carrying the prefix *ber-* that can have an internal argument as well (27b).
- (27) a. Andi ber-lari. Andy ber-run 'Andy runs.'
 - b. Andi ber-buru binatang liar. Andy ber-hunt animal wild. 'Andy hunts wild animals.'

However, *ber*- allows the combination with *diri* only when it occurs alone, without the suffixes (-*kan*, -*an*, or -*i*). So far, the data we collected show that all the combinations of the prefix *ber*- with verbs plus the element *diri* function as intransitive verbs. This is illustrated in (28). When we replace the element *diri* in the constructions (28a,b) with an object, the result is ill-formed, as we already saw in (9b). See section 6 for further discussion.

- (28) a. Dia ber-hias diri di depan kaca setiap hari.

 3sG ber-primp body in front mirror every day

 'She primps herself in front of the mirror every day.'
 - b. *Dia ber-hias teman-nya di depan kaca setiap hari. 3sG ber-primp friend-3sg.GEN in front mirror every day.'
- **4. INVESTIGATING THE ROLE OF** *diri*. The question is, then, how to understand the role of *diri* in sentences such as (7) and (9a). Is it an anaphoric element in argument position, as in English *himself*, or is it a licenser of a lexical

^{8.} See the Appendix for an overview of the morphological markings of argument structure in the other languages of my sample. The overall patterns are quite similar; hence a separate discussion is not warranted.

operation along the lines of Reinhart and Siloni (2005)? The literature provides tests to answer this question. we will discuss how they apply in turn.

- **4.1. TESTING FOR ARGUMENTHOOD.** To find out whether the element *diri* is a thematic argument or plays another role, we applied three well-known tests for argumenthood, namely the tests for proxy readings (Jackendoff 1992), object comparison (Dimitriadis and Everaert 2014), and sloppy versus strict readings in *only*-sentences.
- **4.1.1. Proxy reading.** The first test is based on an observation in Jackendoff (1992) that there is a contrast between the sentences in (29):
- (29) a. {Upon a visit to a wax museum:} All of a sudden *Ringo started undressing himself*. (OK Ringo, OK Ringo's statue)
 - b. {Upon a visit to a wax museum:}
 All of a sudden *Ringo started undressing*. (OK Ringo, *Ringo's statue)

In (29a), the object of undressing can be understood as either Ringo or his statue (a "proxy" of Ringo). In (29b), the statue reading is not available. This is most straightforwardly accounted for if it is assumed that a statue reading is only available for syntactic objects, and in (29b) a real object argument is lacking.

This is in line with the analysis in Reinhart and Siloni (2005), summarized in section 2. As we saw, they argue that in this case the internal argument is reduced through bundling. Reflexivization by lexical bundling reduces the valence of the predicate. In English, it also eliminates structural case for the object, so no object is realized at all.

Languages use different elements to license bundling, as we saw. Volkova and Reuland (2014) discuss a wider range of reflexive strategies crosslinguistically and show that there is a systematic contrast between reflexive strategies that do and that do not allow a proxy reading. The latter include *zich*-reflexives in Dutch, *-sja*-reflexives in Russian, and other affixal strategies in Uralic languages like Tegi Khanty and Meadow Mari. Safir (2004) and Reuland and Winter (2009) show that a pronominal argument is in fact expected to allow a proxy reading (see also Reuland 2011). So the absence of proxy readings is an indication that a pronominal argument is lacking.

Example (30) shows the result of applying the proxy test to *diri*, with a context to facilitate the proxy interpretation. Here, the element *diri* is compared to the full reflexive *dirinya sendiri* and the half reflexive *dirinya*.

(30) a. {Upon a visit to Mme Tussauds wax museum,}
Ringo me-masuk-i museum yang di-penuh-i banyak
Ringo me-enter-i museum that PASS-full-i many
orang yang men-(t)unggu kedatangan-nya.
people that meN-wait arrival-3SG.GEN
'Ringo entered a museum which was full of people who were waiting

for his arrival.'

```
Kemudian, Ringo men-(t)ampil-kan diri-nya /
               Ringo
                      meN-display-kan
                                         body-3GEN /
   diri-nva
               sendiri.
               self
   body-3gen
   'Then, Ringo displayed himself.'
   (OK Ringo, OK Ringo's statue)
b. {Upon a visit to Mme Tussauds wax museum,}
   Ringo me-masuk-i museum yang di-penuh-i banyak
         me-enter-i
                       museum
                                that
                                       PASS-full-i
   orang yang men-(t)unggu kedatangan-nya.
   people that
                meN-wait
                               arrival-3sg.gen
   'Ringo entered a museum which was full of people who were waiting
   for his arrival.'
   Kemudian, Ringo men-(t)ampil-kan diri
               Ringo
                       meN-display-kan
                                         body
   'Then, Ringo displayed himself.'
   (OK Ringo, *Ringo's statue)
```

In (30a), the complex anaphoric elements *dirinya* and *dirinya sendiri* may refer to Ringo himself or to the statue as the image of Ringo. In (30b), however, no proxy reading is available. The element *diri* in *Ringo menampilkan diri* 'Ringo displayed himself' in (30b) does not allow the statue interpretation, and it can only be interpreted as the "real" Ringo.

Let us give one further example using the verb *membasuh* 'wash' in (31).

```
(31) a. {Upon a visit to Mme Tussaud wax museum,}
Ringo mem-basuh dirinya / dirinya sendiri.
Ringo meN-wash body-3GEN / body-3GEN self
'Ringo washed himself.'
(OK Ringo, OK Ringo's statue)
b. {Upon a visit to Mme Tussaud wax museum,}
Ringo mem-basuh diri
Ringo meN-wash body
'Ringo washed himself.'
(OK Ringo, *Ringo's statue)
```

Again, the proxy reading is not possible for the bare *diri* in (31b), but it is possible for *dirinya/dirinya sendiri* in (31a). In short, the complex anaphors *dirinya* and *dirinya sendiri* allow proxy readings. The element *diri*, however, does not, and thus fails a test for argument status.

Summarizing the result, bare *diri* does not yield a proxy reading. Given the arguments in Safir (2004) and Reuland and Winter (2009) a pronominal argument is expected to allow a proxy reading. The absence of such a reading, then, supports the hypothesis that *diri* does not qualify as an argument. The same applies to the counterparts of *diri* in the other languages discussed.⁹

^{9.} In the other languages of my sample, the availability of proxy readings follows the same pattern. See the Appendix for the facts.

4.1.2. Object comparison. Another test for argumenthood is provided by object comparison, as discussed by Dimitriadis and Everaert (2014:255). In order to have an object comparison reading, a verb requires two arguments to be compared. If only one argument is available, an object comparison reading should be absent.

Let us illustrate the test on the basis of Dutch. As is shown by the contrast in (32), the complex reflexive *zichzelf* in Dutch allows object comparison (32a), whereas the simplex anaphor *zich* does not allow it (32b) (here and elsewhere strikethrough is used to represent a structure that is silent):

- (32) a. Peter verwondt zichzelf vaker dan haar.
 Peter injures REFL more.often than her.ACC
 - = Peter injures REFL more.often than Peter injures her.
 - 'Peter injures himself more often than he injures her.'
 - b. *Peter wast zich vaker dan haar.

 Peter washes REFL more.often than her.ACC
 - = Peter washes REFL more.often than Peter washes her.
 - 'Peter washes himself more often than he washes her.'

Like in section 4.1.1, Dutch *zich* behaves differently from *zichzelf*. We see that *zichzelf* in (32b) allows object comparison whereas with *zich*, object comparison is impossible. In English, we see the same pattern with *wash himself* versus bare *wash*. In the latter case, object comparison is not possible, as illustrated in (33) and (34), while subject comparison is available in both cases:

- (33) John washes himself more often than George.
 - a. Subject comparison, strict or sloppy
 John washes himself more often than George washes John/himself.
 - b. Object comparison

John washes himself more often than John washes George.

- (34) John washes more often than George.
 - a. Subject comparison

John washes himself more often than George washes himself.

b. Object comparison

*John washes himself more often than John washes George.

(Dimitriadis and Everaert 2014:254)

In Indonesian, the reflexives *dirinya* and *dirinya sendiri* qualify as arguments, hence are expected to allow object comparison, which they do, as illustrated in (35). However, with bare *diri* object comparison is not allowed (36).

- (35) Budi mencubit diri-nya / dirinya sendiri lebih sering Budi meN-pinch body-3GEN / body-3GEN self more often daripada Anto.
 - a. Subject comparison, strict or sloppy
 Budi pinched himself more often than Anto pinched Budi/himself.
 - b. **Object comparison**Budi pinched himself more often than Budi pinched Anto.

- (36) Susi mem-basuh diri lebih sering daripada Anna. Susi meN-wash body more often than Anna
 - Subject comparison
 Susi washes herself more often than Anna washes herself.
 - b. Object comparison
 - *Susi washes herself more often than Susi washes Anna.

This is, then, a further indication that diri is not an argument in Indonesian.

- **4.1.3. Strict and sloppy readings in** *only***-sentences.** Another test for argumenthood is that of checking for sloppy and strict readings in *only*-sentences. To see how this is relevant, consider sentences like (37).
- (37) Only John washes himself today.

The contrast between strict and sloppy readings involves the computation of alternatives:

- **4.1.3.1. The sloppy reading.** Consider the set of the people who might potentially wash themselves. This set is given by the expression in (38):
- (38) λx (x washes x)

What (37) expresses is that there is no alternative to John as a member of this set.

(39) There are no alternatives to John as an argument of $(\lambda x \ (x \text{ washes } x \text{ today}))$

If one were to consider Bill, one would find that Bill does not wash himself today. Example (39) could be falsified by an individual that could truthfully say, "No, I also washed myself today!"

- **4.1.3.2. The strict reading.** The strict reading is not about the set of self-washers, but about the set of John-washers:
- (40) λx (x washes John)

Under this reading, (37) is interpreted as (41):

(41) There are no alternatives to John as the subject argument of λx (x washes John))

Example (41) could be falsified by an individual that could truthfully say, "No, I also washed John today!" The interesting contrast is that (42) only allows the sloppy reading.

(42) Only John washed today.

The same applies to Dutch zich in (43):

(43) Alleen Jan waste zich vandaag.
Only John washed himself today
'Only John washed today.'

Now consider the sentence (44) in Indonesian.

```
(44) Hanya Joni yang mem-basuh diri-nya / Only John that meN-wash body-3sg.gen / diri-nya sendiri body-3sg.gen self 'Only John washed himself today.'
```

As in English, the complex anaphors *dirinya* and *dirinya sendiri* also allow both strict and sloppy readings as in (44).¹⁰ If we give a tentative question 'Who washed John today?', then we have 'Bill did not wash John', 'Jim did not wash John', and 'Only John washed John today'. In (44), the object argument John can be fixed regardless who is the John-washer. Thus, the object argument gets bound to John, and the interpretation is strict. The same applies if we have *dirinya* instead of *dirinya sendiri*. In (44), both anaphors also yield a sloppy interpretation since Bill, Jim, or anyone can be the set of both the washer and the "washee."

Now consider the sentence in (45) with the bare diri.

```
(45) Hanya Joni yang mem-basuh diri.
Only John that meN-wash body
'Only John washed today.'
```

As defined, we have the sloppy reading when we consider the set of people who are potentially self-washers. So, in (45) with the bare *diri*, we can infer another question 'who washed today?' Then, we have 'Bill did not wash today', 'Jim did not wash today', and 'Only John washed today'. Thus we consider the set of self-washers, which potentially includes Bill, Jim, and so on. But what (45) expresses is that the set contains just John. This is how (45) yields a sloppy reading, while the strict one is not allowed.

To sum up, unlike *dirinya* and *dirinya sendiri*, *diri* and its counterparts only allow the sloppy interpretation in *only*-sentences have no statue reading (Jackendoff 1992), and do not allow object comparison. This indicates that *diri* is not a thematic argument. The question is then what actually its role is. This question is addressed in the next section.

4.2. THE ROLE OF *diri*. We take it to be established that *diri*, like its counterparts in the other languages of our sample, is not an independent thematic argument. This is further supported by the fact that *diri* can occur with verbs with the *ber*-prefix such as *berhias* 'primp'. Such verbs do not allow direct objects as we saw in section 1, and do not allow the reflexives *dirinya* and *dirinya sendiri* either, as illustrated in (46).

```
(46) a. Anna ber-hias diri.
Anna ber-primp body
'Anna primps herself.'
```

^{10.} For sake of completeness, note that in sentences with VP-ellipsis *dirinya* allows both sloppy and strict readings but *dirinya sendiri*, like *diri*, only has a sloppy interpretation.

- b. Anna ber-hias *diri-nya*.

 Anna *ber*-primp body-3sg.gen

 'Anna primps herself.'
- c. *Anna ber-hias diri-nya sendiri.
 Anna ber-primp body-3sg.gen self
 'Anna primps herself.'

This will indeed follow if *ber-hias* and similar verbs are lexical reflexives and *diri* is just an element without argument status that accompanies *ber-*. As already indicated in section 6, we will discuss the occurrence of *diri* with these verbs in more detail.

On the basis of what we have seen so far, *diri* could be a general detransitivizing element. It could also be an element specifically licensing a lexical bundling operation, along the lines of Reinhart and Siloni (2005). The latter option is supported by the fact that it is limited to a lexically specified group of verbs. The restriction on *diri* just instantiates Reinhart and Siloni's generalization that bundling in the lexicon is limited to (a subset of) agent—theme verb, like in (47).

As we saw in section 1.1, *diri* is allowed with verbs like *membasuh* 'wash' but not with verbs *membenci* 'hate', as illustrated in (47) and (48).

- (47) Anna mem-basuh diri. Anna meN-wash body 'Anna washes herself.'
- (48) *Anna mem-benci diri. Anna meN-hate body 'Anna hates herself.'

If *diri* is indeed an element that licenses lexical bundling, this contrast follows. If *diri* is not just a detransitivizing element, but involved in the licensing of lexical bundling this also entails that the components of the bundled role will still be visible to the semantics. In section 5, we will show how this consequence can be subject to the test.

5. HOW DO WE KNOW THAT THERE IS BUNDLING? As noted at the end of section 4.2, if *diri* is not just a detransitivizing element, but involved in the licensing of lexical bundling, this entails that the components of the bundled role will still be visible to the interpretation system. We will now show how this prediction can be tested.

Dimitriadis and Everaert (2014) develop a test to identify the presence of agents and themes/patients regardless of their syntactic position. We apply the test to see whether these roles are active in reflexive predicates with *diri*.

- (49) a. John shaved carefully.
 - b. Shave!
 - c. Mary persuaded John to shave.

(Dimitriadis and Everaert 2014:261)

They argue that the adverb *carefully* targets agents, not subjects (49a, 50a); an unaccusative as in (50b) lacks an agent; hence, modification by *carefully* is ruled out. A Dutch example of an agent-oriented adverb is *opzettelijk* 'intentionally', as in (51a), not allowed in the case of an experiencer-subject verb like *lijden* 'to suffer' as in (51b).

- (50) a. John threw the rock carefully.
 - b. *John died carefully.
- (51) a. Jan gooide de kei opzettelijk. 'Jan threw the rock intentionally.'
 - b. *Jan leed opzettelijk'Jan suffered intentionally.' (Dimitriadis and Everaert 2014)

By using these agent-oriented adverbs, we can test whether reflexive verbs marked by *diri* are also agentive.

(52) Ringo mem-basuh diri dengan hati-hati Ringo meN-basuh body with care 'Ringo washes himself carefully.'

As we can see, the result is well formed. This indicates that these reflexive predicates are indeed agentive.

- **5.1. TESTING FOR PATIENT.** Dimitriadis and Everaert (2014) also provide a test for the presence of the patient/theme role in reflexive verbs. Some adverbs require a syntactically accessible theme, for instance, *completely* and *painfully*. These can be used to demonstrate the presence of a theme role rather than just an internal argument. This is illustrated in (53).
- (53) a. John sang (the song).
 - b. John sang the song completely.
 - c. John baked (the cake).
 - d. *John sang/baked completely. (Dimitriadis and Everaert 2014:263)

Example (53d) shows that the adverb *completely* is not compatible with object drop. It indicates that the theme role in this sentence is not syntactically accessible, as the adverb *completely* requires. The adverb *completely* is only possible when the theme role is realized on the object.

This test will now be applied to verbs occurring with *diri*. Reinhart and Siloni argue that as an effect of bundling the theme role ends up on the sole remaining argument. If *diri* licenses bundling rather than just being a detransitivizer the theme role should still be accessible. Hence, theme-oriented adverbs such as *completely, partly,* or *painfully* should be licit. The relevant examples are given in (54).

(54) Anton mem-basuh diri *secara menyeluruh*. Anton *meN*-basuh body with completeness 'Anton washes himself completely.'

In (54), a theme-oriented adverb, *secara menyeluruh* 'completely' is added. The resulting sentence is grammatical. The same result obtains with the adverb *seutuhnya* 'completely'. So, despite the fact that *diri* is not an independent thematic argument (cf. section 4.2), the theme role is still accessible on the sole remaining argument *Anton*.

The grammaticality of these sentences shows that in all these cases the theme role is accessible. The fact that both the agent role and the theme are accessible in the construction with *diri* shows that it marks a bundling operation rather than simple detransitivization. As discussed in section 2, Reinhart and Siloni (2005) argue that elements such as Dutch *zich* license the bundling operation by checking a residual case. The question is then how this carries over to languages like Indonesian, which lack morphologically expressed case? If such languages can still be argued to have "abstract case" this proposal carries over to *diri* straightforwardly. However, even if the difference between case marking and non-case marking languages is more fundamental, the latter type of language must have some feature licensing arguments, and *diri* will have the role of checking such a feature. As often, more research will be needed.

6. THE DISTRIBUTION OF VERBS WITH THE PREFIX *ber-* **PLUS** *diri* **AND ITS IMPLICATIONS.** Like many languages Indonesian has a class of inherently reflexive verbs; that is, verbs with a reflexive form that do not have a nonreflexive counterpart. Sometimes such verbs are reflexive in form only, such as English *behave* as in *Percy behaved himself.* In other cases, there is a core sense of reflexivity that can be brought out by slight change in the form. For instance, the Dutch verb *zich schamen* 'be ashamed' does not allow a direct object. So we have *Cindy schaamt zich* (55a), but not *Cindy schaamt Don* (55b).

(55) Dutch

- a. Cindy schaamt zich.Cindy be.ashamed herself 'Cindy is ashamed.'
- b. *Cindy schaamt Don. Cindy be.ashamed Don
- c. Cindy schaamt zich voor Don. Cindy be.ashamed herself for Don 'Cindy is ashamed of Don.'
- d. Cindy schaamt zich voor zichself. Cindy be.ashamed herself for herself 'Cindy is ashamed of herself.'

However, we do have *Cindy schaamt zich voor Don* 'Cindy is ashamed of Don' (55c), alongside *Cindy schaamt zich voor zichzelf* 'Cindy is ashamed of herself' (55d). Indonesian has a class of verbs that occur with *diri* but lack a transitive counterpart. The question is, then, whether these verbs are reflexive only in form, or also in terms of their interpretation. In this section, we will focus on verbs with the prefix *ber*-.

In Indonesian, the use of *diri* with the verb 'to primp' is optional.¹¹ This is illustrated in (56).

- (56) a. Dia ber-hias (diri) di depan kaca setiap hari.

 3sg ber-primp body in front mirror every day.

 'She primps herself in front of the mirror every day.'
 - b. Dia ber-solek (diri) di depan kaca setiap hari.

 3sg ber-primp body in front mirror every day.'

 'She primps herself in front of the mirror every day.'
 - c. Dia ber-dandan (diri) di depan kaca setiap hari.

 3sg ber-primp body in front mirror every day.'

 'She primps herself in front of the mirror every day.'

For some verbs with the prefix *ber*-, the occurrence of *diri* is obligatory; see (57).

- (57) a. Dia ber-bangga *(diri) atas keberhasilan-nya. 3sg ber-proud body on success-3sg.gen 'He makes himself proud of his success.'
 - b. Dia ber-sombong *(diri) atas keberhasilan-nya.

 3sg ber-proud body on success-3sg.GEN

 'He makes himself proud of his success.'
 - c. Ribuan masyarakat Batam ber-hibur *(diri) di thousand society Batam ber-entertain body in tengah jalan raya kawasan Nagoya, middle street big area Nagoya Jum'at (18/8) malam.

'Thousands of people of Batam entertained themselves in the middle of the principal street in the area of Nagoya, Friday night (18/8).'

To understand the type of contribution *diri* makes, let us now turn to the thematic structure of *ber*-verbs with *diri*, by applying the tests for the presence of the agent and theme roles in section 4.2. In fact both roles are visible, as shown in (58).

- (58) a. Anna ber-hias diri dengan sengaja.

 Anna ber-primp body with intention

 'Anna primps herself intentionally.'
 - b. Anna ber-hias diri seutuhnya.
 Anna ber-primp body completely.
 'Anna primps herself completely.'

The adverb *dengan sengaja* 'intentionally' is well formed in (58a), as is *dengan hati-hati* 'carefully', indicating that the agent role is visible. The adverb *seutuhnya* 'completely' is possible in (58b), and indicates that the theme role

^{11.} In both dialects of Jambi, the element *diri* is also optional for this verb, whereas in Palembang, Lampung dialects A and O, *diri* cannot occur after the verb 'primp'. The data are presented in the Appendix.

is visible. Thus, *ber-hias* is reflexive not only in form but also in interpretation. The same applies to its counterparts in the other languages of my sample.

To summarize the results of this overview, we found some formal differences in the use of *diri* with verbs prefixed with *ber*- and its counterparts, but no differences in argument structure. For some verbs *diri* is optional, for others obligatory. In Palembang and Lampung, respondents report that the combination of verbs with the prefix *ber*- plus *diri* is not acceptable. Clearly, *diri* is nowhere argumental. The presence of this crosslinguistic variation and the fact that the presence of *diri* can be optional, as in (56), without an effect on interpretation indicates that *diri* itself is not the source of the reflexive interpretation.

The type of variation we found is best understood if *diri* is an element that licenses an operation on argument structure. Subject to idiosyncratic properties, lexical detransitivization may leave a syntactic residue that requires *diri* as a type of expletive object. So *diri* is present to meet a formal requirement. In this it is similar to a nominal subject expletive like *es* in German *Es gab einen Mann* 'There was a man'. The optionality of *diri* in the case of *ber*-prefixed verbs is comparable to what we see in English as the contrast between, for instance, *Don behaved badly* and *Don behaved himself badly*.

7. THE POSITION OF *diri*. The question is, then, whether we can determine its structural position more precisely. There is one aspect that has not been discussed in the previous section, namely the position of *diri* in the sentence structure. In this section, we will see whether *diri* as a bare noun behaves like Dutch *zich* or like similar elements that license reflexivity in other languages in the world.

In some languages, for instance Russian, the element licensing reflexivity is realized as a verbal affix. In others, for instance Dutch, it is realized as an independent element, which can be separated from the verb by other constituents. Example (59b) shows that *zich* can occur directly before the verb (Dutch being an SOV language) without any intervention of other elements, but it can also be separated by other elements in the construction, such as the adverb *gisteren* 'yesterday' in (59a). A subordinate clause like (59c) shows this even more clearly.

- (59) Dutch
 - a. **Hij** heeft *zich* gisteren *gewassen*.

 3sG has himself yesterday washed
 'He washed himself yesterday.'
 - b. Gisteren heeft **hij** zich gewassen. Yesterday has 3sG himself washed 'He washed himself yesterday.'
 - c. Ik zag dat **Jan zich** gisteren door Marie
 1sg saw that John himself yesterday by Marie
 helemaal liet *beetnemen*.
 completely let deceive

'I saw that John was completely deceived by Marie yesterday.'

Is it possible for *diri* to be separated from the verb too? In fact, *diri* cannot be separated from the verb by any elements: it must appear and attach directly to the right of the verb. ¹² However, the reflexives *dirinya* and *dirinya sendiri* do allow the intervention of other material. This is illustrated in (60).

- (60) a. Anton **mati-matian** mem-pertahan-kan diri dari Anton completely meN-defend-kan body from serangan itu.
 - 'Anton completely defended himself from the attack.'
 - b. *Anton *mem-pertahan-kan* **mati-matian** diri dari Anton *meN*-defend-*kan* completely body from serangan itu.

 attack that
 - 'Anton completely defended himself from the attack.'
 - c. Anton mem-pertahan-kan mati-matian diri-nya
 Anton meN-defend-kan completely body-3sg.GEN
 diri-nya sendiri dari serangan itu.
 body-3sg.GEN self from attack that

 'Anton completely defended himself from the attack.'

While *zich* in Dutch can be separated from the verb, *diri* must attach directly after the verb. Cases, as in (61), where *diri* is topicalized are not possible either.

- (61) a. Anton mem-pertahan-kan diri dari serangan itu. Anton meN-defend-kan body from attack that 'Anton defended himself from the attack.'
 - b. *Diri, Anton Ø-pertahan-kan dari serangan itu.
 body Anton Ø-defend-kan from attack that
 'Anton defended himself from the attack.'

Wherever the verb moves in the structure, *diri* moves along and needs to be adjacent to the verb (62).

- (62) a. Si Anton ber-sombong diri bila bertemu ART Anton ber-arrogant body if meeting teman-teman-nya.
 - 'Anton makes himself proud every time he meets his friends.'
 - b. Ber-sombong diri Si Anton bila ber-temu ber-arrogant body ART Anton if meeting ber-arrogant teman-teman-nya. friend-DUPL-3SG.GEN

'Anton makes himself proud every time he meets his friends.'

Having the appearance of a free morpheme, it bears some similarity to Dutch *zich*, but unlike the latter it cannot be separated from the verb. Nor does it occur as an anaphor in PPs, like *zich* does. Our proposal is that *diri* is indeed

^{12.} See the Appendix for the behavior of the counterparts of *diri* in the other languages of my sample.

like *zich* in that it is inserted as a nominal element in object position. Its role is the same in that it checks a residue of transitivity (case or equivalent, see section 5). The difference, we propose, is that unlike *zich* it is incorporated into the verb. Being a bare noun without determiner structure, it is referentially defective, hence is expected to allow incorporation. This proposal is supported by the fact that Indonesian has been independently shown to manifest a process of noun-incorporation; see Myhill (1988) and Beavers (2019). This makes the position of bare *diri* in (63a) parallel to that of *tangan/kaki/mata/muka/mulut* in (63c).

- (63) a. Gadis itu ber-cuci diri(=*nya).

 girl that MV-wash REFL(=*3SG)

 'The girl washed herself.'
 - b. Gadis itu ber-cuci (*dengan cepat) diri.
 girl that MV-wash with quick REFL
 'The girl washed herself quickly.'
 - c. Gadis itu ber-cuci (*dengan cepat) tangan /
 girl that MV-wash with quick hand
 kaki / mata / muka / mulut.
 leg eye face mouth

'The girl washed (her) hand/leg/eye/face/mouth quickly.'

Based on Beavers (2019)

Coming back to the discussion of the role of *diri* in the beginning of section 2, we can conclude that *diri* is not an adverbial reflexive marker in the sense of Moyse-Faurie's typology, nor it is a true body-part reflexive. Its role is more like that of the affixal reflexive markers, discussed in section 2, but not its provenance. In a nutshell, then, Moyse-Faurie's typology of reflexive and middle marking must be enriched with the option of a bare noun, which is inserted in object position, incorporated into the verb, and which licenses detransitivization.

8. SUMMARY AND CONCLUSION. This paper addresses the status of the reflexive marker *diri* in Indonesian and its counterparts in a number of related languages. Applying a number of diagnostics for argumenthood, we show that *diri* is not an argument: it has no statue reading (Jackendoff 1992), it has only sloppy readings in *only*-sentences and object comparison is impossible. The evidence gathered so far indicates that the verbs allowing *diri* are all agent—theme verbs. We propose that the role of *diri* is that of an element licensing a lexical bundling operation in the sense of Reinhart and Siloni (2005). Under this operation, the internal argument of the predicate is reduced, and the agent and theme roles are bundled into one complex agent—theme role, and assigned to the remaining argument. Thus, reflexive verbs involving the element *diri* are syntactically intransitive; they project a single argument, namely the external one. To determine whether the agent and patient/theme roles are still accessible in verbs with *diri*, diagnostics using adverbs that target both agents and patients/themes are applied. As the tests show, agent and patient roles are indeed present in verbs

with *diri*, in line with Reinhart and Siloni (2005). In short, *diri* is not an argument but licenses a lexical bundling operation.

APPENDIX

- **A.1. VERBS PLUS** *diri* **IN PALEMBANG**, **JAMBI**, **AND LAMPUNG**. In addition to Indonesian, we included in our research two dialects of Palembang, two dialects of Jambi, and two dialects of Lampung (henceforth the *(language) sample)*. An element similar to *diri* is found in these languages as well. The patterns found are highly similar to those for Indonesian; hence we did not include these data in the main text. Of course, the fact itself that these patterns are so similar is significant. For this reason, we present them here.
- **A.2. AGENT–THEME VERBS.** The restriction of reflexivization marked by *diri* to a subset of the class of agent–theme verbs also applies to the other languages in the sample: Palembang (64), City Jambi (65), and the Lampung dialects A/Api (66) and O/Nyo (67).
- (64) Palembang
 - Budak-budak tu pacak jago diri. kid-DUPL that can protect body
 'The children can protect themselves.'
 - b. Prabowo ny-(c)alon-ke diri di Pilpres 2019.
 Prabowo ny-candidate-ke body in presidential election 2019
 'Prabowo candidates himself in the presidential election 2019.'
 - c. *Dio ny-(j)ingok diri di cermin.

 3sg ny-see body in mirror

 (Sha assa hamalf in the assistant?
 - 'She sees herself in the mirror.'
 - d. *Anton benci diri.

 Anto hate body

 'Anton hates himself.'
 - e. *Anton seneng diri.
 Anto love body
 'Anto loves himself.'
- (65) CITY JAMBI
 - a. Dio ny-(s)elamat-in diri dari serangan babi hutan.

 3sG ny-save-in body from attack pig forest

 'He saved himself from the attack of wild boar.'
 - b. Prabowo ny-(c)alon-in diri di Pilpres 2019.
 Prabowo ny-candidate-in body in presidential election 2019.
 'Prabowo candidates himself in the presidential election 2019.'
 - c. *Dio n-(t)engok diri di kaco.

 3SG n-see body in mirror

 'She sees herself in the mirror.'
 - d. *Anto m-(p)uji diri.

 Anto m-praise body

 'Anto praised himself.'

e. *Anto benci diri. hate body Anto 'Anto hates himself.'

- (66)LAMPUNG dialect A
 - a. Rita m-basuh dikhi pas mulang kerja. Rita m-wash body when return work 'Rita washed herself after returning from work.'
 - b. Prabowo ny-(c)alon-ko dikhi di Pilpres 2019

ny-candidate-ko body in presidential election 2019 'Prabowo candidates himself in the presidential election 2019.'

- c. *Anto cinta dikhi. Anto love body 'Anto loves himself.'
- d. *Anto meny-(s)uwoh dikhi. meN-hate

'Anto hates himself.'

- (67)LAMPUNG dialect O
 - a. Io belajar pecak alah hago nge-jago dighei. martial.art because want ng-defend body 'He learns martial art because he wants to protect himself.'
 - b. Prabowo ny-(c)alon-ken dighei alah ny-candidate-ken body Prabowo hago nutup Pilpres 2019 follow presidential.election 2019 'Prabowo candidates himself because he will follow the presidential election 2019.'
 - c. *Anton buguh dighei. love Anton body 'Anton loves himself.'
 - d. *Anton bejou dighei. hate Anton body 'Anto hates himself.'

As shown in (64)–(67), Palembang and Jambi have diri, the same form as Indonesian, whereas the Lampung dialects A and O have the elements dikhi and dighei, respectively.

A.3. MORPHOLOGICAL MARKING OF ARGUMENT STRUCTURE.

Palembang, Jambi, and Lampung also have various forms of morphological marking of argument structure, including affixes similar in function to meN-...-kan in Indonesian.

(68) Palembang

Anton m-(p)akso-ke diri untuk pegi ke Jakarta. go Anton *m*-force-*ke* body to 'Anton forced himself to go to Jakarta.'

Dio mem-pertahan-kan diri dari serangan tawon. 3sg *meN*-defend-*kan* body from attack 'He defended himself from the bee's attack.'

(70) LAMPUNG dialect O

Evi mem-pertahan-ken dighei jak gupungan serem.

Evi *meN*-defend-*ken* body from attack ant

'Evi defends herself from the ants' attack.'

A.4. PREFIXES SIMILAR TO ber- IN THE OTHER LANGUAGES **OF OUR SAMPLE.** Prefixes that are similar to ber- are also found in the other languages of our sample. However, only in City Jambi and Village Jambi did we find verbs with this prefix in combination with diri. In City Jambi and Village Jambi, this prefix is realized as be-; see (71) for the examples.

(71) a. CITY JAMBI

Dio be-banggo diri karena jadi

body because become police 3sg be-proud

'He makes himself proud because he becomes a policeman.'

b. VILLAGE JAMBI

Rita be-hias diri sebelum pegi ke pesta.

Rita be-primp body before going to party

'Rita primps herself before going to the party.'

Verbs carrying the prefix be- in City Jambi (71a) and Village Jambi (71b) are all intransitive. When diri in the examples (71a,b) is replaced by an argument, the results are ill-formed, as in Indonesian.

A.5. THE AVAILABILITY OF PROXY READINGS. This section reports on the availability of proxy readings for the counterparts of diri in Palembang, Jambi, and Lampung. The examples below give the same result: only complex anaphoric elements similar to Indonesian dirinya and dirinya sendiri yield proxy readings.

(72)PALEMBANG

a. {Upon a visit to Mme Tussaud wax museum}

Ringo masuk ke museum di dalemnyo banyak uwong yang lagi nunggu kedatangannyo.

'Ringo entered a museum which was full of people who were waiting for his arrival.'

Selanjutnyo, Ringo n-(t)ampil-ke diri-nyo / Ringo *n*-display-*ke* body-3GEN / diri-nvo dewek.

body-3GEN self

Then, Ringo displayed himself.

(OKRingo, OKRingo's statue)

b. {Upon a visit to Mme Tussaud wax museum}

Ringo masuk ke museum di dalemnyo banyak uwong yang lagi nunggu kedatangannyo.

'Ringo entered a museum which was full of people who were waiting for his arrival.'

Selanjutnyo, Ringo n-(t)ampil-ke *diri*. Then, Ringo *n*-display-*ke* body Then, Ringo displayed himself. (OKRingo, *Ringo's statue)

(73) CITY JAMBI

a. {Upon a visit to Mme Tussaud wax museum,}

Ringo masuk ke dalam museum yang dipenuhi banyak orang yg lagi nunggu kedatangannyo.

'Ringo entered a museum which was full of people who were waiting for his arrival.'

```
Kemudian, Ringo n-(t)ampil-in diri-nyo / then, Ringo n-display-in body-3GEN / diri-nyo dewek. body-3GEN self 'Then, Ringo displayed himself.'
```

(OK Ringo, OK Ringo's statue)

b. {Upon a visit to Mme Tussaud wax museum,}

Ringo masuk ke dalam museum yang dipenuhi banyak orang yg lagi nunggu kedatangannyo.

'Ringo entered a museum which was full of people who were waiting for his arrival.'

```
Kemudian, Ringo n-(t)ampil-in diri. then Ringo n-display-in body 'Then, Ringo displayed himself.' (OK Ringo, *Ringo's statue)
```

(74) LAMPUNG dialect A

a. {Upon a visit to Mme Tussaud wax museum,}

Ringo kuruk museum sae lamon jelma lagi nunggu ia ratong.

'Ringo entered a museum which was full of people who were waiting for his arrival.'

```
Tekhus, Ringo n-(t)unjuk-ko dikhi-ni / hen Ringo n-display-ko body-3sg.gen / dikhi-ni tenggalan.
body-3sg.gen self 'Then, Ringo displayed himself.'
```

(OK Ringo, OK Ringo's statue)

b. {Upon a visit to Mme Tussaud wax museum,}

Ringo kuruk museum sae lamon jelma lagi nunggu ia ratong.

'Ringo entered a museum which was full of people who were waiting for his arrival.'

```
Tekhus, Ringo n-(t)unjuk-ko dikhi. then Ringo n-display-ko body 'Then, Ringo displayed himself.' (OK Ringo, *Ringo's statue)
```

(75) LAMPUNG dialect O

a. {Upon a visit to Mme Tussaud wax museum,}

Ringo kuruk museum sae lamon jelma lagi nunggu ia ratong.

'Ringo entered a museum which was full of people who were waiting for his arrival.'

```
Tekhus, Ringo ny-(s)uluk-ken dighei-no / hen Ringo ny-display-ken body-3sg.gen / dighei-no sayan. body-3sg.gen self 'Then, Ringo displayed himself.'
```

rnen, Knigo displayed innisen

(OK Ringo, OK Ringo's statue)

b. {Upon a visit to Mme Tussaud wax museum,}

Ringo kuruk museum sae lamon jelma lagi nunggu ia ratong.

'Ringo entered a museum which was full of people who were waiting for his arrival.'

```
Tekhus, Ringo ny-(s)uluk-ken dighei. then Ringo ny-display-ken body 'Then, Ringo displayed himself.' (OK Ringo, *Ringo's statue)
```

A.6. OBJECT COMPARISON. The availability of object comparison with verbs marked by *diri* in Palembang, Jambi, and Lampung is illustrated in (76)–(83).

(76) Palembang

```
Budi ny-ubit diri-nyo / diri-nyo dewek lebih
Budi ny-pinch body-3GEN / body-3GEN self more
sering daripado Anto.
often than Anto
```

a. Subject comparison, strict or sloppy

Budi pinched himself more than Anto pinched Budi/himself.

b. Object comparison

Budi pinched himself more than Budi pinched Anto.

(77) Susi n-(t)ampil-ke diri di panggung lebih sering Susi n-display-ke body in stage more often daripado Anna.

a. Subject comparison

Susi displayed herself on the stage more than Anna displayed herself.

b. Object comparison

*Susi displayed herself more than Susi displayed Anna.

(78) CITY JAMBI

```
Budi ny-(c)ubit-in diri-nyo / diri-nyo dewek lebih Budi ny-pinch-in body-3GEN / body-3GEN self more sering daripado Anto.

often than Anto
```

a. Subject comparison, strict or sloppy

Budi pinched himself more than Anto pinched Budi/himself.

b. Object comparison

Budi pinched himself more than Budi pinched Anto.

- (79) Susi nge-basuh diri lebih sering daripado Anna.
 Susi ng-wash body more often than Anna
 - a. Subject comparison

Susi washed herself more than Anna washed herself.

b. Object comparison

*Susi washed herself more than Susi washed Anna.

(80) LAMPUNG dialect A

Budi ny-(c)ubit-in dikhi-ni / dikhi-ni tenggalan Budi ny-pinch-in body-3GEN / body-3GEN self jak risokni jak Anto. more often than Anto

a. Subject comparison, strict or sloppy

Budi pinched himself more than Anto pinched Budi/himself.

b. Object comparison

Budi pinched himself more than Budi pinched Anto.

- (81) Susi nge-basuh dikhi lebih sering daripado Anna. Susi ng-wash body more often than Anna
 - a. Subject comparison

Susi washed herself more than Anna washed herself.

b. Object comparison

*Susi washed herself more than Susi washed Anna.

(82) LAMPUNG dialect O

Budi ny-(c)ubik dighei-no / dighei-no sayan lebih Budi ny-pinch body-3GEN / body-3GEN self more gesok jak Anto.

a. Subject comparison, strict or sloppy

Budi pinched himself more than Anto pinched Budi/himself.

b. Object comparison

Budi pinched himself more than Budi pinched Anto.

- (83) Susi ny-uluk-ken dighei lebih gesok anjak Anna. Susi ny-display-ken body more often than Anna
 - a. Subject comparison

Susi washed herself more than Anna displayed herself.

b. Object comparison

*Susi washed herself more than Susi displayed Anna.

The results are the same as in Indonesian. The counterparts of *diri* in Palembang (76) and (77), Jambi (78) and (79), and Lampung (80)–(83) do not qualify as arguments for object comparison either.

- **A.7. TESTING FOR AGENT.** For this diagnostic Palembang (84), Jambi (85), and Lampung (86) and (87) show the same result as Indonesian.
- (84) Palembang
 - a. Anna nye-(s)lamet-ke diri *dengan ati-hati*.

 Anna *ny*-save-*ke* body with careful

 'Anna saved herself carefully.'

b. Anna *sengajo* n-(t)ampil-ke diri di panggung. Anna intentionally *n*-display-*ke* body in stage 'Anna intentionally displayed herself on the stage.'

CITY JAMBI (85)

- a. Anna ny-(s)elamet-in diri dengan ati-ati. Anna ny-save-in body with 'Anna saved herself carefully.'
- b. Anna be-solek diri dengan sengajo. Anna be-primp body with intention 'Anna intentionally displayed herself on the stage.'

(86)LAMPUNG dialect A

- a. Anna ny-(s)elamet-ko dikhi hati-hati. Anna ny-save-ko body carefully 'Anna saved herself carefully.'
- b. Anna sengaja m-basuh dikhi. Anna intentionally *m*-wash body 'Anna washed herself intentionally.'

LAMPUNG dialect O (87)

- a. Evi ny-(s)elemat-ken dighei jamo hati-hati. Evi *ny*-save-*ken* body with 'Evi saved herself carefully.'
- b. Anna *sengajao* n-(t)unjuk-ken dighei di depan Anna intentionally *n*-show-*ken* body in front ulun rame. people many

'Anna displayed herself intentionally in front of many people.'

These sentences are well formed with agent-oriented adverbs. This indicates that the reflexive verbs they contain are all agentive.

A.8. TESTING FOR PATIENT/THEME. The diagnostic for the presence of the patient/theme role is applied to Palembang diri (88), Jambi diri (89), dikhi in Lampung dialect A (90), and dighei in Lampung dialect O (91). The results show the same pattern as Indonesian.

(88)**PALEMBANG**

a. Anto nge-lepas-ke diri dari ikatan itu dengan Anto nge-release-ke body from bond that with sempurno. complete

'Anto released himself from the bond completely.'

Anto ny-(s)iap-ke diri dengan sungguh-sungguh body with Anto N-prepare-ke truly-DUPL

untuk ujian besok.

exam tomorrow

'Anna prepares herself fully/completely for the exam tomorrow.'

(89)CITY JAMBI

a. Anto nge-basuh diri semuanyo. Anto nge-wash body all.of.it 'Anto washed himself completely.'

- b. Dio n-(t)unjuk-in diri seutuhnyo.
 3sg n-display-in body fully
 'She displayed herself completely.'
- c. Anto muncul-in diri seutuhnyo.
 Anto m-display-in body fully
 'Anto displayed himself completely.'
- d. Anto nge-liat-in diri seutuhnyo.
 Anto ng-display-in body fully.
 'Anto displayed himself completely.'

(90) LAMPUNG dialect A

- a. Anto m-basuh dikhi seutuhni.
 Anto m-wash body fully
 'Anto washed himself completely.'
- b. Susi n-(t)unjuk-ko dikhi *seutuhni* di hadapni jelma.
 Susi *n*-display-*ko* body fully in front many
 'Susi displayed herself completely in front of many people.'
- c. Susi nge-liak-ko dikhi *seutuhni* di hadapni jelma. Susi *ng*-display-*ko* body fully in front many people 'Susi displayed herself completely in front of many people.'

(91) LAMPUNG dialect O

- a. Anto ny-(s)uluk-ken dighei *segalano* di depan ulun.

 Anto *n*-display-*ken* body all.of.it in front many

 'Anto displayed himself completely in front of many people.'
- b. Evi n-(t)unjuk-ken dighei *segalono* di depan ulun. Evi *n*-display-*ken* body all.of.it in front many people 'Evi displayed herself completely in front of many people.'

The grammaticality of these sentences shows that the theme role is accessible.

A.9. THE DISTRIBUTION OF VERBS WITH THE PREFIX ber- PLUS

diri. Similar to Indonesian (see section 6), in both dialects of City Jambi and Village Jambi, the element *diri* is also optional; see (92) and (93) for illustration.

(92) CITY JAMBI

Dio be-solek (diri) sebelum acara nikahan 3sg be-primp body before ceremony marriage kakak-nyo.
older.sister-3sg.gen

'She primps herself before going to the marriage ceremony of her sister.'

(93) VILLAGE JAMBI

a. Rita be-hias (diri) sebelum pegi ke pesta. Rita be-primp body before going to party 'Rita primps herself before going to the party.'

b. Rita be-solek (diri) di depan kaco. Rita be-primp body in front mirror 'Rita primps herself in front of the mirror.'

However, in Palembang, the counterparts of this verb do not allow *diri*; see (94a,b).

(94) Palembang

- a. Dio be-raes (*diri) di depan kaco.

 3sG be-primp body in front mirror

 'She primps herself in front of the mirror.'
- b. Dio be-solek (*diri) di depan kaco.

 3sG be-primp body in front mirror

 'She primps herself in front of the mirror.'

The Lampung dialects A and O also have the prefix be-, similar to the prefix be-in Palembang. The counterparts of diri, namely dikhi in dialect A and dighei in dialect O, cannot occur after the verbs for 'to primp', see (95) and (96) for illustration.

(95) LAMPUNG dialect A

- a. Rita be-rias (*dikhi) semekung mit pesta.
 Rita be-primp body before go ceremony
 'Rita primps herself before going to the party.'
- b. Rita be-dandan (*dikhi) semekung mit pesta.
 Rita be-primp body before go ceremony
 'Rita primps herself before going to the party.'

(96) LAMPUNG dialect O

Evi be-solek (*dighei) selakwak lapah adok pesta. Evi be-primp body before go to party 'Evi primps herself before going to the party.'

Similar to Indonesian, for some verbs with the prefix *ber*-, the occurrence of *diri* is obligatory, see City Jambi (97)

(97) CITY JAMBI

- a. Dio be-banggo *(diri) karena jadi polisi.
 3SG be-proud body because become police
 - 'He makes himself proud because he becomes a policeman.'
- b. Dio be-siap *(diri) sebelum berangkat kerjo.

 3sg be-prepare body before going work

 'He prepares himself before going to work.'

A.10. THE POSITION OF *diri*. The counterparts of *diri* in the other languages of my sample are not separable from the verb, just as in Indonesian.

(98) Palembang

a. Anto cuman *ny-(s)elamet-ke diri* dari kebakaran itu. Anto only *nye-*save-*ke* body from fire that 'Anto only saved himself from the fire.'

b. *Anto *ny-(s)elamet-ke* **cuman** *diri* dari kebakaran
Anto *nye-*save-*ke* only body from fire
itu.
that

'Anto only saved himself from the fire.'

- (99) CITY JAMBI
 - a. Anto cuma *ny-(s)elamet-in diri* dari masalah itu.

 Anto only *ny-*save-*in* body from problem that 'Anto only saved himself from that problem.'
 - b. *Anto *ny-(s)elamet-in* **cuma** *diri* dari masalah itu.

 Anto *ny-*save-*in* only body from problem that 'Anto only saved himself from that problem.'
- (100) Lampung dialect A
 - a. Anto angkah ny-(s)elamet-ko dikhi jak
 Anto only ny-save-ko body from
 kebakaran sedi.
 fire that
 - 'Anto only saved himself from the fire.'
 - b. *Anto ny-(s)elamet-ko angkah dikhi jak
 Anto ny-save-ko only body from
 kebakaran sedi.
 fire that

 'Anto only saved himself from the fire.'
- (101) Lampung dialect O
 - a. Anto aden *ny-(s)elamet-ken dighei* jak
 Anto only *ny-*save-*ken* body from
 kebakaran eno.
 fire that
 - 'Anto only saved himself from the fire.'
 - b. *Anto ny-(s)elamet-ken aden dighei jak
 Anto ny-save-ken only body from
 'Anto only saved himself from the fire.'
 kebakaran eno.
 fire that

'Anto only saved himself from the fire.'

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