

REVISITING THE INDONESIAN PREFIXES *PEN-*, *PE₂-*, AND *PER-*

Karlina Denistia*

Quantitative Linguistics Department, Eberhard Karls Universitaet Tuebingen
karlina.denistia@student.uni-tuebingen.de, karlinadenistia@gmail.com

Abstrak

Makalah ini menyajikan kajian literatur mengenai tiga prefiks pembentuk nomina dalam bahasa Indonesia: *peN-*, *pe₂-*, dan *per-* yang berfungsi sebagai pembentuk agen, instrumen, dan pasien (misalnya terdapat pada kata tulis – penulis, wisata – wisatawan, dan tapa – pertapa). ‘N-’ yang terdapat pada *peN-* merupakan singkatan dari ‘Nasal’ sebab *peN-* memiliki lima nasal alomorf (contohnya *pen-*, *peny-*, *pem-*, *peng-*, dan *penge-*), walaupun ada satu alomorf yang tidak bersifat nasal, yaitu *pe₁-*. Prefiks yang lain, *pe₂-*, dideskripsikan memiliki kemiripan dengan *pe₁-*, baik dalam bentuk maupun artinya. *Per-* merupakan prefiks yang tidak produktif. Beberapa teori percaya bahwa nominalisasi dalam bahasa Indonesia berasal dari *peN-* dan *per-* (*pe₂-* digolongkan ke dalam *per-*). Ada juga teori yang menyebutkan bahwa nominalisasi dibentuk dari prefiks *peN-* (*pe₂-* adalah salah satu varian dari *peN-*) dan *per-*, dan beberapa teori lain menyatakan bahwa pembentukan nomina dapat berasal dari prefiks *peN-*, *pe₂-* dan *per-*. *PeN-* digambarkan sebagai prefiks yang paling produktif dan diyakini berkorelasi dengan prefiks pembentuk verba *meN-* (misalnya menulis – penulis) melalui proses substitusi imbuhan, sedangkan *pe₂-* berkorespondensi dengan awalan verbal *ber-* (misalnya berwisata – wisatawan). Sejauh ini, belum ada konsensus apakah *pe₂-* merupakan alomorf dari *peN-* atau *per-* atau bukan satu pun dari keduanya. Makalah ini akan menjabarkan teori dan penelitian yang terkait dengan masalah ini.

Kata kunci: prefiks, alomorf, substitusi imbuhan

Abstract

This paper presents a literature review on three nominalising prefixes in Indonesian: *peN-*, *pe₂-* and *per-* whose function is to create agent, instrument, or patient (e.g. *tulis* ‘to write’ – *penulis* ‘writer’, *wisata* ‘travel’ – *pewisata* ‘traveller’ and *tapa* ‘ascetic’ – *pertapa* ‘hermit’). The ‘N-’ in *peN-* stands for ‘nasal’ due to its five nasalised allomorphs (e.g. *pen-*, *peny-*, *pem-*, *peng-*, and *penge-*). However, there is one *peN-* allomorph which is not nasalised, henceforth called *pe₁-*. *Pe₂-*, the other prefix, is described as having similar in form and meaning as *pe₁-*. *Per-*, the last prefixed is described as the archaic nominalisation prefix. Some theorists believe that Indonesian nominalisation is derived from *peN-* and *per-* in which *pe₂-* belongs to *per-*, some argued that it is formed from *peN-* in which *pe₂-* is one of *peN-* variant or *per-*, and some stated that nouns are derived from *peN-*, *pe₂-* or *per-*. *PeN-* is described as the most productive of the three prefixes and is believed to correlate with the verbal prefix *meN-* (e.g. *menulis* ‘to write’ – *penulis* ‘writer’) with the process of affix substitution, whereas *pe₂-* is described as corresponding with the verbal prefix *ber-* (e.g. *berwisata* ‘to travel’ – *pewisata* ‘traveller’). Thus far, there has been no consensus addressing whether *pe₂-* is the allomorph of *peN-* or *per-* or none of them. This paper will examine existing theories and research relevant to this issue.

Keywords: prefix, allomorphs, affix substitution

INTRODUCTION

Similar to the English *-er* nominalisations, Indonesian has *peN-*, *pe₂-* and *per-* as a nominalising¹ prefix to form an agent, instrument or patient (e.g. *buka* ‘open’ – *pembuka* ‘opener’, *tinju* ‘punch’ – *petinju* ‘boxer’, *tapa* ‘ascetic’ – *pertapa* ‘hermit’). *PeN-* has five nasalised allomorphs (e.g. *pen-*, *pem-*, *peng-*, *peny-*, *penge-*) and one nonnasalised variant (e.g. *pe₁-*). The latter allomorph does not follow the nasalisation rule. Furthermore, *pe₁-* has a similar phonological condition to the invariant *pe₂-*.

In most cases, a noun with *peN-* expresses agent, causer, or instrument whereas form with *pe₂-* expresses patient or agent. However, when both *peN-* and *pe₂-* attach to the same base, both prefixes create either similar or different semantics as listed in Table 1 (Sneddon, Adelaar, Djenar & Ewing, 2010). Chaer (2008) added that *pe₂-* has a specific meaning that relates to a profession or athlete. *Per-*, in addition, is considered an unproductive prefix (Darwowitzojo, 1983; Benjamin, 2009).

Table 1. Examples of *peN-* and *pe₂-* attached to the same base words

Base Word	Base Translation	PeN-	PeN- Translation	Pe ₂ -	Pe ₂ - Translation	PeN- and Pe ₂ - Semantic Role
sapa	to address	penyapa	addressor	pesapa	addressee	agent - patient
kasih	love	pengasih	lover	pekasih	love poison	agent - instrument
sakit	sick	penyakit	disease	pesakit	a person with a disease	causer - patient
tinju	punch	peninju	puncher	petinju	boxer	agent - athlete
selam	to dive	penyelam	someone who dives	peselam	diver	agent - athlete

Several theories have discussed these prefixes and classified them according to form, meaning, and their corresponding verbal prefix with a process of affix substitution. A corresponding noun–verb prefix with the affix substitution process means that, to create nouns with *peN-* and *pe₂-*, the base words need to be made a verb form in prior. For example, *bungkus* ‘a wrap’ could be derived into *pembungkus* ‘wrapper’ because the verb *membungkus* ‘to wrap’ exists. However, it would not be possible to derive *kotak* ‘a square’ into **pengotak* ‘squarer’ as the verb **mengotak* ‘to square’ does not exist. Only do *peN-* and *pe₂-* have corresponding verbal prefixes. *PeN-* corresponds to *meN-* (e.g. *penyapa* ‘addressor’ – *menyapa* ‘to address’). Both *peN-* and *meN-* has six allomorphs (*pen-*, *pem-*, *peng-*, *peny-*, *penge-*, *pe₁-* and *men-*, *mem-*, *meng-*, *meny-*, *menge-*, *me-*). Meanwhile, *pe₂-* has either *ber-* or *di-* (e.g. *petani* ‘rice farmer’ – *bertani* ‘to farm’ and *pesapa* ‘addressee’ – *disapa* ‘to be addressed’) as its corresponding verbal prefix (Sneddon, Adelaar, Djenar & Ewing, 2010; Ramlan, 2009; Putrayasa, 2008; Darwowitzojo, 1983; Chaer, 2008; Benjamin, 2009; Ermanto, 2016; Subroto, 2012; Sugerman, 2016).

Non-native Indonesians may find it difficult to differentiate between *pe₁-* and *pe₂-* because they appear in the same phonological environment. The only way to distinguish them is by relating their verbal affix substitution. For example, appearing before /l/ initial phoneme of *lari* ‘to run’ and *lukis* ‘to paint’, *pelari* ‘runner’ is *pe₂-* because it corresponds to the verb *berlari* ‘to run’, whereas *pelukis* ‘painter’ is *pe₁-* because it corresponds to the *meN-* prefixed verb *melukis* ‘to paint’ (Chaer, 2008).

Interestingly, Indonesian works of literature have different consensus to classify the nominalising prefixes from *peN-*, *pe₂-* and *per-*. Firstly, Darwoidjojo (1983) and Kridalaksana (2007) do not distinguish *pe₂-* and *peN-* as they group both prefixes as *pe₂-*. They argued that there are two prefixes creating nouns in Indonesian and those are *pe₂-* (with *peN-* included) and *per-*. Secondly, Chaer (2008), Putrayasa (2008), Subroto (2012), and Ermanto (2016) stated that *pe₂-* is the variant of *per-* and that they are related (e.g. *pe-* as in *petapa* is derived from the deleted /t/ in *per-* as in *pertapa*, both of which mean ‘hermit’). Accordingly, they believed that *pe₂-* and *per-* should not be treated as one prefix and thus the Indonesian nominalisation is formed by *peN-* and *pe₂-*. Thirdly, Benjamin (2009) claimed that the nominalisation is formulated by prefixes *peN-* and *per-* in which *pe₂-* belongs to *per-* due to its transformation from the archaic to the more common form. Fourthly, Sneddon et al. (2010) and Ramlan (2009) believed that Indonesian nominalising prefixes consist of *peN-*, *pe₂-* and *per-*, all of which are invariants on the basis that *per-* is the unproductive nominalising prefix.

Regarding this unclear classification, I compiled previous research on nominalisation with *peN-*, *pe₂-* and *per-*, including their meaning and corresponding verbal prefix. The purposes of this paper are therefore to examine the theories related to the classification of *peN-*, *pe₂-* and *per-*. In the following sections, I will cover nominalisation with *peN-*, *pe₂-*, the overlapping *peN-* and *pe₂-*, nominalisation with *per-*, relevant discussion, possible further research, and some concluding comments.

NOMINALISATION WITH *peN-*

PeN- is one of the most productive nominalising prefixes that can be attached to a noun, adjective or verb to express agent, causer or instrument (Sneddon et al., 2010; Ramlan, 2009; Putrayasa, 2008; Chaer, 2008; Rajeg, 2013; Benjamin, 2009; Ermanto, 2016; Subroto, 2012; Sugerman, 2016). Table 2 lists some examples for *peN-* that are derived from adjective, noun or verb with a different semantic role for the nouns.

Table 2. Examples of *peN-* attached to a different base word class to express a different semantic role

Base Word	Base Translation	Noun Word	Noun Translation	Base Word Class	Semantic Role
Palsu	fake	pemalsu	counterfeiter	adj	agent
Panas	hot	pemanas	heater	adj	instrument
Sakit	sick	penyakit	disease	adj	causer
Pancing	fishing rod	pemancing	fisherman	n	agent
Uap	steam	penguap	steamer	n	instrument
Pantau	to observe	pemantau	observer	v	agent
Baca	to read	pembaca	reader	v	instrument

As shown in Table 2, *peN-* transforms into allomorphs such as *pem-* as in *pemalsu*, *peny-* as in *penyakit*, and *peng-* as in *penguap*. Sneddon et al. (2010), Sugerman (2016), Ramlan (2009), Putrayasa (2008), Chaer (2008), and Ermanto (2016) characterised the occurrences of *peN-* allomorphs as follows:

- -N becomes -ng before vowels a, i, u, e, o and with the initials g, k, h, kh
 - *peN-* + *olah* ‘to cultivate’ = *pengolah* ‘cultivator’
 - *peN-* + *urus* ‘to look after’ = *pengurus* ‘committee’
 - *peN-* + *goda* ‘to flirt’ = *penggoda* ‘one who flirts’
 - *peN-* + *hancurkan* ‘to destroy’ = *penghancurkan* ‘destroyer’
 - *peN-* + *khianat* ‘to betray’ = *pengkhianat* ‘traitor’
- -N becomes -m with initials b, p, f
 - *peN-* + *beli* ‘to buy’ = *pembeli* ‘buyer’
 - *peN-* + *fitnah* ‘to slander’ = *pemfitnah* ‘one who slanders’
- -N becomes -n with initials d, t, c, j, sy, z
 - *peN-* + *dengar* ‘to listen’ = *pendengar* ‘listener’
 - *peN-* + *cari* ‘to seek’ = *pencari* ‘seeker’
 - *peN-* + *tolak* ‘to reject’ = *penolak* ‘one who rejects’
 - *peN-* + *jajah* ‘to colonialize’ = *penjajah* ‘colonizer’
- -N becomes -ny with initial s
 - *peN-* + *sewa* ‘to rent’ = *penyewa* ‘one who rents’
- -N is lost before initials l, r, m, n, ng, ny, w, y
 - *peN-* + *lamar* ‘to propose’ = *pelamar* ‘one who proposes’
 - *peN-* + *ramal* ‘to forecast’ = *peramal* ‘fortune teller’
 - *peN-* + *warna* ‘to color’ = *pewarna* ‘one which gives color’
 - *peN-* + *masak* ‘to cook’ = *pemasak* ‘chef’
 - *peN-* + *nyanyi* ‘to sing’ = *penyanyi* ‘singer’
- *penge-* occurs in a single syllable base
 - *peN-* + *bom* ‘bomb’ = *pengebom* ‘bomber’

However, Sneddon et al. (2010) list some exceptions, stating that, with some bases, initials /p/, /t/, /s/, /k/ are not lost if the stem is borrowed from other languages. When what is borrowed becomes more accepted as an Indonesian word, people are more likely to use the regular form of the allomorph condition. For example, from the stem *klasifikasi* ‘classification’, Indonesian uses *pengklasifikasi* ‘classifier’ but not *penglasifikasi*. When the borrowed word is more widely accepted as Indonesian, two forms can be found; for example, *terjemah* ‘to translate’ which has *penerjemah* and *penterjemah* ‘translator’ as its derived nouns. This constitutes a neutralisation process transforming borrowed words into Indonesian words. If this is the case, then *penglasifikasi* will eventually become accepted and available. It should also be noted that Alwi et al. (2003) treated stem initialized by ‘c’ and ‘j’ to be *peny-* allomorph due to the old spelling assimilation as in *pentjari* and *pendjadjah*. He later explained that the allomorph realisation for this ‘c’ and ‘j’ is *pen-*. In few cases, *peN-* nouns occur in two different ortographical realisations with same meaning (e.g. *pesaing* - *penyaing* ‘competitor’, *pecinta* – *pencinta* ‘lover’, *pengrajin* – *perajin* ‘crafter’).

Table 3. Examples of correspondence between *meN-* and *peN-*

Base Word	Base Translation	Base Word Class	Verb Word	Verb Translation	Noun Word	Noun Translation	Semantic Role
palsu	fake	adj	memalsukan	to falsify	pemalsu	counterfeiter	agent
panas	hot	adj	memanaskan	to heat	pemanas	heater	instrument
pancing	fishing rod	n	memancing	to fish	pemancing	fisherman	agent
uap	steam	n	menguapi	to steam	penguap	steamer	instrument
pantau	to observe	v	memantau	to observe	pemantau	observer	agent
baca	to read	v	membaca	to read	pembaca	reader	instrument

Nouns with *peN-* are described as having a corresponding verbal prefix with the *meN-* (e.g. *pembuka* ‘opener’ is assumed to be derived from *membuka* ‘to open’) (Benjamin, 2009; Tjia, 2015). Table 3 shows that one of *peN-* allomorphs is characterised by a process of affix substitution with one of *meN-* allomorphs (Verhaar, 2010; Sneddon et al., 2010; Ramlan, 2009). Verbs with *meN-* can be extended to become the circumfixes *meN-kan* and *meN-i* to create causative (e.g. *panas* ‘hot’ – *memanaskan* and *memanasi* ‘to make something hot’) or beneficiary semantics (e.g. *ajar* ‘to teach’ – *mengajarkan* and *mengajari* ‘to teach to someone’) (Kroeger, 2007; Sutanto, 2002). A structure with *meN-kan* and *meN-i* requires a goal, a patient, a beneficiary, a theme, a location, or an instrument as an argument (Arka, Dalrymple, Mistica & Mofu, 2009; Sutanto, 2002; Tomasowa, 2007). Furthermore, *-i* expresses iterative (e.g. *lempar* ‘to throw’ – *melempari* ‘to throw repeatedly’), applicative (e.g. *irim* ‘to send’ – *mengirimi* ‘to send to someone’), or intensifier semantics (e.g. *pukul* ‘to hit’ – *memukuli* ‘to hit over and over again’) (Tomasowa, 2007; Arka et al., 2009). However, derived nouns with *peN-* do not carry the *-i* or *-kan* suffixes, even though semantically they may correspond to verbs with these suffixes. For example, *pemanas*, ‘heater’ is paradigmatically related to *memanaskan* ‘to heat’ rather than to the verb *memanas* which means ‘to become hot’.

NOMINALISATION WITH *pe₂-*

Pe₂- is described by Sneddon et al. (2010) and Ramlan (2009) as another form of nominalising prefix derived from *peN-*. Table 4 lists some examples of *pe₂-* attaching to a noun, verb or adjective to express agent, instrument or patient (Sneddon et al., 2010; Ramlan, 2009). As the table shows, *pe₂-* does not follow nasalisation rules as what is happening to *peN-*. As mentioned in the previous section, *-N* in *peN-* becomes *-n* when it attaches to the stem initialised by /j/, as in *penjajah* ‘colonizer’. However, Indonesian uses *pejalan* ‘pedestrian’ and *pejuang* ‘fighter’ but not **penjalan* and **penjuang* (see Table 4). This is the essential difference between *peN-* and *pe₂-*, in that *pe₂-* is not following the nasalisation rule used by *peN-* (Sneddon et al., 2010; Ramlan, 2009; Putrayasa, 2008).

Table 4. Examples of *pe₂-* attached to a different base word class to create a different semantic role

Base Word	Base Translation	Noun Word	Noun Translation	Base Word Class	Semantic Role
sakit	sick	pesakit	sick person	adj	patient
tualang	adventure	petualang	adventurer	adj	agent
jalan	road	pejalan	pedestrian	n	agent
kasih	love	pekasih	love poison	n	instrument
sapa	greeting	pesapa	addressee	n	patient
tanda	command	petanda	signified	n	patient
juang	to fight	pejuang	fighter	v	agent
lari	to run	pelari	runner	v	agent

Furthermore, *pe₂-* attaches to verbs with the prefix *ber-* and *di-* by a process of affix substitution as shown in Table 5 (Verhaar, 2010; Putrayasa, 2008; Sneddon et al., 2010). Ramlan (2009) also acknowledged that several verbs with *ber-* correlate to *pe₂-*. *Ber-*, which has *be-* and *bel-* as infrequent allomorphs, primarily creates verbs expressing reciprocity, reflexivity, or stativity (Kridalaksana, 2007; Ramlan, 2009; Putrayasa, 2008; Chaer, 2008; Sneddon et al., 2010). Tjia (2015) noted that *ber-* is a middle prefix expressing an intransitive verb, especially for emotion and position (e.g. *berlari* '(in the process of) running' or *bersakit* '(in the process of being) sick').

Table 5. Examples of the corresponding *ber-* or *di-* and *pe₂-*

Base Word	Base Translation	Base Word Class	Verb Word	Verb Translation	Noun Word	Noun Translation	Semantic Role
sakit	sick	adj			pesakit	sick person	patient
tinggi	high	adj			petinggi	high officials	agent
tualang	adventure	adj	bertualang	to have an adventure	petualang	adventurer	agent
jalan	road	n	berjalan	to walk	pejalan	pedestrian	agent
kasih	love	n			pekasih	love poison	instrument
kebun	garden	n	berkebun	to do gardening	pekebun	gardener	agent
kerja	work	n	bekerja	to work	pekerja	worker	instrument
sapa	greeting	n	disapa	to be greeted	pesapa	addressee	patient
tanda	command	n	bertanda	to have sign	petanda	signified	patient
juang	to fight	v	berjuang	to fight	pejuang	fighter	agent
lari	to run	v	berlari	to run	pelari	runner	agent

Ber- can be extended with the suffixes *-kan* and *-an*. A verb with *ber-kan* and *ber-an* confixes express ‘having X’ (e.g. *dasar* ‘base’ – *berdasarkan* ‘on the basis of’) or reciprocal (e.g. *gandeng* ‘to hold hand’ – *bergandengan* ‘to hold hands with each other’), respectively (Sneddon et al., 2010). *Di-* is a prefix used to create passive construction and can be extended to the suffix *-kan* and *-i*. It has also been a common knowledge that *meN-* and *di-* are highly correlated due to their respective function as active and passive verbal prefixes, such as *mengirim* ‘to send’, *dikirim* ‘to be sent’, *memanaskan* ‘to make something hot’ – *dipanaskan* ‘to be made hot’ and *melempari* ‘to throw repeatedly’ – *dilempari* ‘to be thrown by something repeatedly’ (Sneddon et al., 2010; Ramlan, 2009; Kridalaksana, 2007; Putrayasa, 2008; Darwawidjojo, 1983; Chaer, 2008; Benjamin, 2009; Ermanto, 2016; Subroto, 2012; Sugerman, 2016). Although the corresponding *ber-* and *di-* have an *-i*, *-an* or *-kan* suffix extension, derived nouns with *pe₂-* are paradigmatically related to verbs that do not carry the *-i* or *-kan* suffixes. For example, *petaruh* ‘bidder’, is related to the verb *bertaruh* ‘to bid’ and not to **bertaruhkan* or **bertaruhan*.

OVERLAPPING *peN-* AND *pe₂-*

In some cases, *peN-* and *pe₂-* can appear in the same phonological condition, moreover, both of them are possibly attached to the same base words. The question then arises on how to differentiate *peN-* and *pe₂-* when they appear in the precisely similar environment. Chaer (2008) and Ramlan (2009) explained two analogical processes of *peN-* and *pe₂-* formations. The first is that when these prefixes attach to the same base word, *peN-* and *pe₂-* create an agent–patient relationship as in *penyuruh* ‘commander’ – *pesuruh* ‘who is commanded’. This analogical process then creates another agent – patient paradigm between *peN-* and *pe₂-* (e.g. *penatar* ‘speaker in a seminar’ – *petatar* ‘participant in a seminar’, *penyuluh* ‘person who gives information’ – *pesuluh* ‘person who is given information’, *pengubah* ‘changer’ – *peubah* ‘which is changed’). Secondly, due to the existence of *petinju* ‘boxer’, words for certain sports tend to use forms with *pe₂-*, such as *pegolf* ‘golfer’, *petembak* ‘shooter (athlete)’ and *petenis* ‘tennis player’. This theory provides a reasonable explanation as to why both *peN-* and *pe₂-* attach to the same stem (e.g. *tinju* ‘to punch’ – *petinju* ‘boxer’ – *peninju* ‘someone who punches’, *tembak* ‘to shoot’ – *petembak* ‘shooter’ (athlete) – *penembak* ‘someone who shoots’, *selam* ‘to dive’ – *peselam* ‘diver’ (athlete) – *penyelam* ‘someone who dives’, *terjun* ‘to skydive’ – *peterjun* ‘skydiver’ (athlete) – *penerjun* ‘someone who sky dives’ and *dayung* ‘to paddle’ – *pedayung* ‘paddler’ (athlete) – *pendayung* ‘someone who paddles’) that *pe-* is semantically more specific to the athlete of the sport.

Sneddon et al. (2010) and Benjamin (2009) added that in cases where *peN-* and *pe₂-* occur with the same base, thus have the same or very similar meanings (e.g. from *sulap* ‘magic’ to be *pesulap* and *penyulap* ‘magician’). There are also cases in which *pe₂-* and *peN-* emerge within the same stem and reflect different semantics. A form with *peN-* expresses agent, causer, or instrument whereas a form with *pe₂-* expresses patient or agent (e.g. *siar* ‘to announce/to sail’ – *penyiar* ‘radio announcer’ – *pesiar* ‘a cruise ship’ and *tanda* ‘sign’ – *penanda* ‘a sign’ – *petanda* ‘a hint’, *ajar* ‘to teach’ – *pengajar* ‘teacher’ – *pelajar* ‘student’, *tempur* ‘to combat’ – *penempur* ‘armament’ – *petempur* ‘combatant’).

Sawardi (2015) endorsed the analogical process between the agentive *peN-* and the patient *pe₂-* and further concluded that this phenomenon is a measurement of the transitivity

of a verb. Sawardi also stated that *peN-* can be an indicator of ergativity in Indonesian. He claimed that if an intransitive verb can be nominalised using *peN-*, then the subject argument needed in the syntactical structure will be an agent (e.g. *berenang* ‘to swim’ – *perenang* ‘swimmer’). His main point is that all *pe₂-*, regardless of whether it corresponds to *ber-*, is considered *peN-* because it is derived from an intransitive verb. Thus, unlike other theories which state that *pekerja* ‘worker’, *pelari* ‘runner’, *perenang* ‘swimmer’, *pelayar* ‘sailor’ are *pe₂-*, in Sawardi’s, these words are *peN-*. He only categorised *pe₂-* as those whose semantic role is that of patient (e.g. *petatar* ‘participant in a seminar’, *pesuluh* ‘person who is given information’). This claim, however, is applied only to a small amount of data. Besides, *peN-* which functions as an instrument is not discussed by Sawardi.

NOMINALISATION WITH *per-*

Per- is a nominalising prefix forming agent or patient. Compared to *peN-* and *pe₂-*, which are productive in creating nouns, *per-* is a non-productive nominalising prefix (Darwowitzjo, 1983; Ramlan, 2009). There are only a few examples of nouns with this prefix (e.g. *tapa* ‘to live as an ascetic’ – *pertapa* ‘hermit’, *segi* ‘angle’ – *persegi* ‘square’, *antara* ‘between’ – *perantara* ‘mediator’, *tanda* ‘sign’ – *pertanda* ‘a sign’, *lambang* ‘symbol’ – *perlambang* ‘symbol’).

There are two views as to whether *pe₂-* and *per-* are different. The first perceives *per-* as invariant from *pe₂-* which means they need to be treated as two different prefixes (Benjamin, 2009; Sneddon et al., 2010; Ramlan, 2009). The basic premise that makes it different from *pe₂-* is that *per-* is unproductive, somewhat archaic, and limited to only a few words. The second view treats *per-* as a form similar to *pe₂-* (Putrayasa, 2008; Subroto, 2012; Chaer, 2008; Ermanto, 2016). Putrayasa (2008) argued that the /r/ deletion in *per-* to become *pe₂-* is a diachronic process. Subroto (2012) and Ermanto (2016) also stated that both *pe₂-* and *per-* are derived from the verbal prefix *ber-* (e.g. *bertapa* ‘to do ascetic’ – *pertapa* ‘hermit’ and *berdagang* ‘to trade’ – *pedagang* ‘trader’).

Per- can also function as a causative prefix (e.g. *besar* ‘big’ – *perbesar* ‘to make bigger’ and *istri* ‘wife’ – *peristri* ‘to make her a wife’) (Ramlan, 2009; Rajeg, 2013). I will not discuss the causative *per-* further due to its function as a verbal prefix, although Benjamin (2009) stated that the agent and causative *per-* might have a historical correlation as in *pejalan* ‘pedestrian’ which was derived originally from causative *perjalan* and ‘seems to imply the replication of whatever it is that the agent *pe-* is doing or has in mind – which is an appropriate way to derive a ‘causative’ morphology’.

Chaer (2008) elaborates further on *per-* allomorphs as follows:

- *-r* disappears before *-r*, or if the first syllable contains *-er-*
 - *per-* + *ringan* ‘light’ = *peringan* ‘to make something lighter’
 - *per-* + *rendah* ‘low’ = *perendah* ‘to make something lower’
 - *per-* + *runcing* ‘sharp’ = *peruncing* ‘sharpen’
 - *per-* + *ternak* ‘to farm’ = *peternak* ‘rice farmer’
 - *per-* + *kerja* ‘to work’ = *pekerja* ‘worker’
- *-r* becomes *-l* only with the stem *ajar* ‘to study’
 - *per-* + *ajar* ‘to study’ = *pelajar* ‘student’

- -r appears elsewhere
 - *per-* + *kaya* ‘rich’ = *perkaya* ‘to become richer’
 - *per-* + *kecil* ‘small’ = *perkecil* ‘to make something smaller’
 - *per-* + *lambat* ‘slow’ = *perlambat* ‘to make something slower’
 - *per-* + *cepat* ‘fast’ = *percepat* ‘to make something faster’

However, Chaer’s (2008) formula for the phonological condition for *per-* can be called into question because, in his examples of allomorphy, he compiled the instrument *peN-* as in *peruncing* ‘sharpener’, agent *pe₂₋* as in *pekerja* ‘worker’, and causative *per-* as in *perkaya* ‘to become richer’ and assumed that all three are *per-*.

DISCUSSION

There are three possible classifications of the nominalising prefix in Indonesian using *peN-*, *pe₂₋* and *per-*. The first classification states that nouns could be derived using *peN-*, *pe₂₋* and *per-* prefixes (Sneddon et al., 2010; Sugerman, 2016; Ramlan, 2009). The second classifies the formation with prefix *pe₂₋* and *per-* in which *peN-* is merged with *pe₂₋* (Darwoidjojo, 1983; Kridalaksana, 2007). The final classification was given by Putrayasa (2008), Subroto (2012), Chaer (2008), Alwi (2003) and Ermanto (2016) and treated *per-* as a similar form of *pe₂₋* due to their shared characteristics.

The second argument, in my opinion, needs to be reconsidered because Indonesian also realises a structure in which two forms of *pe₂₋* occur in the same base under the principle of analogy given by Chaer (2008) and Ramlan (2009) (e.g. *ubah* ‘to change’ – *pengubah* ‘changer’ – *peubah* ‘which is changed’ and *tinju* ‘to punch’ – *petinju* ‘boxer’ – *peninju* ‘someone who punches’). This shows that *peN-* and *pe₂₋* are not complementary in their distribution.

From the third argument, researchers therefore believe that *pe₂₋* is the modern version of *per-* as both are related to *ber-* (e.g. *pertapa* ‘hermit’ – *bertapa* ‘to do ascetic’ vs. *petani* ‘rice farmer’ – *bertani* ‘to farm’). Hence, they argue that the nominalisation is formed by *peN-* and *pe₂₋* only. If it is indeed the case that *per-* and *pe₂₋* are the same prefix from a diachronic perspective, I should be able to find two forms showing a transformation, such as *pertapa* to *petapa*, meaning ‘hermit’, and both forms would be acceptable. In fact, forms such as *petani* ‘rice farmer’ or *petinju* ‘boxer’ do not show any transformation at all; there are no **pertani* or **petinju*. Thus, I argue that there is still no clear consensus as to what constitutes the major nominalising categories in the Indonesian language.

Darwoidjojo (1983) proposed a parameter of productivity derived from the number of the forms created in *peN-*. He mentioned that a new formation through the process of analogy, as proposed by Chaer (2008), makes *peN-* the most productive prefix. Given that *peN-* is claimed to be the most productive nominalising prefix and *per-* as the unproductive one, a question arises regarding the general use of the term productivity, which has not yet to be well defined. Indeed, studies on the productivity of word formation have provided solutions to questions related to morphology in the written and spoken language, context-governed spoken language, and everyday conversations (Baayen, 1992; Baayen & Lieber, 1991; Baayen & Renouf, 1996; Baayen & Neijt, 1997; Plag, 1999). In the cases of *peN-*, *pe₂₋* and *per-* prefixes, it is not clear which definition of productivity is being used. Kridalaksana (2007) and Ramlan (2009) claim that a formation can be more productive than others; however, they do not state

whether the productivity parameter is based on the frequency of usage, new formation, or even its regularity (e.g. their process of analogy) in the nominalisation.

In addition to *peN*- allomorphs' phonological condition, I notice that the theories do not describe the phonological condition because it is the first letter of the stem typography and has nothing to do with either place or manner of articulation. Overall, it can be concluded that:

- *peng*- occurs when it is combined with a stem initialised by vowels, velar–stop (e.g. /g/, /k/), velar fricative (e.g. /h/), and uvular fricative (e.g. /χ/) consonants
- *pem*- occurs when it is combined with a stem initialised by bilabial stop (e.g. /b/, /p/) and voiceless labiodental (e.g. /f/) consonants
- *pen*- occurs when it is combined with a stem initialised by alveolar stop (e.g. /d/, /t/) and alveolar fricative (e.g. /tʃ/, /dʒ/, /ʃ/, /ʒ/) consonants
- *peny*- occurs when it is combined with a stem initialised by alveolar fricative (e.g. /s/) consonant
- *pe*- occurs when it is combined with a stem initialised by nasal (e.g. /m/, /n/, /ɲ/, /ŋ/), glide (e.g. /w/, /j/) and liquid (e.g. /r/, /l/) consonants
- *penge*- occurs whenever *peN*- attaches to a single syllable stem

A problem arises when distinguishing between *pe₁*- and *pe₂*- as the allomorph of *peN*- because both can appear in the same phonological condition (see Table 6). For example, there may be confusion around whether the word *pelatih* ‘trainer’ is *peN*- or *pe₂*- as Indonesian has *melatih* ‘to train’ and *berlatih* ‘to practice’. In this case, native Indonesians can say that *pelatih* has the *peN*- prefix as it correlates to the verb *melatih* and not *berlatih*; this is the basis of so-called ‘native intuition’. This issue regarding the overlapping phonological condition between *peN*- and *pe₂*- has been poorly addressed until now, as has the extent to which native speakers can discriminate between *pe₂*- and *peN*- when they appear in the same phonological environment.

Table 6. Examples of *peN*- and *pe₂*- occurring in the same phonological condition

Base Word	Base Translation	Word Class	Noun Word	Noun Translation	Pe	PeN	Allo-morph	Semantic Role	Verb Word	Verb Translation
lari	to run	v	pelari	runner	T	F		agent	berlari	to run
musik	music	n	pemusik	musician	T	F		agent	bermusik	to play music
runding	discussion	n	perunding	who are in discussion	T	F		agent	berunding	to have a discussion
wisata	to travel	v	pewisata	traveller	T	F		agent	berwisata	to travel
lukis	to paint	v	pelukis	painter	F	T	pe	agent	melukis	to paint
minta	to ask for	v	peminta	demandeur	F	T	pe	agent	meminta	to ask for
rintis	pioneer	n	perintis	pioneer	F	T	pe	agent	merintis	to pioneer
wawancara	interview	n	pewawancara	interviewer	F	T	pe	agent	mewawancara	to interview

FUTURE RESEARCH

Conducting a corpus-based study on these prefixes is undoubtedly feasible. There is a large Indonesian corpus that forms part of the Leipzig Corpora Collection at [<https://www.r-project.org/conferences.html>] which comprises a variety of written registers (the web,

newspapers, Wikipedia) dating from the years 2008 – 2012 (Goldhahn, Eckart & Quasthoff, 2012)). With a total dataset of 36.608.669-word tokens from the corpus, productivity can be measured. Moreover, it may be possible to support qualitative theories using this quantitative data.

From this corpus, we could run MorphInd, the Indonesian morphological parser (Larasati, Kuboň & Zeman, 2011), to compile all the possible *peN-*, but not *pe₂-* and *per-*. From Table 7, MorphInd identifies correctly that *perintis* ‘pioneer’, *pelukis* ‘painter’, *pewawancara* ‘interviewer’ and *peminta* ‘demander’ contain *peN-* prefix. However, the parser is not able to identify *pe₂-* in *petapa* ‘hermit’, *pekerja* ‘worker’ and *pejalan* ‘pedestrian’. MorphInd also misidentifies *pelari* ‘runner’ and *pemusik* ‘musician’. Thus, MorphInd lacks precision in identifying *pe₂-* and *per-*. Hence, the output of the parser still needs to be manually checked and corrected.

Some researches on stemming Indonesian has also been conducted. Like MorphInd, most forms of machine learning can distinguish *peN-* but not *pe₂-* and *per-* (Suhartono, Christiandy & Rolando, 2014; Asian, Williams & Tahaghoghi, 2005; Adriani, Nazief, Asian & Tahaghoghi, 2007; Oktarino, Winahyu, Halim & Suhartono, 2016; Setiawan, Kurniawan, Budiharto, Kartowisastro & Prabowo; 2016). However, work conducted by Pisceldo, Mahendra, Manurung and Arka (2008) distinguished between *peN-* and *per-* (*pe₂-* is included in *per-*).

All data preprocessing and analyses could be run in R (R Team, 2008; S. R Team, 2015). This is an open-source programming language for statistical computation available for Windows, Mac (OS X), and Linux that can be downloaded for free.

Table 7. Examples of the output of the MorphInd parser

Base Word	Base Translation	Noun Word	Noun Translation	Pe-	PeN-	Parser
rintis	pioneer	perintis	pioneer		TRUE	peN+rintis_NSD
lukis	paint	pelukis	painter		TRUE	peN+lukis_NSD
wawancara	interview	pewawancara	interviewer		TRUE	peN+wawancara_NSD
tapa	to do ascetic	pertapa	hermit			pertapa_X-
minta	to ask for	peminta	demander		TRUE	peN+minta_NSD
kerja	work	pekerja	worker	TRUE		pekerja_NSD
jalan	road	pejalan	pedestrian	TRUE		pejalan_NSD
lari	running	pelari	runner	TRUE		peN+lari_NSD
musik	music	pemusik	musician	TRUE		peN+musik_NSD

Given that there is an issue in *pe₁-* and *pe₂-*, it would be helpful to see how they differ in terms of productivity. Furthermore, experimental linguistics would be a fruitful way to address issues which are not yet resolved by theories. For example, studies conducted by Tomaschek, Wieling, Arnold and Baayen (2013, 2014) found that word frequency has a significant effect on vowel length, vowel quality, and vowel articulation in speech production. Specifically, they found that the higher the word frequency, the more the speaker will have language experience. This increases the proficiency of the speakers, enabling them to anticipate the tongue movement for high-frequency words. They also found differences in vowel realisations in high and low-frequency German words using articulatory. For example, the higher the word frequency, the

longer the articulation of long vowels and the shorter the articulation of short vowels. Regarding innovative application in experimental linguistics, it would be enlightening to see how *peN-*, *pe₂-* and *per-* – which are claimed to differ in productivity – are articulated differently by native Indonesians. In the experiment, I would also consider word frequency from the corpus as well as base frequency and verbs with *meN-* or *ber-* to see how they are correlated in word articulation.

This topic can also be investigated using Blevins, Ackerman, Malouf and Ramscar (2016) word in paradigm structure in which ‘the organisation of morphological system presupposes that words are construed as parts of patterns’. In Indonesian, it is generally known that *peN-* and *pe₂-* have a paradigmatic relation with *meN-* and *ber-* verbal prefixes, respectively. If it is indeed the case they are correlated, this offers a new approach to exploring the allomorphy given that both *peN-* and *meN-* have six allomorphs (e.g. *pen-*, *peng-*, *pem-*, *peny-*, *penge-*, *pe-* and *men-*, *meng-*, *mem-*, *meny-*, *menge-*, *me-*). This paradigm of *meN-* and *peN-* is regularly displayed in Indonesian. Such a paradigmatic relation is supported by Benjamin (2009) and Tjia (2015) who state that *meN-* is a very agentive and actor-oriented verbal prefix, although they do not discuss in detail how *meN-* and *peN-* are paradigmatically correlated. They assumed that, because of the high agentivity of prefix *meN-*, it creates subject nominalisation with the prefix *peN-*. Furthermore, Tjia (2015) conducted a notable review of prefix *meN-* as well as other prefixes (e.g. *ter-*, *ber-*, *per-*) regarding the degree of agentivity of the subject and transitivity in general. The formations are paradigmatically organised in Indonesian using various affixes. This finding might be expanded to a hypothesis of the paradigmatic relation between *meN-* and *peN-* regarding their productivity. The hypothesis is that if they are under the same paradigm, allomorphs in *peN-* will mirror allomorphs of *meN-*, and vice versa. From this, a new hypothesis can be tested; whether the productivity of the verbal prefix with *meN-* is reflected through *peN-* and, if so, is this also the case with *pe₂-* and *ber-*?

CONCLUSION

Theories about *peN-*, *pe₂-* and *per-* provide many qualitative descriptions as to their form and meaning without any consensus on the classification of these prefixes. Among the theories reviewed, there were four classifications of the nominalising prefix in Indonesian: (1) *pe₂-* and *per-*, (2) *peN-* and *pe₂-*, (3) *peN-* and *per-*, and (4) *peN-*, *pe₂-* and *per-*. In these theories, each prefix is described as having its own base word category characteristics, semantic role, and corresponding verbal base.

Furthermore, an issue arises when one of the *peN-* allomorphs, *pe₁-*, cannot be distinguished from *pe₂-* due to their similar appearance in the phonological environment. *PeN-* has five allomorphs, *pen-*, *pem-*, *peng-*, *peny-*, *penge-*, that follow the nasalisation rule. One allomorph, *pe₁-*, does not. Some researchers have discussed the phonological conditions of *peN-* for its allomorphs. When *peN-* and *pe₂-* are in a contest, there are two ways to determine them. The first is to ascertain which verbal prefix they correspond to; *peN-* is with *meN-* and *pe₂-* is with *ber-*. Accordingly, *pelukis* ‘painter’ has the prefix *pe₁-* as it corresponds to *melukis* ‘to paint’, while *pelari* ‘runner’ has the prefix *pe₂-*, as it relates to *berlari* ‘to run’. Secondly, it is essential to check the availability of the analogical process underlying the agent–patient semantic role between *peN-* and *pe₂-*, or the athlete semantic specialisation which exists only in *pe₂-*.

Although there have been many qualitative descriptions and theories regarding these prefixes, some questions remain. Despite the debate on the classification of nominalising prefixes, the measurement of productivity among these three prefixes is also somewhat unclear. Another question concerns the overlapping *peN-* and *pe₂-* when they occur in the same phonological condition: how can the prefix be distinguished? Therefore, further research on quantitative and experimental linguistics will provide new perspectives on Indonesian morphology. Corpus-based analyses as well as word frequency effect in sound production might be two possible forms of research that can be conducted in this respect. Furthermore, the new concept of word-in-paradigm can be used to analyse the verb-noun corresponding prefixes of *peN-* and *meN-*, as well as *pe₂-* and *ber-*. Often these forms are used to help establish a lack of appropriate theories or to reveal that current theories are inadequate for explaining emerging research problems.

NOTE

* This study was funded by the Indonesian Endowment Fund for Education (*Lembaga Pengelola Dana Pendidikan*) (No. PRJ-1610/LPDP/2015). I also would like to thank Gede Primahadi Wijaya Rajeg for his feedback on the earliest version of this paper.

REFERENCES

- Adriani, M., B. Nazief, J. Asian, & S. Tahaghoghi. (2007). Stemming Indonesian: A confix-stripping approach. *ACM Transactions on Asian Language Information Processing*, 6(4), Article 13.
- Alwi, H., S. Dardjowidjojo, H. Lapoliwa, & A.M. Moeliono. (2003). *Tata Bahasa Baku Bahasa Indonesia*. Jakarta: Balai Pustaka.
- Arka, I W., M. Dalrymple, M. Mistica, & S. Mofu. (2009). A linguistic and computational morphosyntactic analysis for the applicative -i in Indonesian. In M. Butt & T. H. King (eds.), *International lexical functional grammar conference (lfg)* (pp. 85–105). CSLI Publications.
- Asian, J., H. E. Williams, & S. M. M. Tahaghoghi. (2005). Stemming Indonesian. In Estivill-Castro (Ed.), *The 28th Australasian computer science conference (ACSC 2005)* (Vol. 38). Australian Computer Society, Inc.
- Baayen, R. H. (1992). On frequency, transparency, and productivity. In G. Booij & J. van Marle (eds.), *Yearbook of Morphology 1992*, (pp. 181–208). Kluwer Academic Publisher, Dordrecht.
- Baayen, R. H. & A. Neijt. (1997). Productivity in context: A case study of a Dutch suffix. *Linguistics*, 35, 565–587.
- Baayen, R. & R. Lieber. (1991). Productivity and English derivation: A corpus-based study. *Linguistics*, 29, 801–844.
- Baayen, R. & A. Renouf. (1996). Chronicling the times: Productive lexical innovations in an English newspaper. *Language*, 72, 69–96.

- Benjamin, G. (2009). Affixes, Austronesian and iconicity in Malay. *Bijdragen Tot de Taal-, Land- En Volkenkunde*, 165(2–3), 291–323.
- Blevins, J. P., F. Ackerman, R. Malouf & M. Ramscar. (2016). Morphology as an adaptive discriminative system. In D. Siddiqi & H. Harley (eds.). *Morphological Metatheory*, (pp. 271–300). John Benjamins Publishing Company, Amsterdam.
- Chaer, A. (2008). *Morfologi Bahasa Indonesia (pendekatan proses)*. Jakarta: PT Rineka Cipta.
- Darwawidjojo, S. (1983). *Some aspects of Indonesian linguistics*. Jakarta: Djambatan.
- Ermanto. (2016). *Morfologi afiksasi Bahasa Indonesia masa kini: Tinjauan dari morfologi derivasi dan infleksi*. Jakarta: Kencana.
- Goldhahn, D., T. Eckart, & U. Quasthoff (2012). Building large monolingual dictionaries at the Leipzig Corpora Collection: From 100 to 200 languages. In *Proceedings of the eighth international conference on language resources and evaluation* (pp. 1799–1802). Istanbul.
- Kridalaksana, H. (2007). *Kelas kata dalam bahasa Indonesia* (second). Jakarta: Gramedia Pustaka Utama.
- Kroeger, P. R. (2007). Morphosyntactic vs. morphosemantic function. In A. Zaenen, J. Simpson, T. H. King, G. Jane, J. Maling, & C. Manning (Eds.) *Architectures, rules, and preferences: Variations on themes of Joan Bresnan*, (pp. 229–251). Stanford, California: CSLI Publications.
- Larasati, S., V. Kuboň, & D. Zeman. (2011). Indonesian morphology tool MorphInd: Towards an Indonesian corpus. In M. C. & P. M. (Eds.) *Systems and frameworks for computational morphology*, vol. 100. Springer, Berlin, Heidelberg.
- Oktarino, A. B., D. T. Winahyu, A. Halim, & D. Suhartono. (2016). Generating affixed words from a root word and getting lemma from affixed word in Bahasa: Indonesian language. *International Journal of Knowledge Engineering*, 2(3), 132–136.
- Pisceldo, F., R. Mahendra, R. Manurung, & I W. Arka. (2008). A two-level morphological analyser for the Indonesian language. In *In proceedings of the 2008 Australasian language technology association workshop ALTA 2008* (pp. 142–150).
- Plag, I. (1999). *Morphological productivity: Structural constraints in English derivation*. Berlin: Mouton de Gruyter.
- Putrayasa, I B. (2008). *Kajian morfologi: Bentuk derivasional dan infleksional*. Bandung: PT Refika Aditama.
- R Team, D. C. (2008). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing. Retrieved from <http://www.R-project.org>
- R Team, S. (2015). *RStudio: Integrated development for r. rstudio*. Boston, MA: RStudio, Inc. Retrieved from <http://www.rstudio.com/>
- Ramlan, M. (2009). *Morfologi: Suatu tinjauan deskriptif*. Yogyakarta: CV Karyono.
- Sawardi, F. (2015). Perilaku keterpilahan (split-S) Bahasa Indonesia. *Nuansa Indonesia*, XVII(1), 36–44.

- Setiawan, R., A. Kurniawan, W. Budiharto, I. H. Kartowisastro, & H. Prabowo. (2016). Flexible affix classification for stemming Indonesian language. *13th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology ECTI-CON* (pp. 1–6).
- Sneddon, J. N., A. Adelaar, D. N. Djenar, & M. C. Ewing. (2010). *Indonesian: A comprehensive grammar*. New York: Routledge.
- Subroto, E. (2012). *Pemerian morfologi Bahasa Indonesia: Berdasarkan perspektif derivasi dan infleksi proses afiksasi*. Surakarta: Yuma Pressino.
- Sugerman. (2016). *Morfologi Bahasa Indonesia: Kajian ke arah linguistik deskriptif*. Yogyakarta: Penerbit Ombak.
- Suhartono, D., D. Christiandy & R. Rolando. (2014). Lemmatization technique in Bahasa: Indonesian language. *Journal of Software*, 9.
- Sutanto, I. (2002). Verba berkata dasar sama dengan gabungan afiks meN-i atau meN-kan. *Makara, Sosial-Humaniora*, 6(2), 82–87.
- Tjia, J. (2015). Grammatical relations and grammatical categories in Malay: The Indonesian prefix meN- revisited. *Wacana*, 16(1), 105–132.
- Tomaschek, F., B. V. Tucker, M. Wieling & R. H. Baayen. (2014). Vowel articulation affected by word frequency. In *10th international seminar on speech production* (pp. 425–428).
- Tomaschek, F., M. Wieling, D. Arnold & R. H. Baayen. (2013). Word frequency, vowel length and vowel quality in speech production: An ema study of the importance of experience. In *INTERSPEECH* (pp. 1302–1306).
- Tomasowa, F. H. (2007). The reflective experiential aspect of meaning of the affix -i in Indonesian. *Linguistik Indonesia*, 25(2), 83–96.
- Verhaar, J.W.M. (2010). *Asas-asas linguistik umum*. Yogyakarta: Gadjah Mada University Press.
- Rajeg, G.P.W. (2013). Metonymy in Indonesian prefixal word formation. *Lingual: Journal of Language and Culture*, 1(2), 64–81. <https://doi.org/10.4225/03/58f2ffbfd547b>

ⁱ *peN-* can function as an adjectival prefix, as in *diam* ‘silent’ – *pendiam* ‘silent person’ and *malu* ‘shy’ – *pemalu* ‘shy person’. In this paper, I will focus more on the nominalisation to facilitate equal comparison with *pe-* and *per-*.