Relativization Asymmetries in Philippine-Type Languages: A Preliminary Investigation

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Philippine-type Austronesian languages possess a relativization constraint that allows only the syntactically pivotal phrase to undergo extraction. This paper revisits this claim and reports previously understudied variation within these languages. While several researchers claim an extraction restriction in Philippine-type voice only to the pivot argument, previous theoretical and experimental work have reported the permissibility of the agent non-pivot argument for extraction, particularly in Tagalog. This extraction phenomenon is further explored with native speaker judgments on five Philippine-type languages: Pangasinan, Western Subanon, Blaan, Akeanon, and Cebuano. The findings showed that in all five languages, the pivot argument is the most accessible element for relativization using the gap strategy. Yet, two of the languages surveyed also allowed the relativization of the non-pivot agent. This finding is aligned with previous work that suggests the greater degree of markedness of non-pivot agents in the accessibility hierarchy compared to pivots. The implications and recommendations for future research are discussed.

1. BACKGROUND. This paper extends previous work by probing relativization asymmetries in languages with a Philippine-type voice system. It has been claimed that extraction in Philippine-type voice is restricted to the pivot argument (e.g., Aldridge, 2004; Erlewine et al., 2017). However, a gradually increasing number of theoretical and experimental work have demonstrated the accessibility of the agent non-pivot argument for extraction in Tagalog (e.g., Cena & Nolasco, 2011; Pizarro-Guevara & Wagers, 2020; Tanaka et al., 2019). The current study presents data that illustrate the relativizability of the agent non-pivot argument via the gap strategy in some of the languages under study, like what has been observed in Tagalog. Future research avenues on examining the generalizability of the current finding is encouraged.

1.1. Relativization. One of the most frequently studied syntactic phenomena is relativization. Relativization involves the modification of a noun phrase by a clause (Comrie, 1989; Payne, 1997). Sentence (1) provides an example of relativization, in which the clause *who reported the symptom* modifies the noun *woman*.

(1) The therapist assessed the woman$_i$ [who ___$_i$ reported the symptom].
(2) The woman reported the symptom.

Relativization results in the formation of a larger noun phrase, comprised of the head noun, the noun that is modified, and, the relative clause (RC). A relativizer such as English *who*, *which*, or *that* can link the head and the relative clause (O'Grady, 2011).

It has been widely observed across languages that relative clauses can be formed in two distinct strategies: one that takes a nominal element in a typical declarative clause, such as (2), and transforms it to a head noun, leaving a *gap* in the original clause. The alternative strategy forms the relative clause in the same manner, except that a resumptive pronoun referring to the head noun fills in the gap, as in (3). The resumptive pronoun strategy is generally not possible in English, but is common in some languages like Irish, as shown in (4) (McCloskey, 2012):

(3) *The therapist assessed the woman$_i$ [who she$_i$ reported the symptom].

(4) an fear$_i$ [ar bhuail tú é$_i$]
    the man REL struck you him
    'the man that you struck (him)'   (McCloskey, 2012:73)

1.1. Accessibility of NPs to Relativization. There is variation with respect to which nominal elements can be relativized within a language. In general, this variation can be viewed in terms of markedness: in any language, less marked forms are more accessible to the relativization operation than more marked forms. Keenan and Comrie (1977) used grammatical relations to create an *accessibility hierarchy* for relativization, commonly applied to nominative-accusative languages. This hierarchy posits that all languages should be able to relativize at least subjects, and that when a certain language is capable of relativizing an element at a certain point in the hierarchy (using the *gap strategy*), all higher elements can also be relativized using the gap strategy. Viewing the hierarchy using the perspective of markedness, subjects are the least marked, followed by direct objects, and so on; objects of comparison are the most marked form.

(5) Keenan and Comrie (1977) accessibility hierarchy for relativization:
 subject > direct object > indirect object > oblique > genitive > object of comparison

This accessibility hierarchy can be illustrated by using the following examples of relative clauses from English and Spanish. In English, all of the elements in the hierarchy can be relativized via the gap strategy (6–11); in contrast, Spanish only allows relativization of the genitives and the higher elements in the hierarchy (12–17); the object of comparison is not relativizable (17).

English RCs

(6) the pathologist [who ___ examined the sample]   (subject RC)

(7) the sample [which the pathologist examined ___]   (direct object RC)

(8) the woman [who the pathologist took the sample from ____]
                                       (indirect object RC)

(9) the beaker [where the pathologist placed the sample in _____]

(oblique RC)

(10) the woman [who the pathologist has the test results of _____]

(genitive RC)

(11) the woman [who the man is more drowsy than _____]

(object of comparison RC)

Spanish RCs[1]

(12) el   doctor   [que ___   trató   la   mujer]
    DET   doctor   REL   treat.PST   DET   woman
    'the doctor who treated the woman'

(subject RC)

(13) la   mujer   [que el   doctor   examinó ___]
    DET   woman   REL DET doctor   examine.PST
    'the woman whom the doctor examined'

(direct object RC)

(14) la   mujer   [a quien el   doctor dio   la   medicina _____]
    DET woman   to REL   DET doctor   give.PST   DET medicine
    'the woman to whom the doctor gave the medicine'

(indirect object RC)

(15) el   frasco [en donde la   mujer   puso   la   medicina _____]
    DET   bottle in REL   DET woman   put.PST DET medicine
    'the bottle where the woman put the medicine'

(oblique RC)

(16) el   doctor   [de quien   el   hombre es   un   paciente _____]
    DET doctor   of REL   DET man   is DET   patient
    'the doctor whom the man is a patient of'

(genitive RC)

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[1] I thank J. Lopez for the relative clause data in Spanish.

4

(17) *el   hombre [que la   mujer   está   más   enfermo que ____]
    DET man   REL DET woman is   more ill   than
    for: 'the man whom the woman is more ill than'

<div align="right">(object of comparison RC)</div>

However, the applicability of the Keenan and Comrie hierarchy is called into question when the grammatical relations in the hierarchy, such as "subject" and "direct object," do not have exact equivalents in languages that do not have nominative-accusative alignment. To factor in these differences, some researchers have tried to propose alternative accessibility hierarchies for languages with other alignment systems. For example, Liao (1999/2000) suggests the following accessibility hierarchy for ergative-absolutive languages. The absolutive NP is the least marked element, followed by the ergative NP, and so on; the object of comparison remains the most marked form. An ergative-absolutive language that permits relativization at a certain point in the hierarchy using the gap strategy should allow all higher elements to be accessible for relativization with the same strategy.

(18) Liao's (1999/2000) modified accessibility hierarchy for ergative-absolutive languages:
  absolutive > ergative > indirect object > oblique > genitive > object of comparison

1.2. Relativization Accessibility in Philippine-Type Voice Languages. A class of languages that has been controversial in terms of their typological properties is Philippine-type voice, which is the focus of this paper.[2] A signature property of the Philippine-type voice system is the presence of voice morphology on the verb that selects one of the arguments as syntactically prominent, often called the *pivot*. In the literature, the pivot has also been called as the *nominative*, *absolutive*, *trigger*, *primary argument*, *privileged syntactic argument*, *focused element*, and more controversially, the *subject*. Throughout, I will be using the term pivot to refer to the syntactically prominent argument, adopting the term from other scholars (Chen & McDonnell, 2019; Foley, 1998; Himmelmann, 2005; Næss, 2015; Riesberg, 2014; Zúñiga & Kittilä, 2019). While the pivot has been linked with various constructs such as specificity or information structure (e.g., Chen, 2017; Collins, 2017; Rackowski,

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[2] This paper does not argue about the appropriate typological alignment for these languages.

2002; Rackowski & Richards, 2005), this paper restricts the notion of the pivot in terms of its accessibility to syntactic phenomena such as in relativization. This signature voice property of Philippine-type voice languages is exemplified in the following two Tagalog sentences:

(19) Nag-suri[3]   ang   doktor   ng   bata.
    AV.PRF-examine PIV   doctor   NPIV child
    'The doctor examined a/the child.'

                                                          (agent voice)

(20) S<in>uri   ng   doktor   ang   bata.
    <PV.PRF>examine NPIV   doctor   PIV   child
    'The doctor examined the child.'

                                                         (patient voice)

Sentence (19) contains a verb in the *agent voice* (AV), marked by the agent voice affix [*nag-*]. The agent argument *doktor* 'doctor' is marked by *ang* [aŋ], making it the *pivot*. The non-pivot patient argument *bata* 'child' is marked with *ng* [naŋ]. In contrast, the same verb *suri* 'to examine' in sentence (20) is marked with the *patient voice* infix (PV) [*-in-*].[4] The patient argument *bata* 'child' is now marked with *ang*, hence making it the pivot; the agent element *doktor* 'doctor' is marked with the non-pivot marker *ng*. The phrase markers in Tagalog are summarized in TABLE 1.

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[3] There are three agent voice affixes in Tagalog: [mag-], [-um-], and [maN-]. Tagalog verbs differ with regard to the agent voice affixes they take (Pittman, 1966; Ramos, 1974; Schachter & Otanes, 1972). For the purposes of consistency, verbs that take the [mag-] affix such as *suri* 'to examine' in this example and *luto* 'to cook' (in the data) were used in this paper. I believe that there would be no difference in the relativization accessibility if an agent voice verb taking [-um-] or [maN-] affixes were used.

[4] There is an analysis in Tagalog that identifies the suffix [-in] as the patient voice affix, and [-in-] as the perfective affix. The infix is retained and the suffix is deleted in the patient voice (R. A. Blust & Chen, 2017; Kroeger, 1993; Maclachlan, 1992; Rackowski, 2002). For the purposes of simplicity, the [-in-] form is identified as the patient voice morphology.

TABLE 1. Different phrase markers in Tagalog.

Function		Phrase markers (for common nouns)
Pivot		ang
Non-Pivot		ng
Oblique	Locative	sa
	Benefactive	para_sa
	Instrumental	sa_pamamagitan_ng, gamit_ang
	Causative	dahil_sa

Himmelmann (2005) mentions a subset of languages that are identified as Philippine-type voice. These are characterized by the presence of at least two different undergoer (non-agent) voice types—case-type markers for nominal arguments, and pronouns that exhibit second position clitic behavior. He classifies Philippine languages, most Formosan languages, selected northern languages of Borneo, and some northern Sulawesi languages as belonging to the category of Philippine-type languages. Tagalog, a major language spoken in the Philippines, is typically believed to have Philippine-type voice.

The status of subjecthood in Philippine-type voice languages has been heavily debated in the literature. Some consider the pivot element as the subject (e.g., Guilfoyle et al., 1992; Kroeger, 1993; Riesberg, 2014), while some consider the agent as the subject (e.g., Chen, 2017; Schuelke & Mortensen, 2018). Other authors associate subjecthood properties to both the pivot and the agent element (e.g., Schachter, 1976).

The controversy over the status of subjecthood as well as other grammatical relations (e.g., direct object) in Philippine-type voice languages raises questions regarding the applicability of the Keenan and Comrie hierarchy to this class of languages. Nonetheless, the pivot has been taken in the literature to be the most

accessible element to syntactic operations such as relativization (e.g., Kroeger, 1993; Riesberg, 2014; Schachter, 1976). Erlewine and colleagues (2017) claims an *Austronesian Extraction Restriction* hypothesis, which states that only the pivot (which they refer to as the "subject") is accessible to syntactic phenomena such as relativization. In a similar vein, Aldridge (2004) proposes an *Absolutive Extraction Restriction* (with her analysis of the pivot as "absolutive") for languages with a Philippine-type voice system.

However, more recent evidence from the experimental literature on Tagalog has shown for the accessibility of other elements besides the pivot for relativization using the gap strategy. Using a series of psycholinguistic experiments, Pizarro-Guevara and Wagers (2016, 2018, 2020) demonstrated the accessibility of the agent non-pivot to A'-extraction, with speakers expressing a higher degree of acceptability for agent non-pivot extraction in the patient voice in relativization, as compared to topicalization or *ay*-inversion. Bondoc and colleagues (2018), Tanaka (2016), and Tanaka and colleagues (2019) demonstrated evidence that both typically-developing adults and children produce relative clause patterns in the patient voice with an agent non-pivot head. Examples of these Tagalog relative clauses are shown below.

(21a) Extraction of agent pivot in AV

doktor	na	nag-suri[5]	ng	bata
doctor	REL	AV.PRF-examine	NPIV	child

‘doctor who examined the child’

(21b) Extraction of patient non-pivot in AV

*bata	na	nag-suri	ang	doktor
bata	REL	AV.PRF-examine	PIV	doctor

for: ‘child who the doctor examined’

(22a) Extraction of patient pivot in PV

bata	na	s<in>uri	ng	doktor
bata	REL	<PV.PRF>examine	PIV	doctor

‘child who the doctor examined’

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[5] Refer to footnote 3 for a brief comment regarding the various agent voice affixes in Tagalog.

(22b) Extraction of agent non-pivot in PV
      doktor   na   s<in>uri   ang   bata
      doctor   REL   <PV.PRF>examine PIV   child
      'doctor who examined the child'

Considering the unique syntactic properties of these languages, the hierarchies proposed by Keenan and Comrie (1977) may not necessarily be applicable to languages with this system. Furthermore, the current experimental evidence on Tagalog calls for the need to look at other languages to re-evaluate the Austronesian Extraction Restriction. This paper revisits the claims made about the accessibility of elements to relativization in these languages. Based on data from five languages demonstrating Philippine-type voice, the following questions will be explored:

(a) Which elements can be relativized via the gap strategy in a sample of Philippine-type voice languages?

(b) What similarities and differences can be observed regarding the relativization patterns of these selected languages?

(c) What accessibility hierarchy for relativization can be proposed for these languages?

A possible prediction would be to expect pivot-only extraction for Philippine-type voice languages, as reported in the literature. A pivot-only extraction finding would be consistent with claims such as the Austronesian Extraction Restriction (Erlewine et al., 2017) or the Absolute Extraction Restriction (Aldridge, 2004). However, if any of the Philippine-type voice languages were to permit relativization of an element besides the pivot, this would entail the need to formulate a different hierarchy that factors in these elements in varying degrees of markedness. Furthermore, this finding could cast doubt on the universal applicability of the Keenan and Comrie hierarchy, given that some of the marked elements (e.g., pivot) in Philippine-type languages do not share the properties of the grammatical relations in nominative-accusative languages. As a case in point, a problem to be encountered with considering pivots to be subjects would be to find no logical equivalents of other grammatical relations, such as direct objects, in Philippine-type languages (elements such as non-pivot agents would be unusual for this category).

2. METHOD. Data were made up of grammaticality judgments provided by native speakers of five languages exhibiting Philippine-type voice. These five languages were selected based on the different Philippine language microgroups they were classified under (Blust, 1991). Each language is briefly described below.

TABLE 2. Descriptions on the languages surveyed in the study.

	Language Surveyed	Microgroup Classification (Blust, 1991)	EGIDS Classification (Eberhard et al., 2020)	Geographical Region Spoken	Native Speaker Population (Eberhard et al., 2020)
1	Pangasinan	Cordilleran	language of wider communication	Pangasinan and nearby provinces	1,243,660
2	Western Subanon	Greater Central Philippine (Subanon branch)	developing language	Zamboanga Peninsula	125,000
3	Blaan	Bilic	language of wider communication	South Cotabato, Sarangani, and Davao del Sur	240,800
4	Akeanon	Greater Central Philippine (Central Philippine branch)	educational language	Western Visayas Region	549,600
5	Cebuano	Greater Central Philippine (Central Philippine branch)	language of wider communication	Visayas region, and in selected parts of Southern Luzon and Mindanao	15,942,480

At least one native speaker was consulted for every language in the study. Reports of inter-speaker agreement were included in cases where there is more than one speaker. Declarative sentences in the various voice types were elicited for every language. Each argument in every voice type was then tested for its relativizability via the gap strategy, and the native speakers provided their judgments on the grammatical acceptability of these relative clauses.

The relative clauses were constructed by the researcher, after equivalents of the declarative sentences were elicited. The relative clause constructions followed the general head-initial pattern as described in the literature. All relative clauses were presented to the speakers in writing. After the judgments of the native speaker consultants were given, they were asked to explain (as best they could) what made particular relative clauses ungrammatical, how those sentences can be improved, and what alternative patterns would there be in forming relative clauses. This process ensured that the ungrammaticality of the patterns stemmed from factors such as the mismatch between the relativized head and the voice morphology, and not because of other factors such as a missing particle. In some cases, the tested relative clauses were embedded in a matrix clause (e.g., *"I saw… the man [$_{RC}$ who ___ cooked rice]"*) to cross-check their acceptability. All responses were recorded online.

While this method of asking grammatical judgments via native speaker intuitions remains common in descriptive linguistics, language documentation, and formal syntax, such means limit the generalizability of these findings to a wider population. This point is re-emphasized in the Discussion section, along with suggestions on how to further implement a more in-depth investigation of relativization in these languages.

3. RESULTS. This section discusses the voice marking patterns for each of the languages surveyed in the study, along with the relevant observations on their acceptable relativization patterns.

3.1. Pangasinan. Pangasinan allows the agent, patient, locative, instrument, and benefactive arguments to be marked as pivot, as illustrated in examples (23a), (24a), (25a), (26a), and (27a). Across all voice types in Pangasinan, the pivot is the only element that can be relativized via the gap strategy; non-pivot or oblique elements cannot be relativized.

(23a) Agent voice (AV)

Nan-luto	so	laki	ya	baaw	ed	banga
AV.PRF-cook	PIV	man	NPIV	rice	LOC	pot

parad_samay	ogaw	gamit_so	kiew.
BEN	child	INS	wood

'The man cooked rice in the pot for the child with the wood.'

(23b) Extraction of agent pivot in AV

laki	ya	[nan-luto	___	ya	baaw …]
man	REL	AV.PRF-cook		NPIV	rice

'man who cooked rice'

(23c) Extraction of patient non-pivot in AV

*baaw	ya	[nan-luto	so	laki	___ …]
rice	REL	AV.PRF-cook	PIV	man	

for: 'rice that the man cooked'

(23d) Extraction of oblique in AV

*banga/ogaw/kiew ya	[nan-luto	so	laki	ya	baaw __ …]
pot/child/wood	REL	AV.PRF-cook	PIV	man	NPIV rice

for: 'pot where/child for whom/wood with which the man cooked rice'

(24a) Patient voice (PV)

In-luto	ya	laki	so	baaw	ed	banga
PV.PRF-cook	NPIV	man	PIV	rice	LOC	pot

parad_samay	ogaw	gamit_so	kiew.
BEN	child	INS	wood

'The man cooked the rice in the pot for the child using the wood.'

(24b) Extraction of patient pivot in PV

baaw	ya	[in-luto	ya	laki	___ …]
rice	REL	PV.PRF-cook	NPIV	man	

'rice that the man cooked'

(24c) Extraction of agent non-pivot in PV

        *laki   ya   [in-luto ___   so   baaw …]
        man   REL   PV.PRF-cook   PIV   rice
        for: 'man that cooked the rice'

(24d) Extraction of oblique in PV

        *banga/ogaw/kiew ya   [in-luto   ya   laki   so   baaw ___ …]
        pot/child/wood   REL PV.PRF-cook NPIV man   PIV   rice
        for: 'pot where/child for whom/wood with which the man cooked the
                rice'

(25a) Locative voice (LV)

        Nan-lutu-an   ya   laki   ya   baaw so   banga
        LV.PRF-cook-LV   NPIV man   NPIV rice   PIV   pot

        parad_samay   ogaw   gamit_so kiew.
        BEN   child   INS   wood
        'The man cooked rice in the pot for the child using the wood.'

(25b) Extraction of locative pivot in LV

        banga ya   [nan-lutu-an   ya   laki   ya   baaw ___ …]
        pot   REL LV.PRF-cook-LV NPIV man   NPIV rice
        'pot where the man cooked rice'

(25c) Extraction of agent non-pivot in LV

        *laki ya   [nan-lutu-an   ___ ya   baaw so   banga …]
        man REL   LV.PRF-cook-LV   NPIV   rice   PIV pot
        for: 'man who cooked rice in the pot'

(25d) Extraction of patient non-pivot in LV

        *baaw ya   [nan-lutu-an   ya   laki   ___ so   banga …]
        rice   REL   LV/PRF-cook-LV NPIV man   PIV   pot
        for: 'rice which the man cooked in the pot'

(25e) Extraction of oblique in LV
    *ogaw/kiew ya [nan-lutu-an   ya   laki ya   baaw ___ …]
    child/wood REL LV.PRF-cook-LV NPIV man NPIV rice
    for: 'child for whom/the wood with which the man cooked rice'

(26a) Benefactive voice (BV)
    In-lutu-an   ya   laki   ya   baaw so   ogaw
    BV.PRF-cook-   NPIV man NPIV rice   PIV   child
    ed   banga gamit_so kiew.
    LOC   pot   INS   wood
    'The man cooked rice in the pot for the child using the wood.'

(26b) Extraction of benefactive pivot in BV
    ogaw ya [in-lutu-an   ya   laki   ya   baaw ___ …]
    child REL BV.PRF-cook-BV NPIV man NPIV rice
    'child for whom the man cooked rice'

(26c) Extraction of agent non-pivot in BV
    *laki ya   [in-lutu-an   ___ ya   baaw so   ogaw …]
    man REL BV.PRF-cook-BV   NPIV rice PIV   child
    for: 'man who cooked rice for the child'

(26d) Extraction of patient non-pivot in BV
    *baaw ya   [in-lutu-an   ya   laki ___ so   ogaw …]
    rice   REL BV.PRF-cook-BV NPIV man   PIV   child
    for: 'rice that the man cooked for the child'

(26e) Extraction of oblique in BV
    *banga/kiew ya [in-lutu-an   ya   laki so ogaw ___ …]
    pot/wood   REL BV.PRF-cook-BV NPIV man PIV child
    for: 'pot where/wood with which the man cooked for the child'

(27a) Instrumental voice (IV)
    Impan-luto ya laki ya   baaw so   kiew
    IV.PRF-cook NPIV man NPIV rice PIV   wood

ed banga parad_samay ogaw.
LOC pot BEN   child
'The man cooked rice in the pot for the child using the wood.'

(27b) Extraction of instrumental pivot in IV
   kiew ya [impan-luto ya laki ya baaw ___ …]
   wood REL IV.PRF-cook NPIV man NPIV rice
   'wood that the man cooked rice with'

(27c) Extraction of agent non-pivot in IV
   *laki ya [impan-luto ___ ya   baaw so kiew …]
   man REL IV.PRF-cook   NPIV rice PIV wood
   for: 'man who cooked rice with the wood'

(27d) Extraction of patient non-pivot in IV
   *baaw ya [impan-luto ya laki ___ so kiew …]
   rice REL IV.PRF-cook NPIV man   PIV wood
   for: 'rice that the man cooked with the wood'

(27e) Extraction of oblique in IV
   *banga ya [impan-luto ya laki ya baaw ___ so kiew …]
   pot REL IV.PRF-cook NPIV man NPIV rice   PIV wood
   for: 'pot where the man cooked rice with the wood'

3.2. Western Subanon. Western Subanon allows agent, patient, and locative arguments to function as pivots [examples (28a), (29a), and (30a)]. The data illustrate that all pivots are accessible to relativization via the gap strategy. No non-pivots or obliques are relativizable.

(28a) Agent voice (AV)
   Mig-apuy og laki nog   gomoy sog kulon.
   AV-cook PIV man NPIV   rice   LOC pot
   'The man cooked rice in the pot.'

(28b) Extraction of agent pivot in AV

og   laki kitu nog [mig-apuy ___ nog   gomoy sog   kulon]
PIV man DEM REL AV-cook   NPIV rice   LOC   pot
'that man who cooked rice in the pot'

(28c) Extraction of patient non-pivot in AV

*og   gomoy kitu   nog [mig-apuy og laki ___ sog   kulon]
PIV rice   DEM REL AV-cook PIV man   LOC pot
for: 'that rice that the man cooked in the pot'

(28d) Extraction of oblique in AV

*og   kulon kitu nog [mig-apuy og laki   nog   gomoy ___]
PIV   pot   DEM REL AV-cook PIV man NPIV rice
for: 'that pot where the man cooked rice'

(29a) Patient voice (PV)

K<in>an nog   laki kitu og   gomoy   sog   atup
<PV>eat NPIV   man DEM PIV   rice   LOC   roof
'That man ate the rice on the roof.'

(29b) Extraction of patient pivot in PV

og   gomoy kitu nog [k<in>an nog   laki   kitu ___ sog   atup]
PIV rice   DEM REL <PV>eat NPIV man   DEM   LOC roof
'that rice that that man ate on the roof'

(29c) Extraction of agent non-pivot in PV

*og laki kitu nog [k<in>an ___ og gomoy sog   atup]
PIV man DEM REL <PV>eat   PIV rice   LOC roof
for: 'that man who ate the rice on the roof'

(29d) Extraction of oblique in PV

*og atup kitu   nog [k<in>an nog   laki kitu og gomoy __]
PIV roof DEM REL <PV>eat NPIV man DEM PIV rice
for: 'that roof where that man ate the rice'

(30a) Locative voice (LV)

In-oit-an   nog   laki kitu nog   gomoy og   libun kitu
LV-bring-LV NPIV man DEM NPIV rice   PIV woman DEM
'That man brought rice to that woman.'

(30b) Extraction of locative pivot in LV

og   libun   kitu   nog   [in-oit-an   nog   laki kitu   nog
PIV woman DEM REL LV-bring-LV NPIV man DEM NPIV

gomoy   ___]
rice

'that woman to whom that man brought rice'

(30c) Extraction of agent non-pivot in LV

*og laki kitu   nog   [in-oit-an   ___ nog   gomoy og   libun
PIV man DEM   REL LV-bring-LV   NPIV rice   PIV woman

kitu]
DEM
for: 'that man who brought rice to that woman'

(30d) Extraction of patient non-pivot in LV

*og gomoy kitu   nog   [in-oit-an   nog   laki kitu ___   og
PIV rice   DEM REL LV-bring-LV NPIV man DEM   PIV

libun   kitu]
woman DEM
for: 'that rice which that man brought to that woman'

3.3. Blaan. Blaan allows the selection of the agent, patient, locative, instrumental, and causative arguments as pivots, as illustrated in examples (31a), (32a), (33a), (34a), and (35a). Similar to Pangasinan and Western Subanon, Blaan allows relativization of only the pivot; non-pivots and obliques are not accessible to relativization.

(31a) Agent voice (AV)

T<m>agah i   lagi i   nalaf di   kulang
<AV>cook PIV man NPIV fish   LOC pot

    fagu_di   snuk   du_nun   kastifun.
    INS   firewood   CAU   feast
    'The man cooked fish in the pot with the firewood for the feast.'

(31b) Extraction of agent pivot in AV
       lagi i   [t<m>agah   ___   i   nalaf …]
       man REL   <AV>cook   NPIV   fish
       'man who cooked fish'

(31c) Extraction of patient non-pivot in AV
       *nalaf i   [t<m>agah   i   lagi   ___ …]
       fish   REL <AV>cook   PIV   man
       for: 'fish that the man cooked'

(31d) Extraction of oblique in AV
       *kulang/snuk/kastifun i   [t<m>agah i   lagi i   nalaf ___ …]
       pot/firewood/feast   REL <AV>cook PIV man NPIV fish
       for: 'pot where/firewood with which/feast for which the man cooked
                    fish'

(32a) Patient voice (PV)
       T<n>agah i   lagi   i   nalaf di   kulang
       <PV>cook NPIV man   PIV fish LOC   pot

       fagu_di   snuk   du_nun   kastifun.
       INS   firewood   CAU   feast
       'The man cooked the fish in the pot with the firewood for the feast.'

(32b) Extraction of patient pivot in PV
       nalaf i   [t<n>agah   i   lagi   ___ …]
       fish   REL <PV>cook   NPIV   man
       'fish that the man cooked'

(32c) Extraction of agent non-pivot in PV
       *lagi i   [t<n>agah ___   i   nalaf …]
       man REL   <PV>cook   PIV   fish
       for: 'man who cooked the fish'

(32d) Extraction of oblique in PV
    *kulang /snuk/kastifun i   [t<n>agah i   lagi i   nalaf ___ …]
    pot/firewood/feast   REL <PV>cook NPIV man PIV fish
    for: 'pot where/firewood with which/feast for which the man cooked
            the fish'

(33a) Locative voice (LV)
    Gu-t<m>agah i   lagi i   nalaf i   kulang
    LV-<LV>cook NPIV man NPIV fish   PIV   pot

    fagu_di   snuk   du_nun kastifun.
    INS   firewood CAU   feast
    'The man cooked fish in the pot with the firewood for the feast.'

(33b) Extraction of locative pivot in LV
    kulang i   [gu-t<m>agah i   lagi i   nalaf ___ …]
    pot   REL LV-<LV>cook NPIV man NPIV fish
    'pot where the man cooked fish'

(33c) Extraction of agent non-pivot in LV
    *lagi i   [gu-t<m>agah ___ i   nalaf i   kulang …]
    man REL LV<LV>cook   NPIV fish PIV   pot
    for: 'man who cooked fish in the pot'

(33d) Extraction of patient non-pivot in LV
    *nalaf i   [gu-t<m>agah i   lagi ___ i   kulang …]
    fish   REL LV-<LV>cook NPIV man   PIV   pot
    for: 'fish that the man cooked in the pot'

(33e) Extraction of oblique in LV
    *snuk/kastifun i   [gu-t<m>agah i   lagi i   nalaf
    firewood/feast REL LV-<LV>cook NPIV man NPIV fish

    i   kulang ___ …]
    PIV pot
    for: 'firewood with which/feast for which the man cooked fish in the
           pot'

(34a) Instrumental voice (IV)

Tagah	i	lagi	i	nalaf	i	snuk
IV.cook	NPIV	man	NPIV	fish	PIV	firewood

di	kulang	du_nun	kastifun.
LOC	pot	CAU	feast

'The man cooked fish in the pot with the firewood for the feast.'

(34b) Extraction of instrumental pivot in IV

snuk	i	[tagah	i	lagi	i	nalaf ___ …]
firewood	REL	IV.cook	NPIV	man	NPIV	fish

'firewood with which the man cooked fish'

(34c) Extraction of agent non-pivot in IV

*lagi i	[tagah	___	i	nalaf	i	snuk	…]
man	REL IV.cook		NPIV	fish	PIV	firewood	

for: 'man who cooked fish with the firewood'

(34d) Extraction of patient non-pivot in IV

*nalaf i	[tagah	i	lagi ___	i	snuk	…]
fish	REL IV.cook	NPIV	man	PIV	firewood	

for: 'fish that the man cooked with the firewood'

(34e) Extraction of oblique in IV

*kulang/kastifun	i	[tagah	i	lagi	i	nalaf	i
pot/feast		REL IV.cook	NPIV	man	NPIV	fish	PIV

snuk	___ …]
firewood	

for: 'pot where/feast for which the man cooked fish with the firewood'

(35a) Causative voice (CV)

Fati	i	bayani	i	ksenan	di	kasagla	fagu_di	ksamuk.
CV.die	NPIV	hero	PIV	freedom	LOC	war	INS	bloodshed

'The hero died in the war for [the] freedom by bloodshed.'

(35b) Extraction of causative pivot in CV
ksenan   i   [fati   i   bayani ___   di   kasagla …]
freedom   REL   CV.die NPIV hero   LOC   war
'freedom for which the hero died in the war'

(35c) Extraction of agent non-pivot in CV
*bayani i   [fati   ___   i   ksenan   di   kasagla …]
hero   REL   CV.die   PIV   freedom   LOC   war
for: 'hero who died in the war for [the] freedom'

(35d) Extraction of oblique in CV
*kasagla/ksamuk i   [fati   i   bayani i   ksenan   ___ …]
war/bloodshed   REL CV.die NPIV hero PIV   freedom
for: 'war where/bloodshed by which the hero died for [the] freedom'

3.4. Akeanon. Akeanon allows the selection of the agent, patient, and locative arguments as pivots [examples (36a), (37a), (38a)]. In contrast with the languages discussed above, Akeanon allows relativization of not just the pivot, but also of the non-pivot agent argument.

(36a) Agent voice (AV)
Nag-eaha   ro   eaki it   humay   sa   kueon
AV.PRF-cook PIV   man NPIV rice   LOC   pot
'The man cooked rice in the pot.'

(36b) Extraction of agent pivot in AV
eaki nga [nag-eaha   ___   it   humay …]
man REL AV.PRF-cook   NPIV   rice
'man who cooked rice'

(36c) Extraction of patient non-pivot in AV
*humay nga [nag-eaha   ro   eaki ___ …]
rice   REL AV.PRF-cook PIV   man
for: 'rice that the man cooked'

(36d) Extraction of oblique in AV
    *kueon nga [nag-eaha ro eaki ___ …]
    pot REL AV.PRF-cook PIV man
    for: 'pot where the man cooked'

(37a) Patient voice (PV)
    Gin-eaha it eaki ro humay sa kueon
    PV.PRF-cook NPIV man PIV rice LOC pot
    'The man cooked the rice in the pot.'

(37b) Extraction of patient pivot in PV
    humay nga [gin-eaha it eaki ___…]
    rice REL PV.PRF-cook NPIV man
    'rice that the man cooked'

(37c) Extraction of agent non-pivot in PV
    eaki nga [gin-eaha ___ ro humay …]
    man REL PV.PRF-cook PIV rice
    'man who cooked the rice'

(37d) Extraction of oblique in PV
    *kueon nga [gin-eaha it eaki ro humay ___ …]
    pot REL PV.PRF-cook NPIV man PIV rice
    for: 'pot where the man cooked the rice'

(38a) Locative voice (LV)
    Gin-eaha-an it eaki ro kueon it humay.
    PRF-cook-LV NPIV man PIV pot NPIV rice
    'The man cooked rice in the pot.'

(38b) Extraction of locative pivot in LV
    kueon nga [gin-eaha-an it eaki ___ it humay …]
    pot REL PRF-cook-LV NPIV man NPIV rice
    'pot where the man cooked rice'

(38c) Extraction of agent non-pivot in LV
       eaki nga [gin-eaha-an ___ ro   kueon it   humay …]
       man   REL PRF-cook-LV   PIV pot   NPIV rice
       'man who cooked rice in the pot'

(38d) Extraction of patient non-pivot in LV
       *humay nga   [gin-eaha-an it   eaki ___ ro   kueon …]
       rice   REL   PRF-cook-LV   NPIV man   PIV pot
       for: 'rice that the man cooked in the pot'

3.5. Cebuano. Cebuano has voice patterns that take the agent, patient, locative, instrumental, and causative arguments as pivots, as illustrated in sentences (39a), (40a), (41a), (42a), and (43a). As with all surveyed languages in the study, Cebuano allows relativization of the pivot argument. It is similar to Akeanon, however, with its acceptable extraction of the agent non-pivot argument for relativization. Other non-pivots and obliques are not accessible to relativization.

(39a) Agent voice (AV)
       Nag-luto   ang   lalaki og   kan-on sa   kulon
       AV.PRF-cook   PIV   man   NPIV   rice   LOC   pot

       gamit_ang sugnod   tungod_sa kasaulugan.
       INS   firewood   CAU   feast
       'The man cooked rice in the pot with the firewood for the feast.'

(39b) Extraction of agent pivot in AV
       lalaki   na   [nag-luto ___   og   kan-on sa   kulon …]
       man   REL AV.PRF-cook   NPIV rice   LOC   pot
       'man who cooked rice in the pot'

(39c) Extraction of patient non-pivot in AV
       *kan-on nga   [nag-luto   ang lalaki ___ sa   kulon …]
       rice   REL   AV.PRF-cook   PIV man   LOC   pot
       for: 'rice that the man cooked in the pot'

(39d) Extraction of oblique in AV
    *kulon/sugnod/kasaulugan nga   [nag-luto   ang lalaki og
    pot/firewood/feast   REL   AV.PRF-cook PIV man NPIV

    kan-on ___ …]
    rice
    for: 'pot where/firewood with which/feast for which the man cooked
          rice'

(40a) Patient voice (PV)
    Gi-luto   sa   lalaki ang   kan-on sa   kulon
    PV.PRF-cook NPIV man PIV   rice   LOC pot

    gamit_ang sugnod   tungod_sa   kasaulugan.
    INS   firewood   CAU   feast
    'The man cooked the rice in the pot with the firewood for the feast.'

(40b) Extraction of patient pivot in PV
    kan-on nga [gi-luto   sa   lalaki ___ sa   kulon …]
    rice   REL PV.PRF-cook NPIV man   LOC   pot
    'rice that the man cooked in the pot'

(40c) Extraction of agent non-pivot in PV
    lalaki nga [gi-luto   ___ ang   kan-on sa   kulon …]
    man REL PV.PRF-cook   PIV   rice   LOC pot
    'man who cooked the rice in the pot'

(40d) Extraction of oblique in PV
    *kulon/sugnod/kasaulugan nga   [gi-luto   sa   lalaki ang
    pot/firewood/feast   REL   PV.PRF-cook   NPIV man PIV

    kan-on___ …]
    rice
    for: 'pot where/firewood with which/feast for which the man cooked
          the rice'

(41a) Locative voice (LV)

Gi-lutu-an   sa   lalaki og   kan-on   ang   kulon
PRF-cook-LV NPIV man   NPIV rice   PIV   pot

gamit_ang sugnod   tungod_sa   kasaulugan.
INS   firewood   CAU   feast
'The man cooked rice in the pot with the firewood for the feast.'

(41b) Extraction of locative pivot in LV

kulon nga [gi-lutu-an   sa   lalaki og   kan-on ___ …]
pot   REL PRF-cook-LV NPIV man   NPIV rice
'pot where the man cooked rice in the pot'

(41c) Extraction of agent non-pivot in LV

lalaki nga   [gi-lutu-an   ___ sa   kan-on   ang   kulon …]
man   REL PRF-cook-LV   NPIV rice   PIV   pot
'man who cooked rice in the pot'

(41d) Extraction of patient non-pivot in LV

*kan-on nga   [gi-lutu-an   sa   lalaki ___   sa   kulon …]
rice   REL PRF-cook-LV   NPIV man   LOC pot
for: 'rice that the man cooked in the pot'

(41e) Extraction of oblique in LV

*sugnod/kasaulugan nga [gi-lutu-an   sa   lalaki og   kan-on
firewood/feast   REL PRF-cook-LV NPIV   man PIV rice

ang   kulon ___…]
PIV pot
for: 'firewood with which/feast for which the man cooked rice in the
          pot'

(42a) Instrumental voice (IV)

Gipang-luto   sa   lalaki og   kan-on ang sugnod
IV.PRF-cook NPIV man   NPIV rice   PIV firewood

sa   kulon tungod_sa   kasaulugan.
LOC   pot   CAU   feast
'The man cooked rice in the pot with the firewood for the feast.'

(42b) Extraction of instrumental pivot in IV
       sugnod   nga [gipang-luto sa   lalaki og   kan-on   ___ …]
       firewood REL IV.PRF-cook NPIV man   NPIV rice
       'firewood with which the man cooked rice'

(42c) Extraction of agent non-pivot in IV
       lalaki nga [gipang-luto ___ sa   kan-on ang   sugnod   …]
       man REL IV.PRF-cook   NPIV rice   PIV   firewood
       'man who cooked rice with the firewood'

(42d) Extraction of patient non-pivot in IV
       *kan-on nga [gipang-luto   sa   lalaki ___ ang   sugnod   …]
       rice   REL IV.PRF-cook NPIV man   PIV   firewood
       for: 'rice that the man cooked with the firewood'

(42e) Extraction of oblique in IV
       *kulon/kasaulugan nga [gipang-luto sa   lalaki ang sugnod __…]
       pot/feast   REL IV.PRF-cook NPIV man PIV firewood
       for: 'pot where/feast for which the man cooked with the firewood'

(43a) Causative voice (CV)
       Gika-maty-an   sa   bayani   ang   pakig-away
       CV.PRF-die-CV   NPIV hero   PIV   fighting

       sa   gubat pinaagi_sa   pagkabayolente.
       LOC   war   INS   bloodshed
       'The hero died of fighting in the war by bloodshed.'

(43b) Extraction of causative pivot in CV
       pakig-away nga [gika-maty-an   sa   bayani sa   gubat ___ …]
       fighting   REL CV.PRF-die-CV NPIV hero   LOC war
       'fighting of which the hero died in the war'

(43c) Extraction of agent non-pivot in CV
       bayani nga [gika-maty-an   ___ ang pakig-away sa   gubat …]
       hero REL CV.PRF-die-CV   PIV fighting   LOC war
       'hero who died of fighting in the war'

(43d) Extraction of oblique in CV

    *gubat/pagkabayolente   nga   [gika-maty-an   sa   bayani ang
    war/bloodshed   REL   CV.PRF-die-CV   NPIV hero   PIV

    pakig-away __…]
    fighting
    for: 'war where/bloodshed by which the hero died of fighting'

4. DISCUSSION. The current study investigated a potential accessibility hierarchy for relativization via the gap strategy in languages with a Philippine-type voice system. TABLE 3 below summarizes the observations.

TABLE 3. Summary of relativizable elements in the five languages surveyed.

	Language Subgroup	Language	Pivot	Non-Pivot Agent	Other Non-Pivots and Obliques
1	AN: WMP: PH: Cordilleran	Pangasinan	✓	✗	✗
2	AN: WMP: PH: GCP: Subanon	Western Subanon	✓	✗	✗
3	AN: WMP: PH: Bilic	Blaan	✓	✗	✗
4	AN: WMP: PH: GCP: Central Phils	Akeanon	✓	✓	✗
5	AN: WMP: PH: GCP: Central Phils	Cebuano	✓	✓	✗

The results clearly show that the pivot is consistently the most accessible element for relativization, as is reported in earlier literature (Aldridge, 2004; Erlewine et al., 2017; Schachter, 1976). Hence, we would expect the pivot to be at the top of the accessibility hierarchy. Furthermore, in addition to previous theoretical and experimental work that reported the accessibility of the agent non-pivot to relativization in Tagalog (Cena & Nolasco, 2011; Pizarro-Guevara & Wagers, 2016, 2018, 2020; Tanaka, 2016; Tanaka et al., 2019), there were also

observations from the current data of agent non-pivot extractability in other languages such as in Akeanon and Cebuano. The other non-pivots and oblique elements, on the other hand, were shown to be not accessible for relativization.

These results are suggestive of a *Pivot > Agent Non-pivot* accessibility hierarchy hypothesis for Philippine-type voice languages.[6] This potential hierarchy also allows us to classify Philippine-type voice languages into two groups: a more conservative group of languages, which allow "pivot-only" extraction, at least for relativization; and a less conservative group, which allow the extraction of either the pivot or the agent non-pivot. It is worth exploring in future research whether the extraction of agent non-pivots in less conservative languages such as in Tagalog, Akeanon, and Cebuano is a case of historical innovation, given that these three languages belong to the same Central Philippine subgroup.[7] Extraction of the agent non-pivot in Bikol clefts, another Central Philippine language, has also been claimed (Erlewine & Lim, 2019). An investigation of more Central Philippine and other Philippine-type languages in future research would potentially determine whether the licensing of agent non-pivot for relativization remains a characteristic of just the Central Philippine subgroup.

Regardless of the cross-linguistic differences in morphosyntactic typology, variation in accessibility still somewhat appeals to a universal theory of markedness: less marked forms are more relativizable than more marked forms. Hence, in the case of Philippine-type voice languages, we can suppose that the pivot is the least marked element for relativization, followed by the agent non-pivot.

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[6] Note that the *patient non-pivots* and *obliques* are not part of this hypothesized hierarchy, because there is currently no evidence of their extraction for languages with Philippine-type voice. The validity of this proposed hierarchy, however, is open to question in future research, as more languages with Philippine-type voice and other syntactic phenomena are examined.

[7] The term "conservative" refers to the historical context where the upper-level parent languages (the primary branches of Proto-Austronesian) license only the pivot for extraction (Chen, 2017), and some of the lower-level parent languages (from which some of the daughter Philippine languages branched out) may have allowed innovations for other elements (such as the agent non-pivot) to be accessible for relativization as well.

Yet, these findings also bring forth the discordance of the Keenan and Comrie hierarchy to Philippine-type voice languages: the grammatical relations present in the Keenan and Comrie hierarchy, i.e., the subject and the direct object, do not have exact equivalents in Philippine-type voice languages. A reanalysis of the Keenan and Comrie hierarchy in terms of the pivot-as-subject hypothesis creates a problem for the equivalent element of the "direct object": the "non-pivot agent" does not have comparable syntactic properties of "direct objects." This mismatch in grammatical relations casts doubt on the applicability of the Keenan and Comrie hierarchy to the languages under study.

Investigations of languages such as these shed light on the long-standing puzzle of the nature of Philippine-type extraction restriction. One generalization that these studies offer is the identification of the element that is accessible to a variety of syntactic phenomena. Relativization patterns suggest that the "pivot" is the most accessible or the least marked element, followed by the agent non-pivot. Studies of other syntactic operations such as raising, control of secondary predicates, possessor ascension, and quantifier float concur with the pivot being the most accessible element (Aldridge, 2004; Guilfoyle et al., 1992; Kroeger, 1993; Riesberg, 2014; Schachter, 1976). However, a different picture emerges with other syntactic facts such as reflexive and variable binding, since they target an agent argument as antecedent, independent of whether it is also the pivot (Chen, 2017; Schuelke & Mortensen, 2018). The further development of any syntactic theory will need to factor in these clashing observations and calls for the need to further investigate understudied languages such as Philippine-type voice languages. In addition, future research can also examine how the accessibility hierarchy explored in this paper relates to other hierarchies observed in well-studied languages (e.g., specificity, grammatical relations, etc.).

The hypotheses brought forth in this paper are currently not fully generalizable due to the meager number of languages surveyed in the study, as well as limited participants and sentences. This restriction highlights the need to test the findings with more participants, and the proposed accessibility hierarchy with more Philippine-type voice languages. In addition, the possibility of investigating acceptability in relative clauses and other patterns using experimental methods should also be explored in the future. There could be a possibility of inter-speaker and between-group variability on agent non-pivot extraction on these languages,

as has been demonstrated in previous work (Pizarro-Guevara & Wagers, 2018, 2020). Experimental methods would illuminate the stability and variability of the judgments observed in the current data.

This study also reported variation with respect to the arguments that can be selected as pivots in the five different languages (TABLE 4). Further investigations with more languages call for exploring a possible implicational hierarchy for pivot selection, which exists in Philippine-type voice languages.

TABLE 4. Summary of the elements that can be selected as pivots
in the five languages surveyed.

Language	Agent	Patient	Locative	Instrument	Causative	Benefactive
Pangasinan	✓	✓	✓	✓	✗	✓
Western Subanon	✓	✓	✓	✗	✗	✗
Blaan	✓	✓	✓	✓	✓	✗
Akeanon	✓	✓	✓	✗	✗	✗
Cebuano	✓	✓	✓	✓	✓	✗

5. CONCLUSION. This paper extends previous work on the accessibility of different elements for relativization for Philippine-type voice languages based on the five languages surveyed. Besides the pivot often being reported to be accessible to relativization extraction, the study finds that agent non-pivots can also be relativized in selected languages. A hierarchy with agent non-pivots being more marked than the pivot argument is observed. Despite the limitations of the study, the current paper offers some insights on the implications of the findings for the broader picture of syntax. It also opens the doors for future investigation on the generalizability of the study results, and the typological and syntactic issues that arise in Philippine-type voice languages.

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ABRREVIATIONS

AG   agent
AV   agent voice
BEN   benefactive
BV   benefactive voice
CAU   cause (argument)
CV   causative voice
DEM   demonstrative
DET   determiner
GCP   Greater Central Philippine (subgroup)
INS   instrument
IV   instrumental voice
LOC   locative
LV   locative voice
NPIV   non-pivot
OBL   oblique
PAT   patient
PH   Philippine (subgroup)
PIV   pivot
PRF   perfective
PV   patient voice
RC   relative clause
REL   relativizer
WMP   Western Malayo-Polynesian

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