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A non-veridical indefinite in Cuzco Quechua*

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1. Introduction

As in many languages, indefinite pronouns in Cuzco Quechua (CQ) are constructed from *wh*-phrases. The main strategy is to add the additive enclitic *=pas* (allomorph *=pis*), as illustrated in (1). *wh=pas* indefinites have existential force and occur in non-veridical environments, e.g., the scope of modals, attitude verbs, questions, and negation.¹

- (1) a. **Icha** pi=lla=**pas** hamu-n-**man** yana-paq-ni-y.
perhaps who=LIM=ADD come-3-COND help-DAT-EUPH-1
'Maybe someone will come to help me.' (Mejía Huamán 2016, 194)
- b. Dueño-n **ni-n** nisita-n=**si** pi-lla-**ta=pas** kay-pi tiya-y-ta.
owner-3 say-3 need-3=REP who-LIM-ACC=ADD this-LOC sit-INF-ACC
'The owner says that he needs someone to live here.' (V&E 1982:78)²
- c. Uyari-ra-nki=**chu** ima **noticia-ta=pis** naha tutamanta?
hear-PST-2=POL what news-ACC=ADD this morning
'Did you hear any news this morning?' (Cusihuaman 2001, 107)

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¹Examples have mostly been taken from published sources (in some cases shortened), and their interpretation confirmed with a native speaker; some are elicited. Abbreviations used in glosses: 1, 2, 3: first, second, third person, 1O: first person object, 3S: third person subject, ABL: ablative, ACC: accusative, ADD: additive, AG: agentive, BEN: benefactive, BPG: best possible grounds, CERT: certainty, CISL: cislocative, COM: comitative, CONJ: conjectural, COND: conditional, CONTR: contrastive, DAT: dative, DIM: diminutive, DISC: discontinuative, EUPH: euphonic, GEN: genitive, HORT: hortative, ILLA: illative, IMP: imperative, INF: infinitive, LIM: limitative, LOC: locative, NMLZ: nominalizer, NX.PST: non-experienced past, PL: plural, POL: polarity, PROG: progressive, PST: past, REP: reportative, TOP: topic.

²Here and elsewhere, V&E is short for Valderrama Fernandez & Escalante Gutierrez.

- d. **Mana=n uyari-ni=chu ima-ta=pas.**
 not=BPG hear-1=POL what-ACC=ADD
 ‘I heard nothing.’ (Cusihuaman 2001, 107)

wh=pas indefinites are often interpreted as free choice (FC), as shown in (2).

- (2) a. Pay aklla-ku-y-ta ate-q **mayqen ka-q wachu-ta=pas.**
 (s)he chose-REFL-INF-ACC can-AG which be-AG furrow-ACC=ADD
 ‘He could choose for himself any furrow.’ (V&E 1982:39)
- b. **Ima-cha=lla-manta=pas** maqa-na-ku-na=lla-paq ka-q.
 what-DIM=LIM-ABL=ADD hit-PL-REFL-NMLZ=LIM-DAT be-AG.
 ‘There used to be fighting about any little thing.’ (V&E 1982:114)

The simple additive use of *=pas* is illustrated in (3).

- (3) Ñoqa=**pis** yacha-ni=n aymara rimay-ta=qa.
 I=ADD know-1-BPG Aymara speak-ACC=TOP
 ‘I, too, know how to speak Aymara.’ (Cusihuaman 2001, 95)

A third major use is as a marker of epistemic possibility in conjunction with epistemic modals such as the conditional mood, (4).

- (4) Phawa-y mana=**pas** aypa-ru-**waq.**
 run-IMP not=ADD catch.up-HORT-2.COND
 ‘Run, you might not get there in time.’ (Espinoza 1997, 86)

This paper proposes an initial compositional semantics for *wh=pas* indefinites. In particular, it explores the hypothesis that *=pas* contributes an additive presupposition also in this use, that is, existentially quantifies over a set of propositional alternatives. The FC interpretation, it is argued, is derived by a pragmatic principle of exhaustification of its domain.

The main properties of *wh=pas* indefinites to be accounted for are described in Section 2, and the basic additive and epistemic semantics of *=pas* are presented in Section 3. Section 4 combines these with the semantics of *wh*-words to derive the *wh=pas* indefinites. A pragmatic principle of exhaustification is proposed in Section 5, and a summary provided in Section 6. The scope of this paper is limited to *wh=pas* indefinites, though it should be noted that a second type of *wh*-indefinite is derived with the conjectural enclitic:

- (5) **Pi-cha** haqay-ta hamu-sha-n!
 who-CONJ over.there-ACC come-PROG-3
 ‘Someone unknown is coming over there. / I don’t know who is coming over there.’
 (Cusihuaman 2001, 234)

2. Main properties and distribution

The CQ *wh=pas* indefinites can be used for all the non-specific functions identified by Haspelmath (2001) for indefinite pronouns across languages, and occur, for example, in questions, and under negation, modals and propositional attitudes (illustrated in (1)), as well as in habituals, generics, and conditional antecedents (not illustrated). They can however not be used with specific reference, and speaker ignorance is not sufficient to license them in positive episodic sentences. They therefore differ from the so-called epistemic indefinites in German or Spanish.

For the purposes of this section, I adopt Haspelmath's (2001, 38) informal characterization of specific indefinites as expressions with which "the speaker presupposes the existence and unique identifiability of its referent". Specific, but not non-specific indefinites, can occur in "affirmative declarative sentences in the perfective past or ongoing present" like (6) (Haspelmath 2001, 39). Thus, the indefinite NPs *a bicycle* and *somebody* in (6) can only receive a specific interpretation. This is confirmed also by the fact that their referent can be picked up by an anaphoric pronoun in a subsequent sentence.

- (6) a. Cheolbai bought **a bicycle**. It is black. (Haspelmath 2001, 38)
b. **Somebody** called. They left a message for you.

wh=pas indefinites are ungrammatical in such sentences, as indicated in (7).

- (7) a. *Marya **ima** pukllana-ta=**pas** ranti-mu-sqa.
Marya what toy-ACC=ADD buy-CISL-NX.PST
(Intended: 'Marya bought a toy.')
- b. *Qayniunchaw **pi** warmi=**pas** qan-wan rima-q hamu-rqa-n.
yesterday who woman=ADD you-COM speak-AG come-PST-3
(Intended: 'Yesterday, a woman came to speak to you.')

I adopt Giannakidou's (2001) notion of (non-)veridicality to capture the distinction between sentences that accept *wh=pas* indefinites and those that do not. Simplifying, a propositional operator is veridical *iff* it entails its propositional argument. The assertion operator of positive sentences and the temporal adverb *yesterday* are typical veridical operators (Giannakidou 2001, 672). Non-veridical operators such as modals, propositional attitudes, negation, questions, do not entail their propositional argument. Non-veridical sentences allow both specific and non-specific interpretations of indefinite NPs that are not lexically specified for either. Thus, the indefinite NP in (8) in the scope of *want* is ambiguous.

- (8) Nobuko wants to marry **a native speaker of Ainu**.
a. *specific*: ... She fell in love with **him** during fieldwork sessions.
b. *non-specific* ... because she is Ainu herself and she wants her children to acquire her ancestors' language. (Haspelmath 2001, 37)

wh=pas indefinites are grammatical in the complement of *muna* ‘want’, but can then only be interpreted non-specifically. This is evidenced by the fact that, as shown in (9), they cannot serve as the antecedent for an intersentential anaphor.³

- (9) **Pi runasimi rima-q-wan=pas** rima-y-ta muna-n. #**Pay=qa**
 who Quechua speak-AG-COM=ADD speak-INF-ACC want-3 (s)he=TOP
 Chinchero-manta=n.
 Chinchero-ABL-3=BPG
 ‘(S)he wants to speak with a Quechua speaker. #(S)he is from Chinchero.’

In the scope of other non-veridical operators, such as in (1), *wh=pas* indefinites can also only be interpreted non-specifically. Thus, *wh=pas* indefinites are inherently non-specific in Haspelmath’s sense. They are excluded from veridical sentences because these require the speaker’s commitment “to the existence and identifiability of the entity” referred to (Haspelmath 2001, 39). In the terminology of Brasoveanu & Farkas (2016, 258), a *wh=pas* indefinite requires *variation* in the values assigned to its variable. There cannot be a particular Quechua speaker in (9) that serves as a witness for the existential claim. I will refer to this property as variation instead of non-specificity in the following. Specificity corresponds to indefinites having fixed reference (Brasoveanu & Farkas 2016, 258).

There are two subtypes of indefinites with fixed reference, those whose referent is known to the speaker and those whose referent is not known to the speaker (Haspelmath 2001). The referents of indefinites that require variation “are necessarily unknown to the speaker” (Haspelmath 2001, 45), and so this parameter does not produce any further subfunctions for *wh=pas* indefinites. For comparative purposes, however, it is useful to illustrate so-called epistemic indefinites, which may have a fixed referent, but which require this referent to be unknown to the speaker (Alonso-Ovalle & Menéndez-Benito 2010). For example, the referent of *algún juguete* ‘some toy’ in (10) is fixed in the sense that there is a particular toy that María bought, but it marks (in contrast to its plain counterpart with *un* ‘a’) that the speaker does not know what it is.

- (10) **María compró algún juguete.**
 María bought some toy
 ‘Maria bought some toy.’

The CQ *wh=pas* indefinites are not felicitous in such examples, see (7), even with an assumption of speaker ignorance. The hypothesis I propose to account for this is that additive *=pas* contributes a variation requirement that has to be licensed by a non-veridical licenser.

A further parameter of cross-linguistic variation is whether indefinites place any constraints on their domain of quantification. Thus, free-choice *any* has been analyzed as a domain widener (Kadmon & Landman 1993), that is, as not allowing its domain to be contextually restricted in the same way the domain of the corresponding plain indefinite usually is. Kratzer & Shimoyama (2002) analyze German *irgendein* as a domain widener and de-

³Unless the anaphor is modally subordinated.

rive its free choice interpretation as a conversational implicature from this property. The Spanish epistemic indefinite *algún* is not domain widening, but requires a non-singleton domain (Alonso-Ovalle & Menéndez-Benito 2010).⁴ They argue that it is this constraint that gives rise to a conversational implicature of speaker ignorance. If CQ *wh=pas* indefinites require variation they should also be incompatible with singleton domains. This seems to be the case. (11), e.g., is judged acceptable only if the speaker has more than one uncle.⁵

- (11) Suyasha-ni=n **mayqen** tio-lla-y=**pas** reqsi-wa-q
 wait-PROG-1=BPG which uncle-LIM-1=ADD recognize-1 O-AG
 hamu-na-n-ta.
 come-NMLZ-3-ACC
 ‘I am waiting for some uncle of mine to come and recognize me.’ (V&E 1982:29)

Like *algún*, *wh=pas* indefinites are not domain-widening. This is shown by the fact that they can occur in contexts that explicitly restrict the domain, such as (12) (adapted from Alonso-Ovalle & Menéndez-Benito 2010). For comparison, the Spanish free-choice indefinite *cualquier* is not compatible with such a restricted domain.

- (12) [Context: You’re looking for something in your house. You have searched your bedroom very thoroughly and are sure that it isn’t in the bedroom.]
- a. Debe estar en **algún**/***cualquier** lugar por aquí.
 b. Ka-sha-n-man=puni=n **may-pi=pas**.
 be-PROG-3-COND=CERT=BPG where-LOC-ADD
 ‘It must be here somewhere.’

There are then two main properties of *wh=pas* indefinites that need to be accounted for: (i) variation, from which the anti-singleton constraint follows, and (ii) licensing by a non-veridical operator. I hypothesize that these follow from the semantics independently needed for *=pas* and *wh*-words.

3. Additive and epistemic semantics of *=pas*

I adopt a version of Rooth’s (1992) two-dimensional focus semantics. In this theory, a sentence *S* has its ordinary value ϕ , that is, the proposition denoted by it, plus a focus semantic value, which is the set of propositions denoted by sentences *S'* that are exactly like *S* but with the focus constituent replaced with an alternative of the same type, including itself. For example, the focus semantic value $[[\cdot]]^f$ of *Pilar knows how to speak Aymara* is (13a) when *Pilar* is the focus, and (13b) when *Aymara* is the focus. The ordinary semantic value is the same in both cases, namely that Pilar knows how to speak Aymara.

⁴(Lauer 2012) argues that German *irgendein* even on its free-choice reading is not as strong as English *any*, and also at most imposes an anti-singleton constraint.

⁵The same judgment is given for (11) if *pi* ‘who’ is used instead of *mayqen* ‘which’.

- (13) a. $[[[F \text{ Pilar}] \text{ knows how to speak Aymara}]]^f = \{q \mid q = \text{that } x \text{ knows how to speak Aymara}\}$
 b. $[[\text{Pilar knows how to speak } [F \text{ Aymara}]]]^f = \{q \mid q = \text{that Pilar knows how to speak } x \}$

The focus value in Rooth's system is unrestricted, that is, it contains alternatives for the entire domain of x . In most contexts, however, the domain is restricted to salient alternatives. I use Foc-Alt for such a contextually restricted focus value. I assume without argument that additive $=pas$ attaches to the focus constituent and has the relatively standard semantics given for additives in other languages (see, e.g., König (1991), Gast (2013)), namely that it presupposes the truth of at least one alternative proposition in Foc-Alt that is distinct from the asserted one. For example, if the set of salient individuals consists of Alicia, Mario and Pilar, the focus alternatives for (14a) are as in (14c), and the additive presupposition is (14d).

- (14) a. Alicia: Ñoqa=**pis** yacha-ni=n aymara rimay-ta=qa.
 I=ADD know-1-BPG Aymara speak-ACC=TOP
 'I, too, know how to speak Aymara.'
 b. $p = \text{that Alicia knows to speak Aymara}$
 c. Foc-Alt = $\{\text{that Alicia knows how to speak Aymara, that Mario knows how to speak Aymara, that Pilar knows how to speak Aymara}\}$
 d. Additive presupposition: Mario or Pilar knows how to speak Aymara.

In general, the additive presupposition of $=pas$ applied to a clause with ordinary semantic value p , and focus value Foc-Alt is (15c).⁶

- (15) *Simple additive*
 a. Assertion: p
 b. Foc-Alt = $\{p, q, r, \dots\}$
 c. Additive presupposition: $\exists q \in \text{Foc-Alt}[p \neq q \wedge q]$

Faller (2018) argues that $=pas$ contributes an additive presupposition in all its uses and that their differences arise from the type of alternatives quantified over. For the epistemic use of $=pas$, these are epistemic alternatives, that is, propositions that the speaker also considers live epistemic possibilities. These alternatives are introduced by an overt epistemic operator such as the conditional mood suffix *-man* (*-waq* for 2nd person) or the conjectural enclitic *=chá*. Thus, an epistemic possibility sentence not only asserts that the prejacent is possible, but also conveys that there are other epistemic possibilities (Aloni 2007). Focus may again

⁶While I display the various additive presuppositions separately from the assertions, I assume throughout that any unbound variables in the presupposition are bound by (quantifiers in) the assertion. Thus, p in (15c) is to be understood as being the asserted proposition p .

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contribute to the determination of the relevant alternatives: in (16), *=pas* attaches to the negation particle and the relevant alternatives are the prejacent and its negation.

- (16) a. Mana=**pas** aypa-ru-**waq**.
 not=ADD catch.up-HORT-2.COND
p = ‘You might not get there in time.’ (Espinoza 1997, 86)
- b. Epist-Alt = {that you get there in time, that you don’t get there in time}
- c. Epistemic additive presupposition: You might get there in time.

In (17), *=pas* attaches to the subject NP, and the alternatives are constructed by replacing it with individual alternatives.⁷

- (17) a. Noqa-ta=**pas** **chay=pas=chá** pasa-wa-nqa.
 I-ACC=ADD this=ADD=CONJ happen-1 O-3FUT
 ‘This may also happen to me.’ (V&E 1982:88)
- b. Epist-Alt = {thing₁ happens, thing₂ happens, thing₃ happens, ... }
- c. Epistemic additive presupposition: Something other than ‘this’ may happen.

In general, the meaning of the epistemic use of *=pas* can be represented as in (18).⁸

- (18) *Epistemic additive*:
- a. Assertion: $\exists w' \in \bigcap f_e(w)[p(w')]$
- b. Epist-Alt = {*p*, *q*, *r*, ... }
- c. Epistemic additive presupposition:
 $\exists v \in \bigcap f_e(w)[\exists q \in \text{Epist-Alt}[w' \neq v \wedge p \neq q \wedge q(v)]]$

The additive presupposition in (18c) not only requires there to exist a distinct alternative that is true at *some* accessible world but that it be true at a *distinct* world. It is this second distinctness requirement that makes this use of *=pas* epistemic and not merely additive. Without it, the sentence in (17) is predicted to mean *This may also happen to me* (that is, in addition to something else happening to me).⁹ The meaning we are aiming to capture

⁷The attachment site of *=pas* does, however, not always determine the epistemic alternatives. E.g., (i) does not mean that something else might make the speaker wet, but that the speaker might not get wet.

(i) Para=**pas=chá** api-ya-mu-wa-nqa!
 rain=ADD=CONJ wet-TRANS-CISL-1O-3FUT
 ‘Maybe the rain will get me wet.’ (Cusihuaman 2001, 233)

⁸Where f_e is an epistemic conversational background, mapping a world onto the set of propositions that are known to be true in it; $\bigcap f_e(w)$ is the set of worlds that are compatible with this set of propositions, that is, they are the epistemically accessible worlds.

⁹I expect this to be a possible reading, though this remains to be confirmed with native speakers.

is *There is a possibility that this may happen to me in addition to there being a possibility that something else may happen to me.*

Native speakers perceive an epistemic modal sentence with *=pas* to be a weaker possibility than the same sentence without it. Especially sentences with the conjectural *=chá* can be interpreted as strong inferences. The weakening, I would argue, is due to the presupposition that there exists at least one epistemic alternative to the prejacent. The assertion by itself would be compatible with the prejacent being the only alternative, that is, being true in all accessible worlds.¹⁰

Note that in both the additive and the epistemic use, *=pas* has *propositional* scope. Its attachment site merely serves to indicate the constituent that is used to construct the focus/epistemic alternatives.¹¹ Moreover, in neither case does *=pas* introduce the alternatives. Rather, it is parasitic on other elements that do, such as focus or modal elements.

4. Proposal: distinctness condition of *=pas* results in variation for *wh=pas*

Indefinite pronouns built by adding an additive or conjunctive marker to a *wh*-phrase are common across languages, and there are several proposals in the literature to derive their semantics compositionally. However, most of the indefinites with an additive marker studied previously have universal quantificational force, causing Szabolcsi (2015) (see references therein for specific examples and references) to consider this a cross-linguistic robust pattern in need of a unified semantic approach. Conversely, indefinites formed with disjunctive elements tend to be associated with existential force. The CQ *wh=pas* existential indefinites seems to be one of the exceptions that prove the rule. Another exception are Bengali *wh-ADD* indefinites, which have a similar range of existential interpretations as *wh=pas* (Ramchand 1997). An exception to the disjunctive=existential pattern are the Hausa *wh-DISJ* pronouns which receive an universal interpretation (Zimmermann 2009).

Ramchand (1997) analyzes the Bengali additive as a delimiter of the constituent used to construct the alternative propositions. This is also a function *=pas* fulfils, but I hypothesize that it makes a more substantial semantic contribution as well. Following Ramchand (1997), Kratzer & Shimoyama (2002), Kratzer (2006) and others, I adopt a Hamblin semantics, though the basic ideas should also be formalizable within alternative frameworks. In a Hamblin semantics all denotations are sets; *wh*-phrases such as *pi (warmi)* ‘who (woman)’ denote sets of individuals as in (19).¹² (The representations are modeled on Kratzer & Shimoyama (2002), Kratzer (2006)).

$$(19) \quad \llbracket \text{pi} \rrbracket^{w,g} = \{x: \text{human}(x)(w)\}; \llbracket \text{pi warmi} \rrbracket^{w,g} = \{x: \text{woman}(x)(w)\}$$

¹⁰There is no epistemic modal in CQ with universal quantificational force that is in direct competition with *-man* or *=chá*. The conjectural *=chá* in particular, is often used by itself to convey a strong inference.

¹¹This raises the question how the presuppositions of multiple *=pas* co-occurring in a single clause interact. E.g., in (17), there is a purely additive *=pas* in addition to the epistemic one. I thank Andrew McKenzie for raising this as a potential issue at SULA 10.

¹²Such sets are not to be regarded as properties, which in lambda notation we might represent as $\lambda x.\text{human}(x)(w)$, but as sets of alternatives.

Such sets of individuals combine with the main predicate, which is taken to denote a singleton set containing its usual lambda denotation, as shown in (20) for *hamun* ‘come (third person)’, via point-wise functional application. In a model with three humans in the domain of discourse, Alicia, Mario, Pilar, the set *wh*-Alt resulting from combining *=pi* ‘who’ with *hamun* ‘comes’ is (20b), which can be spelled out as (20c). This process can be repeated to produce expanding sets of alternatives until they are “closed off” by a quantifier.

- (20) a. $[[\text{hamun}]]^{w,g} = \{\lambda x \lambda w'. \text{come}(x)(w')\}$
 b. $[[\text{pi hamun}]]^{w,g} = \{p: \exists x[\text{human}(x)(w) \wedge p = \lambda w'. \text{come}(x)(w')]\}$
 c. *wh*-Alt = {that Alicia comes, that Paula comes, that Mario comes}

Sets of propositional alternatives like (20c) serve as the input to sentential quantifiers that produce the kind of semantic object that can be the denotation of a sentence. For example, the set in (20c) can serve as the input to the Q(question) operator, to derive the standard Hamblin meaning of the question *Pi hamun* ‘Who comes?’ The other sentential quantifiers are the universal and existential quantifiers and negation. Sentential quantifiers may be overt or covert (Kratzer & Shimoyama 2002). In Japanese, for example, Q is denoted by the particle *ka*, but CQ *wh*-questions do not involve any question-indicating morphemes beyond the *wh*-word. Now, sets like (20c) are of the right semantic type to serve as the argument of any of the sentential quantifiers, and in Japanese, *wh*-words can in fact associate with all of them, making them truly *indeterminate* (Kratzer & Shimoyama 2002). For *wh*-words or indefinites that are not indeterminate, mechanisms need to be put in place that ensure that they are only selected by the right kind of sentential quantifier. Kratzer (2006) proposes for German *irgendein* indefinites that they do not have existential force of their own but have a syntactic feature that requires them to agree with the (covert) sentential $[\exists]$. Likewise, German *wh*-words have a feature that requires agreement with Q. The CQ *wh*-words need to be able to be selected by Q when occurring without *=pas*, but by sentential $[\exists]$ when combined with *=pas*. It might be possible to derive this “compositionally” in the morphosyntax; e.g., the existential agreement feature may be associated with *=pas* and override the Q-feature associated with *wh*.¹³ For the purposes of this paper, I simply assume that the *wh=pas* construction as a whole needs to be selected by $[\exists]$.

The proposed semantics for *wh=pas* indefinites is actually very simple. Recall that *wh=pas* indefinites need to be licensed by a non-veridical operator. When this operator is epistemic, I suggest that *=pas* does exactly what it does in an epistemic case like (17), with the difference that the relevant alternatives are obtained by varying the value of the variable *x* associated with the *wh*-phrase, rather than by substituting the referent of the focus NP. Consider (21) (simplified from (1a)).¹⁴ The *wh*-phrase denotes the set of salient individuals

¹³Associating the existential agreement feature with *=pas* would rule out *wh*-phrases on their own functioning as indefinites. This is in fact very rare, though not completely unattested. More research is needed to determine the relevant constraints.

¹⁴This paper only deals with possibility sentences. While example (12b) is translated with a necessity modal, as mentioned in footnote 10, there are no truly universal epistemic modals in CQ. The universal flavor results from the combination of the conditional mood *-man* with the best possible grounds evidential *=mi* (Faller 2000) and the certainty enclitic *=puni*. An full analysis of this construction is outstanding.

and combines with the verb phrase to render a set of propositions as in (20). This set also serves as the set of epistemic alternatives associated with the conditional mood *-man*. (21) asserts that at least one of the alternatives is a possibility, while *=pas* presupposes that a distinct alternative is also a possibility, (21c).

- (21) a. **Pi=pas** hamu-n-**man**.
 who=ADD come-3-COND
 ‘Someone may come.’
- b. Epist-Alt = {that Alicia comes, that Mario comes, that Pilar comes}
- c. Epistemic additive presupposition: Someone else may come.

The assertion and presupposition together entail that there exist at least two distinct people who may come.¹⁵ This captures the property of *variation* observed for *wh=pas* indefinites in Section 2, as well as the anti-singleton constraint on their domain.

The permission case in (22) works the same way, the only difference being that the modal base here is deontic.

- (22) a. Aklla-ku-**waq** ima pukllana-ta=**pis**.
 choose-REFL-2.COND what toy-ACC=ADD
 ‘You may choose some/any toy.’
- b. Deontic-Alt = {that you choose a toy fire engine, that you choose a baby doll, that you choose a puzzle}
- c. Deontic additive presupposition: You may chose some other toy.

Again, the combination of the assertion and presupposition derives variation for the *wh=pas* indefinite. There are at least two distinct permitted worlds in which the addressee chooses a distinct toy. Note that this derives the meaning that the addressee may choose *some* toy. How the free choice interpretation of (22a) is derived, namely that the addressee may choose *any* toy, will be discussed in Section 5.

It is worth highlighting that the presuppositions triggered by *=pas* when applying to modal alternatives are merely possibilities. That is, (21) does not presuppose that someone will come in the actual world; (22) does not presuppose that the addressee chooses a toy in the actual world. As such, these are very weak presuppositions, only requiring the common ground to not rule them out. The assertions of possibility modals are of course also weak, and only require that an update with the prejacent does not lead to inconsistency. The main effect of *=pas* in this construction is not so much to put constraints on the CG, but to ensure variation, i.e., that at least two possibilities are entertained.

In order to compositionally derive the semantics in (21) and (22), I assume, following Kratzer (2006), that modals take as their argument a set of propositions (see also Aloni (2007)). When their prejacent contains a *wh=pas* indefinite, this set is the set derived from

¹⁵The phrasing with *else* in (21c) (and below) does not quite capture this, as it presupposes that there is a specific individual with respect to which the “someone else” can be established.

composing the *wh*-phrase with the predicate (see (20)). Modals moreover simultaneously introduce a sentential $[\exists]$ which closes their nuclear scope in the spirit of Heim (1982), and so furnish the *wh=pas* indefinite with its existential force. (23) gives the semantics for the conditional mood *-man* applied to the set of *wh*-alternatives.

$$(23) \quad \llbracket \text{-man} + [\exists](wh\text{-Alt}) \rrbracket^{w,g,f} = \\ \{ \lambda w'. \exists w'' \in \cap f(w') [\exists p \in \llbracket wh\text{-Alt} \rrbracket^{w,g} [p(w'')]] \}$$

=pas applies to (23) and contributes the modal presupposition in (24).

$$(24) \quad \text{Modal additive presupposition:}^{16} \\ \{ \lambda v. \exists v' \in \cap f(v) [\exists q \in \llbracket wh\text{-Alt} \rrbracket^{w,g} [w'' \neq v' \wedge p \neq q \wedge q(v')]] \}$$

Informal paraphrases of instantiations of this presupposition are given in (21c) and (22c).

Negative *wh=pas* indefinites such as (1d) or (25), can be derived in a parallel fashion.

$$(25) \quad \text{Kay laro Willoq-manta } \mathbf{ni \ pi=pas} \quad \text{ka-ra-n=chu} \\ \text{this side Willoq-ABL not who=ADD be-PST-3=POL} \\ \text{'There was nobody from Willoq.' (Espinoza 1997, 36)}$$

Let us again assume that sentence negation (NEG) introduces existential closure of its nuclear scope (Heim 1982, 94) as in (26). *=pas* then operates on the resulting assertion, requiring distinctness of the values for the indefinite's variable, as shown in (27).

$$(26) \quad \llbracket \text{NEG} + [\exists](wh\text{-Alt}) \rrbracket^{w,g} = \\ \{ \lambda w'. \neg [\exists p \in \llbracket wh\text{-Alt} \rrbracket^{w,g} [p(w')]] \}$$

$$(27) \quad \text{Negative additive presupposition:} \\ \{ \lambda v. \neg [\exists q \in \llbracket wh\text{-Alt} \rrbracket^{w,g} [p \neq q \wedge q(v)]] \}$$

Thus, (25) amounts to *It is not the case that there was someone from Willoq in addition to it not being the case that there was someone else from Willoq*. The presupposition here is entailed by the assertion, and so does not project. However, the distinctness requirement $p \neq q$ contributes again an anti-singleton constraint on the domain.

In sum, the semantics of *wh=pas* indefinites involves the construction of sets of *wh*-alternatives which get existentially closed by a non-veridical operator that takes them as its argument. *=pas* then constructs an additive presupposition that requires distinctness of the value of the individual variable, as well as, in the modal case, of the world variables. For reasons of space, I cannot provide an analysis of *wh=pas* indefinites in questions, (1c), but the proposal for modals should carry over. Thus, we can think of questions as sets of

¹⁶Recall, footnote 6, that I assume that the unbound variables w'' and p in the presupposition are bound by the relevant quantifiers in the assertion.

possible answers, one of which is assumed to be true. The additive presupposition would then require that a distinct answer be true at a distinct possible world.

What has not yet been addressed is the **licensing problem**, that is, why *wh=pas* can not occur in positive episodic sentences such as (28), with the indicated meaning.¹⁷

- (28) a. *Pi=pas hamu-rqa-n.
 who=ADD come-PST-3
 (Intended assertion: ‘Someone came.’)
- b. Intended additive presupposition: Someone else came.

The answer, I suggest, is that it is not possible to construct an additive presupposition in the absence of an operator that introduces existential closure of its nuclear scope. Thus, the condition contributed by *=pas* that there be a *q* in the set *wh-Alt* that is distinct from the proposition *p* in the assertion can not be checked unless we pick a particular *p* that is a witness to the claim that someone came. But in the absence of an existential quantifier, we will not have picked a witness for *p*, and so the presupposition cannot be computed. Text-level existential closure will not do the job, as it only applies after sentence-internal composition is complete. Thus, *wh=pas* indefinites are only licensed in the scope of an operator that introduces existential closure of its nuclear scope.

5. Free choice

The current semantics for *wh=pas* indefinites under modals only requires that there be distinct possible worlds for at least two distinct propositions in the set of alternatives. How can we account for the FC effect in (29d), namely that *all* alternatives are live possibilities?¹⁸

- (29) a. **Mayqen boton-ta=pas** ñit’i-y.
 which button-ACC=ADD press-IMP
 ‘Press any/whatever button.’ (elicited)
- b. Directive: Make the actual world a world in which you press a button.¹⁹
- c. Presupposition: There is a different accessible world in which you press a different button.
- d. FC effect: **For all buttons**, there is an accessible world in which you press it.

FC readings amount to *exhaustive* variation of the alternatives. Exhaustification is part of the conventional meaning of dedicated FCIs (Giannakidou 2001), but for indefinites that

¹⁷Note that (28) can also not be understood as the question *Who else came?* I have currently no hypothesis as to the unavailability of this reading.

¹⁸I only consider existential free choice here, that is, cases where the choice of one individual is sufficient. Universal interpretations as in (2b) are arguably induced by particular licensors (Giannakidou 2001).

¹⁹Disclaimer: (29b) only serves the purpose of facilitating the formulation of the additive presupposition and is not intended as an analysis of the imperative.

only in some cases have FC interpretations, exhaustification needs to be achieved pragmatically. Kratzer & Shimoyama (2002) derive the FC interpretation of German *irgendein* as a scalar implicature that arises from its function as a domain widener. Roughly, the choice of a wider domain when a smaller domain would have resulted in a stronger statement, is motivated by wanting to avoid an exhaustivity inference that would be triggered by the smaller domain, namely that *only* the individuals in the smaller domain are possible values.²⁰ This gives rise to the implicature that all members of the wider domain have to be an option. Since *wh=pas* indefinites are not domain wideners (Section 2), their FC interpretation cannot be derived in this way. Instead, I propose that the FC readings of *wh=pas* indefinites result from a pragmatic principle that requires exhaustification of alternatives as default.

- (30) *Default principle:*
Exhaustify the set of indefinite alternatives unless there are reasons not to.

Supporting evidence for such a principle comes from the fact that even plain indefinites can acquire FC readings. Thus, the examples in (31) would be odd if the addressee were not allowed to pick any cake from the ones on offer.

- (31) Pick a cake. / You may pick a cake. (Chierchia 2013, 3)

Chierchia (2013, 8) suggests that exhaustification in cases like (31) “is totally context-dependent: we exhaustify when we perceive it as appropriate to the conversational goals.” The proposed principle in (30) is stronger than that, as it assumes exhaustification as default. However, given that sentences like (29) and (31) would be interpreted as free choice in out-of-the-blue contexts, this seems justified. The applicability of (30) will moreover be constrained by the lexical resources of a language. Thus, in Spanish, both the plain indefinite *un(a)* ‘a’ and the anti-singleton indefinite *algún(a)* ‘some’ are in competition with the dedicated FCI *cualquier(a)* ‘any’. Using the former two in a free-choice context is expected to trigger additional inferences. CQ does not possess a dedicated FCI; (30) is therefore expected to apply more freely in CQ than in Spanish.

Under what circumstances do we not exhaustify? I suggest that exhaustification does not apply whenever properties other than the one specified by the *wh*-phrase itself are relevant for choosing the witness for the existential claim. For example, by requesting you to press *some button*, the only relevant property restricting your choice is that what you press be a button. If I had wanted you to choose only from the subset of red buttons, I should have said so, or this should have been clear from the context. In contrast, in an example like (1b), world knowledge tells us that a landowner who is looking for someone to live on and look after their land will not choose someone just on the basis of their being human, but will want to narrow down the set to people with certain skills. As a result, we do not exhaustify on the set of humans and there is no free-choice effect with this example.

²⁰As pointed out by Lauer (2012), since the calculation of this implicature does not rely on what else could have been said, but on the implicit choice of domain, it cannot be considered a standard scalar implicature in the Neo-Gricean sense.

6. Conclusion

The main hypothesis explored in this paper is that the (epistemic) additive semantics of *=pas* contributes to the semantics of *wh=pas*-indefinites. It presupposes the existence of a propositional alternative distinct from the asserted one. This results in the requirement of variation of the values for the *wh*-phrase and therefore explains why they cannot be used in positive episodic sentences. The proposition on the basis of which the alternatives are constructed must contain a non-veridical operator which introduces existential closure of its nuclear scope, as otherwise it would not be possible to compute the distinctness condition contributed by the additive. The free choice effect is hypothesized to arise pragmatically, by a default principle that requires exhaustification of alternatives.

There are a multitude of open questions, which hopefully can be explored in the future. Above all, the account requires substantial fleshing out, both empirically and theoretically, and its predictions tested. For example, the propositional account developed here predicts that *wh-pas* indefinites should not exhibit the scope ambiguities expected of an existential quantifier. The scope properties of indefinites in CQ have to date not been studied at all. Also outstanding is a comparison with the other *wh*-based indefinite with the conjectural. Examples like (5) suggest that it is an epistemic indefinite.

Cross-linguistically, the main question is how to account for the differences in quantificational force observed with *wh-ADD* indefinites. Zimmermann (2009) suggests that the different quantificational forces observed for *wh-DISJ* indefinites has to do with whether they quantify over individual or propositional alternatives. This is worth exploring further.

Lastly, the proposed default of exhaustification of alternatives needs to be explored against a broader set of data and the circumstances under which (30) does not apply specified more precisely. We can think of exhaustification as a kind of predicate circumscription relative to a question (Schulz & Van Rooij 2006). Thus, one avenue to explore is how the question under discussion determines under what circumstances indefinites that are not lexically specified as free choice acquire free choice meanings.

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