ILOKANO FREE RELATIVES WITH *MAN*[*]

James N. Collins
Stanford University
jamesnc@stanford.edu

I provide a compositional semantics for a particular kind of free relative construction (analogous to English *wh–ever* phrases) in Ilokano formed with the particle *man*. I argue that Ilokano free relatives with *man* (*m*FRs) in episodic sentences are definite, presupposing existence and uniqueness of the *m*FR's referent. This distinguishes *m*FRs from other kinds of "headless" DPs in Ilokano that are formed without *wh*-morphology. With a variety of diagnostics, I demonstrate that other kinds of non-*wh*-DPs do not presuppose existence or uniqueness. I further show that *m*FRs in episodic contexts imply that the conversational participants are collectively unable to pin down with certainty the referent of the free relative.

1. Introduction

This paper describes the semantics of free relatives marked with the morpheme *man* (abbreviated as *m*FRs) in Ilokano (Northern Philippine), as in (1).[1]

(1) *nanglukat ti tawa [ti sinoman nga immuna a simmangpet]*
AP.open DET window DET who-MAN COMP OP.first COMP OP.arrive
'Whoever arrived first opened a window.'

In short, I argue that an *m*FR in an episodic context is a definite (following Jacobson 1995), presupposing the existence and uniqueness of an individual who instantiates its descriptive content. In (1), the bracketed *m*FR presupposes that there is a unique individual who arrived first. Further, I argue that an *m*FR supplies a not-at-issue meaning component of uncertainty. An utterance of (1)

[*]With sincerest thanks to Luvee Hazel Aquino and Romy Brillantes for their time as consultants. Thanks to Dylan Bumford, Ivano Caponigro, Cleo Condoravdi, Daniel Lassiter, Chistopher Potts, and the audience at AFLA XXI at the University of Hawai'i at Mānoa for comments on this work.

[1]Abbreviations: AP actor pivot; COMP complementiser; DET determiner; ERG ergative; GP goal pivot; NEG negative particle; OP object pivot; PERF perfect; PL plural; PROG progressive; SG singular; STAT stativity marker; TOP topic marker

implies that the conversational participants are mutually unable to uniquely pin down the identity of the referent of the *m*FR. I show how this condition on the use of an *m*FR gives rise to so-called ignorance implications observed in previous work on free relatives with *wh–ever* in English (e.g., Dayal 1997; von Fintel 2000).

I compare *m*FRs to another kind of DP constituent with an embedded clause, namely a headless relative as in (2). Headless relatives lack morphosyntactic features of *m*FRs, namely the *wh*-item, the particle *man* and the overt complementiser *(ng)a*. A bare clause is simply combined with a determiner, *ti* in (2).

(2) *nanglukat ti tawa [ti immuna a simmangpet]*
AP.open DET window DET OP.first COMP OP.arrive
'A certain one who arrived first opened a window.'

I show that these headless relatives do not impose the same contextual felicity constraints that *m*FRs impose. In particular, they may be used in contexts where the uniqueness and existence of an individual instantiating the descriptive content of the headless relative are not presupposed. I capture this discrepancy by proposing a semantics for *wh*-morphology in *m*FRs which encodes presuppositions of uniqueness and existence. This accounts for the presuppositional semantics of *m*FRs, which demonstrate the requisite *wh*-morphology, and also accounts for the lack of presuppositional semantics in headless relatives, which lack *wh*-morphology.

I also propose that the uncertainty implication of *m*FRs is contributed by the particle *man*. I provide a lexical semantics for *man* which determines that the property denoted by the descriptive content is not held by any one individual across some contextually supplied modal base. Following Lauer (2009), in episodic contexts (to which I devote my attention in this paper), this modal base is the mutual public beliefs of the conversational participants. I show how this semantics for *man* links with its usage in contexts other than in free relatives, in particular its use as a marker of surprise (a mirative), and a marker of politeness in imperatives.

2. *m*FRs as definites

This section explores the proposal that *m*FRs are semantically definite and compares them in this regard to headless relatives. I show that *m*FRs pass diagnostics suggesting that they are only felicitous in contexts which entail the uniqueness and existence of their referent. I also show that headless relatives are infelicitous in the same contexts.

I use these results to motivate a particular view of the interpretation of *wh*-expressions. Previous accounts of English free relatives (which lack a determiner) suggest that their definite semantics is derived by covert type-shifting or a phonologically null definite determiner. I suggest that the definite semantics is imposed by its *wh*-morphology, thereby alleviating the need for any additional machinery.

The data presented here focus on *m*FRs and headless relatives appearing with the determiner *ti*. *ti* signals that the argument is core (as opposed to oblique), marking the sole argument of an intransitive, and the agent and patient of a transitive. Furthermore, the *m*FRs and headless relatives discussed in this paper are for the most part the "pivot" of their containing clause. Ilokano demonstrates thematic role marking morphology on the verb, typical of Philippine languages. A morpheme on the verb corresponds to a thematic role associated with the event denoted by the verb (e.g., agent, patient, benefactive, instrument, etc.). The pivot is the DP which denotes the participant bearing the thematic role in question. The pivot has a number of particular properties including wide scope with respect to sentential operators such as negation and conditionals. In comparing the semantics of *m*FRs and headless relatives, I will be careful to compare pivots with pivots, and non-pivots with non-pivots, in an effort to keep properties associated with pivothood constant across the compared sentences. A discussion of the compositional semantics of pivots and non-pivots is briefly elaborated on in §2.4.

2.1 Uniqueness

To begin, I will examine whether *m*FRs or headless relatives entail that the descriptive content is uniquely instantiated by an individual or group of individuals. The uniqueness entailment of a noun phrase with descriptive content P, abbreviated as UNIQUENESS throughout, is spelled out informally below.

(3) UNIQUENESS: If there is an individual x who has property P then all individuals y who have property P are identical to (a subpart of) x.

If *m*FRs or headless relatives entail UNIQUENESS as defined in (3), they should allow at most one (plural or singular) individual to instantiate the descriptive content. If UNIQUENESS holds, the predicative content (in our example "opened a window") should apply *exhaustively* to the entire plurality of individuals who arrived first. If UNIQUENESS doesn't hold, it should be possible for the predicative content to apply non-exhaustively to the set of individuals instantiating the descriptive content (some first-arrivers "opened a window" and some didn't).

The example below illustrates a clear contrast: an utterance of an *m*FR is infelicitous in a context in which the predicate does not apply exhaustively to all individuals instantiating the descriptive content of an *m*FR (4a). On the other hand, an utterance of a headless relative is felicitous in the same contexts (4b). The speaker's judgement is slightly complicated by the uninformativity of (4b) in such a context: although the speaker judged (4a) as false and (4b) as true, she cites (4b) as a non-complete description of the scenario.

(4) [*Context:* A lot of people requested tickets but I only gave tickets to some, but not all the people.]

a. *#inikkak* *ti* *ticket* *[ti* *sinoman* *nga*
GP.PERF.give.1SG DET ticket DET who-MAN COMP
dimmawat]
AP.PERF.request
#'I gave a ticket to whoever requested one.'

b. *inikkak* *ti* *ticket* *[ti* *dimmawat]*
GP.PERF.give.1SG DET ticket DET AP.PERF.request
'I gave a ticket to a certain one who asked.'[2]

I take this paradigm to be evidence that *m*FRs entail UNIQUENESS, while headless relatives lack this entailment, being judged as true in contexts where the predicate non-exhaustively applies to individuals instantiating their descriptive content.

2.2 Existence

Next, I will examine whether *m*FRs or headless relatives entail that an individual instantiates their descriptive content. In addition I will examine *how* this entailment arises: is it an at-issue entailment, a presupposition, a conventional implicature etc? I abbreviate the entailment as EXISTENCE, spelled out for some descriptive content P below as simple existential quantification. UNIQUENESS entails at most one individual has property P, while EXISTENCE entails at least one individual has property P. The combination of UNIQUENESS and EXISTENCE entails exactly one individual has property P.

(5) EXISTENCE: There is at least one individual x who has property P.

Both *m*FRs and headless relatives entail that their descriptive content is instantiated by an individual. For example, neither can be followed with continuations which deny the existence of an instantiator.

[2]Speaker comment on (4b): but it's not the whole truth, there's a sea of people who asked for tickets and you didn't give them. It's true but it's not true that whoever asked got a ticket.

(6) *nanglokat iti tawa **[ti sinoman** nga*
AP.PERF.open DET window DET who-MAN COMP
immuna a simmangpet] #ngem awan immuna
AP.PERF.first COMP AP.PERF.arrive but not.exist arrive
'Whoever arrived first opened a window, (# but no one arrived).'
⇝ *There is a person that arrived first*

(7) *nanglokat iti tawa [ti immuna a*
AP.PERF.open DET window DET AP.PERF.first COMP
simmangpet] #ngem awan immuna
AP.PERF.arrive but not.exist arrive
'A certain one who arrived first opened a window, (# but no one arrived).'
⇝ *There is a person that arrived first*

So, at least in positive, episodic contexts, both *m*FRs and headless relatives convey EXISTENCE. However, if we systematically apply the investigative toolkit supplied by the literature on not-at-issue meaning (in particular Tonhauser et al. 2013), we arrive at the conclusion that *m*FRs and headless relatives convey EXISTENCE in quite different ways. I will show that these diagnostics point towards *m*FRs encoding EXISTENCE as a presupposition, while headless relatives encode EXISTENCE in their asserted content. This puts *m*FRs, but not headless relatives, in a semantic category with English DPs headed by *the* which are generally taken to presuppose EXISTENCE and UNIQUENESS (e.g., Strawson 1950; Sharvy 1980; Barwise and Cooper 1981; Link 1983; Partee 1987; Chierchia 1998).

To establish the nature of these uniqueness and existence implications, I use diagnostics from Tonhauser et al. (2013). An essential auxiliary definition is the notion of m-positive and m-neutral contexts (where m is a proposition).

(8) m-POSITIVE AND m-NEUTRAL CONTEXTS: An m-positive context is an utterance context that entails or implies m. An m-neutral context is an utterance context that entails or implies neither m nor $\neg m$.
(Tonhauser et al. 2013:75)

Given the definition of m-positive and m-neutral contexts we can establish whether or not an entailment of some expression imposes a strong contextual felicity constraint. The use of the term 'strong contextual felicity constraint' follows Tonhauser et al. 2013, referring to a constraint determining that the expression is only felicitously uttered if the context of utterance entails a particular proposition.

(9) STRONG CONTEXTUAL FELICITY: Let S be an atomic sentence that contains trigger t of projective content m.

(i) If uttering S is acceptable in an m-neutral context, then trigger t does not impose a strong contextual felicity constraint with respect to m.

(ii) If uttering S is unacceptable in an m-neutral context and acceptable in a minimally different m-positive context, then trigger t imposes a strong contextual felicity constraint with respect to m. (Tonhauser et al. 2013:76)

By using these diagnostics, we can determine that an utterance of an *m*FR is acceptable in an EXISTENCE-positive context, a context entailing EXISTENCE, (10a), but unacceptable in an EXISTENCE-neutral context (10b).

(10) a. [**EXISTENCE-positive context**: Juan and Maria approach a closed room which is not sound-proof. Maria walks inside for a minute. Juan hears singing inside. Maria then comes out and says:]

napintas *ti* *boses* *[ti* *sinoman* *nga*
STAT.beautiful DET voice DET who-MAN COMP
agkankanta]
AP.PROG.sing
'Whoever is singing has a beautiful voice.'

b. [**EXISTENCE-neutral context**: Juan and Maria approach a closed, sound-proof room. Maria walks inside for a minute, then comes out and says:]

#napintas *ti* *boses* *[ti* *sinoman* *nga*
STAT.beautiful DET voice DET who-MAN COMP
agkankanta]
AP.PROG.sing
'Whoever is singing has a beautiful voice.'

In (10a), both Juan and Maria's belief states entail the existence of an individual who is singing. In (10b), Juan's belief state does not entail the singer's existence (the sound-proof room may or may not contain a singer, as far as Juan believes). As Juan's belief state in (10b) neither entails EXISTENCE nor its negation, it is EXISTENCE-neutral. Thus, the mutual beliefs of Juan and Maria are EXISTENCE-neutral. As the *m*FR is infelicitous in this context, I

conclude EXISTENCE is a strong contextual felicity constraint on the use of an *m*FR.

An utterance of a headless relative in an EXISTENCE-neutral utterance context is perfectly felicitous (11). I therefore conclude that EXISTENCE is not a strong contextual felicity constraint on the use of a headless relative.

(11) [**EXISTENCE-neutral context**: Juan and Maria approach a closed, sound-proof room, Maria walks inside for a minute, then comes out.]

napintas *ti* *boses* *[ti* *agkankanta]*
STAT.beautiful DET voice DET AP.PROG.sing
'A certain one who is singing has a beautiful voice.'

These facts fall out of an analysis where the semantics of an *m*FR carries EXISTENCE as a felicity condition on its utterance context: the use of *m*FRs are only felicitous if EXISTENCE holds in the utterance context. My preliminary hypothesis is that EXISTENCE is a presupposition of an *m*FR but not of a headless relative. This analysis predicts that the existential entailment of *m*FRs should "project": it should scope out of sentential operators such as negation and conditionals.

2.3 Projection of Existence

To diagnose whether or not EXISTENCE is projective when triggered by an *m*FR, I again use diagnostics in Tonhauser et al. 2013. The tests for the projectivity of a proposition p differ based on whether or not p is a strong contextual felicity constraint or not. EXISTENCE is a strong contextual felicity constraint on the use of a *m*FR. We therefore use the following diagnostic:

- If the *m*FR **remains unacceptable** in an EXISTENCE-neutral context even if we negate S or put S as the antecedent of a conditional, then EXISTENCE '**projects**' through negation/conditionals.
- If the *m*FR **becomes acceptable** in an EXISTENCE-neutral context when we negate S or put S as the antecedent of a conditional, then EXISTENCE does not '**project**'.

The data below shows that the former is true: the use of an *m*FR is still unacceptable in a context which is EXISTENCE-neutral, even when the sentence is negated (12) or in the antecedent of a conditional (13).

(12) a. [**EXISTENCE-positive context**: Juan and Maria are entering a cabin. They know that someone has been there before (the door was unlocked), all the windows are closed. Juan:]

haan a nanglokat iti tawa [ti sinoman
NEG COMP AP.open DET window DET who-MAN
nga immuna a simmangpet]
COMP AP.first COMP AP.open
'It's not the case that whoever arrived first opened a window.'

b. [**EXISTENCE-neutral context**: Juan and Maria are entering a cabin. They don't know whether anyone has been there before. All the windows are closed. Juan:]
#haan a nanglokat ti tawa [ti sinoman
NEG COMP AP.open DET window DET who-MAN
nga immuna a simmangpet]
C AP.first C AP.open
#'It's not the case that whoever arrived first opened the window.'

(13) a. [**EXISTENCE-positive context**: Juan and Maria are approaching a cabin. They are very hot, and they know someone has arrived at the house and cooled the house down. Juan:]
no nanglokat iti tawa [ti sinoman nga
if AP.open DET window DET who-MAN COMP
immuna a simmangpet], namaliis diay balay
AP.first COMP AP.arrive, PERF.cold that house
'If whoever arrived first opened a window, the house is cool.'

b. [**EXISTENCE-neutral context**: Juan and Maria are approaching a cabin. They are very hot, but they don't know if anyone has arrived at the house yet and cooled the house down. Juan:]
#no nanglokat iti tawa [ti sinoman nga
if AP.open DET window DET who-MAN COMP
immuna a simmangpet], namaliis diay balay
AP.first COMP AP.arrive, PERF.cold that house
#'If whoever arrived first opened a window, the house is cool.'

Based on these data we can conclude that the existence implication triggered by an *m*FR "projects" through negation and conditionals. Diagnosing the projective behaviour of a headless relative is a little simpler as there is no strong contextual felicity constraint. We merely need to see if EXISTENCE is still implied in negative and conditional sentences. If the implication of EXISTENCE survives, it is projective. The following data demonstrate that if a headless relative is in the pivot position of the sentence, it still entails EXISTENCE even if the sentence is negated or conditionalised.

In (14) and (15), the verb *nanglokat* bears the actor-pivot morpheme *nang-* and therefore the headless relative is the "pivot" (being in the actor thematic role).

(14) Negation
[**EXISTENCE-neutral context**: Maria is entering a cabin. She doesn't know whether anyone has been there before. All the windows are closed. Juan is already there, he says:]

haan a nanglokat iti tawa [ti immuna a
NEG COMP AP.open DET window DET AP.first COMP
simmangpet]
AP.open
'It's not the case that a certain one that arrived first opened a window.'
⇝ *Someone arrived first*

(15) Conditionals
[**EXISTENCE-neutral context**: Maria is approaching a cabin. She is very hot, but she doesn't know if anyone has arrived at the house yet and cooled the house down. Juan:]

no nanglokat iti tawa [ti immuna a simmangpet],
if AP.open DET wind. DET AP.first C AP.arrive,
namaliis diay balay
cold that house
'If a certain one that arrived first opened a window, the house is cool.'
⇝ *Someone arrived first*

We therefore conclude that both *m*FRs and headless relatives project through negation and conditionals, but only *m*FR requires EXISTENCE to be an entailment of the utterance context. As a final diagnostic for the presuppositional status of EXISTENCE for *m*FRs, we can test whether the entailment undergoes filtering, as per Karttunen (1973). As the following filtering sentence cancels the EXISTENCE entailment of the *m*FR, we have evidence that the EXISTENCE entailment behaves much like a presupposition.

(16) [**Context**: Maria doesn't know whether or not her family has bought flowers today, but she knows they have good taste in flowers]

no adda sabongda, napintas [ti aniaman daydiay]
if have flower.3PL, beautiful DET what-MAN there
'If they have any flowers, then whatever flowers are there are beautiful.' *does not entail* "There are flowers that they bought."

The preliminary hypothesis is therefore that the existence implication is a presupposition triggered by *m*FRs, but not by headless relatives. However, both *m*FRs and headless relatives scope out of negation and conditionals. I therefore suggest that *m*FRs are presuppositional definites in the sense of Strawson 1950, but headless relatives are indefinites whose scope is constrained by Philippine-type verbal morphology.

3. A semantics for *ti*

The scope of an indefinite is determined by whether or not the indefinite is a pivot or not. As stated earlier, a DP's status as pivot is determined by whether the verb bears morphology matching the thematic role of the DP. If the DP is the pivot, it will necessarily take wide scope with respect to sentential operators like negation and conditionals. If the DP is the logical subject (the intransitive sole argument or the agentive argument of a transitive, regardless of whether it is a pivot), it also necessarily takes wide scope.

If a transitive verb has actor pivot morphology, the non-pivot patient is necessarily a narrow scope indefinite. Obliques which are non-pivots are ambiguously narrow or wide scope. This is summarised in the table below.

Thematic role	If pivot:	If not-pivot
Intransitive sole argument	always wide scope	always wide scope
Transitive actor	always wide scope	always wide scope
Transitive patient	always wide scope	always narrow scope
Oblique	always wide scope	unspecified (both ok)

Non-pivot transitive patients must be non-specific indefinites. Inherently specific pronouns and proper names may not be in the non-pivot transitive patient position. Non-pivot transitive patients are marked by either the determiner *ti* or *iti*, but I have not yet identified a semantic difference associated with this choice. My working hypothesis is that *iti* is composed morphologically of a prepositional case marker *i-* and the determiner *ti*. In (17), the non-pivot transitive patient *iti tawa* is interpreted as an indefinite obligatorily scoping below the negative particle *haan*.

(17) *haan nga **nang**lokat [i-ti tawa]$_O$ [ti baket]$_A$*
not COMP **AP.**open DET window DET woman
'A (particular) woman didn't open any windows.'
$\exists x[\textbf{woman}(x) \wedge \neg\exists y[\textbf{window}(y) \wedge \textbf{open}(x, y)]]$

To handle the wide scope indefinite facts, I employ free variable choice functions in the style of Reinhart (1997) and Matthewson (1998). The hypothesis is that *ti* takes a property-denoting argument P, and introduces a free

variable choice function f. Depending on the value of f, f will take P as its argument and return one individual member of P. The choice function therefore shifts the property to an e-type expression and thus can compose with the rest of sentence.

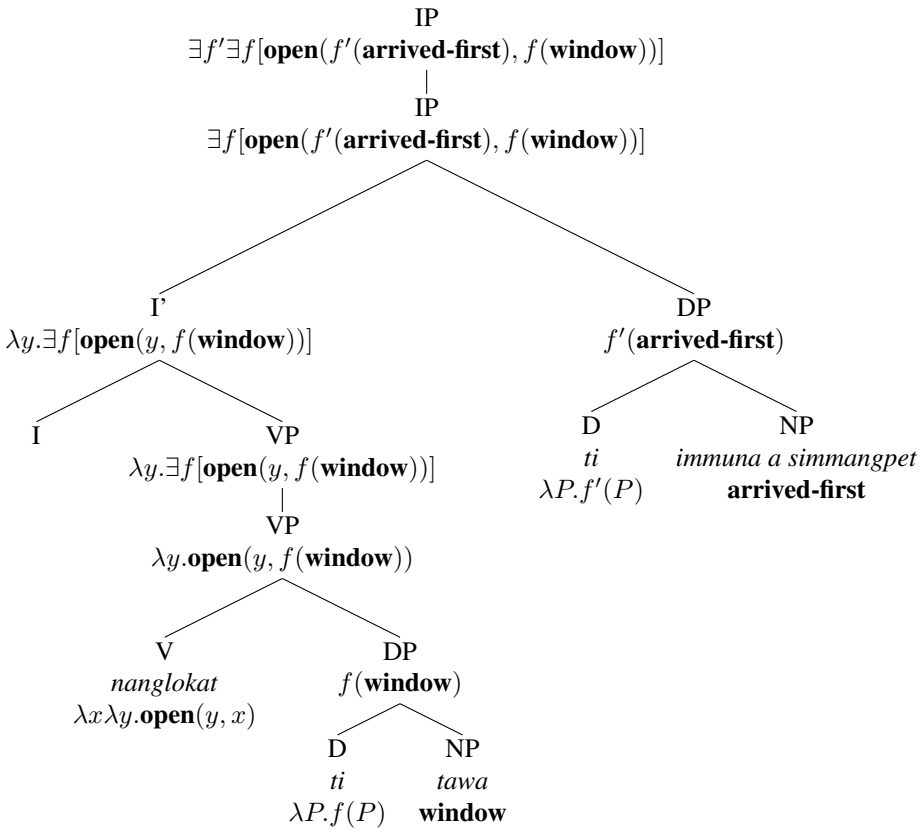
(18) *ti* $\rightsquigarrow \lambda P.f(P)$, where $f \in D_{\langle\langle e,t\rangle,e\rangle}$

The clausal component of a headless relative is a property type. On composing with the determiner *ti*, the choice function selects an individual who instantiates the property.

(19) *immuna a simmangpet* $\rightsquigarrow$ **arrived-first**
ti(*immuna a simmangpet*) $\rightsquigarrow f($**arrived first**$)$

The scoping properties of indefinites are handled by existentially closing the free variable choice function. If the DP is a pivot, or an agent, the choice function variable is existentially bound at the assertion level. If the DP is an non-pivot transitive patient, the choice function variable is existentially bound at the VP level. The tree in (20) gives a compositional semantics and a rough syntax for an actor pivot sentence with the actor argument in a rightward specifier, and the non-pivot transitive patient in a VP internal position.

(20)



The DP in the patient position introduces a free choice variable f, which is existentially bound at the VP level, ensuring the indefinite scopes below negation, conditionals and other operators outside of the VP. The free choice variable f' introduced by the agent DP is bound at the highest possible level, ensuring the indefinite scopes wide.

4. The modal implication of *m*FRs

Besides EXISTENCE and UNIQUENESS, in episodic contexts, *m*FRs imply UNCERTAINTY. By UNCERTAINTY, I mean that the conversational participants are mutually unable to uniquely identify the referent of the *m*FR. I show this implication in action where the preceding context sets up certainty about the free relative's referent. In such cases the *m*FR is infelicitous.

(21) *#Amok nga ni Carlos ti nagtakaw ti alahas ken*
know-1SG COMP DET Carlos DET AP.steal the jewel and
timmakas idi Miyerkoles [ti sinoman nga nagtakaw
AP.escape on Wednesday DET who-MAN COMP AP.steal
ti alahas].
DET jewel
#'I know that Carlos stole the jewels and whoever stole the jewels escaped on Wednesday.'[3]

By the same token, we also find that *m*FRs are infelicitous with a *tinnaga ket DP* ('namely DP') parenthetical (cf. Dayal 1997).

(22) *#Timmakas [ti sinoman nga nagtakaw ti alahas]*
AP.escape DET who-MAN COMP AP.steal DET jewel
(tinnaga ket Carlos) idi Miyerkoles.
OP.name TOP Carlos on Wednesday
#'Whoever stole the jewels, namely Carlos, escaped on Wednesday.'[4]

In (21)-(22), the *m*FR signals ignorance on the part of the speaker as to the referent's identity. However, the use of an *m*FR does not always imply uncertainty on the part of the speaker. In the following "quiz show" context, ignorance can be on the part of the hearer.

[3] *Speaker comment:* I could say that if I'm trying to piece a puzzle, and I have two pieces of knowledge and I know that Carlos took it, and I know that whoever escaped on Wednesday, therefore I know that Carlos escaped on Wednesday.

[4] *Speaker comment*: Sounds awkward, it's like, hey guys, we know for a fact that its Carlos who did it, but I'm still using *sinoman*! I can actually say that with my friends and I'm like mocking, I can perhaps say I would say something ... Ok, I'm telling you this, but I'm pretending not to know, but I'm saying "you know who", I drop the bomb at the end and say it's Carlos.

(23) [Context: A asks B to guess what kind of animal is inside the box A is holding. A drops a banana in the box and listens to the sound of the animal happily eating the banana. A gives a clue:]

kayat [ti aniaman nga adda iti kahon] ti saba
want DET what.MAN COMP exist DET box DET banana
'Whatever's in this box likes bananas.'

In other uses, the speaker and the hearer may each be certain about the referent of the *m*FR but disagree on the referent's identity, as in the following conversation (adapted from Condoravdi to appear).

(24) *A: immuna nga simmangpet ni Juan*
AP.arrive COMP AP.first DET Juan
'Juan arrived first.'

B: Saan! immunga nga simmangpet ni Maria
no AP.arrive COMP AP.first DET Maria
'No! Maria arrived first.'

A: nanglokat ti tawa [ti sinoman nga immuna nga simmangpet]
AP.open DET window DET who.MAN COMP AP.arrive C AP.first
'Whoever arrived first was the one who opened the window.'

I hypothesise that UNCERTAINTY is a non-at-issue meaning component of *m*FRs. I diagnose this by its insensitivity to sentential operators like negation (25). In contexts which do not support UNCERTAINTY, i.e., contexts where the conversational participants are reasonably assured of the identity of the free relative referent, the *m*FR is infelicitous even in negated and conditionalised sentences.

(25) *Amok nga ni Carlos ti nagtakaw ti alahas*
know-1SG COMP DET Carlos DET AP.steal the jewel
'I know that Carlos was the one who stole the jewels.'

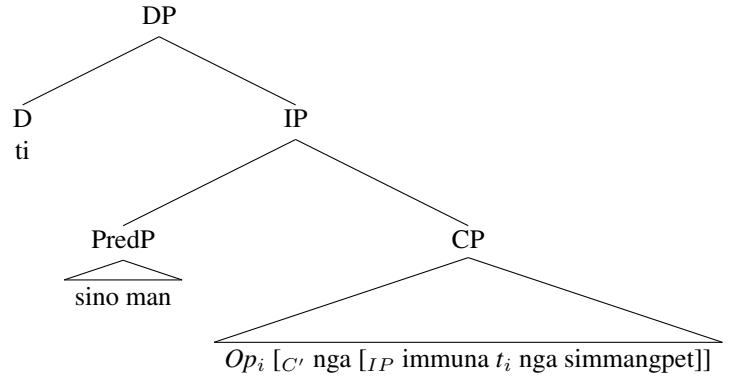
#ken ***haan nga*** *timmakas idi Miyerkoles* ***[ti sinoman*** *nga nagtakaw ti alahas].*
and not COMP AP.escape on Wednesday DET who-MAN COMP AP.steal DET jewel
#'...and it's not the case that whoever stole the jewels escaped on Wednesday.'

At this stage I lack the empirical data to conclusively determine whether UNCERTAINTY is better characterised as a presupposition or conventional implicature in the style of Potts 2005. I characterise UNCERTAINTY as a felicity condition on the use of an *m*FR in a given utterance context, though this could be altered to a Potts-style alternate meaning dimension if new data support such an analysis.

5. Analysis

In this final section I sketch an analysis of Ilokano free relatives and their compositional semantics. The syntactic analysis adapts the Guilfoyle et al. (1992) analysis of Tagalog, with a right branching specifier subject. Following the Paul (2000), Potsdam (2006) analysis of Malagasy, I analyse *wh*-questions as cleft structures: the *wh*-expression in predicate position and the prejacent clause as a sentential subject. (26) is a syntactic analysis of an *m*FR.

(26)



The internal CP constituent forming the "subject" of the cleft structure has an intensional property type.

(27) *nga immuna nga simmangpet* $\rightsquigarrow \lambda x \lambda w.\textbf{arrived-first}_w(x)$

Recall that *m*FRs, but not headless relatives encode a definiteness presupposition. Both kinds of DPs use the determiner *ti*, but only *m*FRs contain *wh*-morphology. To capture this semantic discrepancy, I encode the definiteness presupposition of an *m*FR on its *wh*-morphology.

The following is a semantics for the *wh*-morphology found in an *m*FR. It must encode a restriction property, e.g., *sino*, 'who', applies only to humans (or at least animates), while *ania*, 'what', applies to inanimates. To capture this, the lexical semantics of *sino* includes an intensional property **human**, and *ania* includes **thing** and so on. The *wh*-item is an expression of type $\langle\langle e, st\rangle, \langle e, st\rangle\rangle$, a function from properties to properties. In (26), the *wh*-item

sits in the predicative position, and takes a *wh*-cleft CP as its subject. The *wh*-cleft is a property type and serves as the first argument of the *wh*-item. The *wh*-item *sino* takes the property denoted by the cleft, and returns the property of being the unique maximal human instantiator of that property. For example, the *wh*-item *sino*, takes a property P, and returns the property of being the unique maximal member of P which is human.

(28) **sino** $\rightsquigarrow \lambda P \lambda x \lambda w.x = \iota y[\textbf{human}_w(y) \wedge P_w(y)]$[5]

The semantics of *man* encodes a felicity condition, such that its use is only felicitous if the condition is met. The condition is one of "modal variation". For some input property P, *man* implies that for every individual x in the domain, it is not true that x holds P in every world in a contextually supplied modal base, or equivalently, there is some world in which x does not hold P. It is a *wh*-item-modifier, and therefore is a function which takes a *wh*-item-type expression and returns another *wh*-item-type expression. *man* is an identity function, returning the same *wh*-item as its input, but adds the not-at-issue felicity condition of modal variation.

(29) *man* $\rightsquigarrow \lambda \mu_{est,est} \lambda P : \forall y[\exists v \in W[\neg P(y)(v)]] \,.\, \lambda x \lambda w.\mu(P)(x)(w)$

The felicity condition contains a free variable, modal base W (of type $\langle s,t \rangle$). In episodic contexts, W will anaphorically refer to the conversational common ground (the mutual public beliefs of conversational participants). The end result is that in episodic contexts, *m*FRs entail that for any given individual y, the conversational participants are mutually unable to say with certainty that y holds property P. The following is the result of composing *man* with *sino*, yielding the complex *wh*-item *sinoman*.

(30) *man*(*sino*)
$\rightsquigarrow \lambda P : \forall y[\exists v \in W[\neg P(y)(v)]] \,.$
$\lambda x \lambda w.x = \iota z[\textbf{human}(z)(w) \wedge P(z)(w)]$

(30) states that for any property P, the use of *sinoman* is felicitous iff for all individuals y, there's a world in W in which y doesn't hold P. It's at-issue content is is the property of being the unique human (or animate) instantiator of P. Composing this function with our clausal argument gives the desired free relative semantics.

[5] $\iota y[P_w(y)]$ presupposes $\exists x[P_w(x) \wedge \forall z[P_w(z) \rightarrow z \leq x]]$ (i.e., EXISTENCE and UNIQUENESS hold for P). $\iota y[P_w(y)]$ denotes the unique individual y such that y holds P at w.

(31) *man*(*sino*)(*nga immuna a simmangpet*)
felicity condition: $\forall x[\exists v \in W[\neg$**arrived-first**$(x)(v)]]$,
at-issue content: $\lambda y \lambda w.y = \iota z[$**human**$(z)(w) \wedge$ **arrived-first**$(z)(w)]$

The free relative in an episodic context imposes the felicity condition that for all individuals x, the conversational participants are unable to say with certainty that x arrived first. The at-issue content of the free relative is that it denotes the property of being the unique, maximal indivdual which is human and arrived first. As *man*(*sino*)(*nga immuna a simmangpet*) is a property type, it can combine with (an intensional version of) *ti* which shifts it to an e-type expression.

5.1 Extending the analysis of *man*

The implication of UNCERTAINTY triggered by the use of an *m*FR is captured formally by a felicity condition of modal variation across some contextually supplied modal base W. Following Lauer (2009), in episodic contexts (to which I have devoted my attention in this paper), I take this modal base is the mutual public beliefs of the conversational participants. In episodic contexts, the referent of the *m*FR is inconsistent across the mutual public beliefs of the conversational participants. This amounts to saying that for any individual, the conversational participants are collectively unable to say that the individual instantiates the descriptive content of the FR. This gives rise to the uncertainty implications, similar to those observed in Dayal (1997), von Fintel (2000) among others for English *wh–ever* expressions.

This modal variation analysis of the semantics of *man* makes links with other seemingly disparate uses of *man* in Ilokano besides its use in *m*FRs. For example, *man* can occur as a mirative particle (strictly in main clauses) marking the speaker's surprise about the propositional content of the utterance (32).

(32) *Napudot* ***man*** *ita*
hot MAN this
'It is surprisingly hot today.'

Further, the particle may be used as a marker of politeness in imperatives, as in (33).

(33) *Manang Biday, ilukatmo* ***man*** *'ta bintana.*
older.sister Biday, OP.open=2SG.ERG MAN that window
'Older sister Biday, please open that window.'

In Collins (2014), I suggested a unified account of the surprise marker and the politeness marker uses of *man*. In both cases, *man* takes a propositional argument p and returns p again just in case a felicity condition is met: that p is not true in every world across some modal base W. Where in the free relative use, the modal base is the mutual beliefs of the conversational participants, in the mirative and politeness marker uses, the modal base is the set of worlds in which the speaker's expectations are fulfilled.

- *Mirative* in (32):
  at-issue content = *it's hot today*,
  not-at-issue content = *it is not the case that in all the worlds in which my default expectations are true it is hot today*

- *Imperative* in (33):
  at-issue content = *my preferences are that you open the window*,
  not-at-issue content = *it is not the case that in all the worlds in which my default expectations are true you open the window*

The politeness effect of *man* in imperatives arises through a face-saving act of negating the expectation that the listener complies with speakers preferences. The analysis in (31) unites the semantics of the mirative, politeness marker and FRs. *man* encodes a non-at-issue meaning component of ensuring that in some worlds within a modal base, the prejacent is false.

Having set up the semantics of mirative and politeness *man* as imposing a modal variation condition, the link between these uses and the *m*FR use of *man* emerges. The felicity condition imposed by the *m*FR use of *man* in (31) takes the modal variation condition imposed by mirative/politeness-marker *man*, and iterates the condition over every individual in the domain. This way of conceptualizing the felicity condition in (31) is sketched in (34). It determines that for any individual in the domain, there is a possibility given the conversational participants' mutual beliefs that the individual did not arrive first.

(34) $[\![$*man*(*who*)(*arrived first*)$]\!]$ is felicitous iff
$\exists w \in W$[*Juan didn't arrive first at* w] and
$\exists w \in W$[*Maria didn't arrive first at* w] and
$\exists w \in W$[*Carlos didn't arrive first at* w] and
...

When the modal variation condition is iterated over every individual in the domain and closed under conjunction, the use of an *m*FR is felicitous just in

case there is no individual such that the conversational participants are mutually certain that they arrived first, giving rise to the UNCERTAINTY implication. The proposal is that the basic function of *man* is to introduce a not-at-issue meaning component of modal variation, and this generalizes to its uses as a mirative, politeness marker, and a marker of uncertainty in a free relative.

6. Conclusion

To summarise the analysis: the existence and uniqueness of a referent must be a common ground belief of conversational participants for a felicitous use of an *m*FR in an episodic context. The existence and uniqueness implications are *not* contributed by the determiner: headless relatives with the same determiner do not show the same contextual felicity constraints, leading us to conclude they are introduced by the *wh*-item. The modal implication of uncertainty is introduced by a felicity condition on the *man* particle, independently motivated by *man*'s use as a mirative/politeness marker.

References

Barwise, Jon and Robin Cooper. 1981. Generalized quantifiers and natural language. *Linguistics and Philosophy* 4:159–219.

Chierchia, Gennaro. 1998. Reference to kinds across languages. *Natural Language Semantics* 6:339–405.

Collins, James N. 2014. Expectations and the Ilokano mirative. Ms. `http://web.stanford.edu/~jamesnc/collins2014-man.pdf`

Condoravdi, Cleo. to appear. Ignorance, Indifference, and Individuation with *wh-ever*. *Epistemic indefinites*, ed. by L. Alonso-Ovalle and P. Menendez-Benito. Oxford: Oxford University Press.

Dayal, Veneeta. 1997. Free relatives and *ever*: Identity and free choice readings. *Proceedings of SALT VII*, 99–116. Ithaca, NY: CLC Publications, Cornell University.

von Fintel, Kai. 2000. Whatever. *Proceedings of SALT X*, ed. by B. Jackson and T. Matthews, 27–39. Ithaca, NY: Cornell University.

Guilfoyle, Eithne, Henrietta Hung, and Lisa Travis. 1992. SPEC of IP and SPEC of VP: Two subjects in Austronesian languages. *Natural Language and Linguistic Theory* 10:375–414.

Jacobson, Pauline. 1995. On the quantificational force of English free relatives. *Quantification in natural languages, vol. II*, ed. by E. Bach et al., 451–487. Kluwer.

Karttunen, Lauri. 1973. Presuppositions of compound sentences. *Linguistic Inquiry* 4:167–93.

Krifka, Manfred. 2001. For a structured meaning account of questions and answers. *Audiatur Vox Sapientia: A festschrift for Arnim von Stechow* 52:287–319.

Lauer, Sven. 2011. Free relatives with *-ever*: Meaning and use. Ms., Stanford University.

Link, Godehard. 1983. The logical analysis of plurals and mass terms: A lattice-theoretical approach. *Meaning, use, and interpretation of language*, ed. by R. Bäuerle, C. Schwarze, and A. v. Stechow, 302–323. Berlin: Mouton.

Matthewson, L. 1999. On the interpretation of wide-scope indefinites. *Natural Language Semantics* 7: 79–134.

Partee, Barbara H. 1987. Noun phrase interpretation and type-shifting principles. *Studies in discourse representation theory and the theory of generalized quantifiers*, ed. by J. Groenendijk, D. de Jong, and M. Stokhof, 115–143. Dordrecht: Foris Publications.

Paul, Ileana. 2000. Malagasy Clause Structure. Ph.D. dissertation, McGill University.

Potsdam, Eric. 2006. The cleft structure of Malagasy *wh*-questions. *Clause structure and adjuncts in Austronesian languages*, ed. by H.-M. Gärtner, P. Law, and J. Sabel, 195–232. Berlin: Mouton de Gruyter.

Potts, Christopher. 2005. *The logic of conventional implicatures*. Oxford: Oxford University Press.

Reinhart, Tanya. 1997. Quantifier scope: How labor is divided between QR and choice functions. *Linguistics and Philosophy* 20(4):335–397.

Sharvy, Richard. 1980. A more general theory of definite descriptions. *The Philosophical Review* 89:607-624.

Stalnaker, Robert C. 1973. Presuppositions. *Journal of Philosophical Logic* 2:447–457.

Stalnaker, Robert C. 1978. Assertion. *Syntax and Semantics* 9:315–322.

Tonhauser, Judith, David Beaver, Craige Roberts, and Mandy Simons. 2013. Towards a taxonomy of projective content. *Language* 89:66–109.