

## Expanding our Typology of Conjoined Comparatives<sup>1</sup>

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### 1. The puzzle

Conjoined comparatives have traditionally been described as:

- involving two conjoined clauses to associate the target of comparison and the standard of comparison (Stassen 1985, 2013),
- having the positive form of predicates surface (Kennedy 1999, 2011).

(1) Kaw -ohra naka Waraba , kaw naha Kaywerye.  
 tall not be.3SG.M Waraba tall be.3SG.M Kaywerye  
 ‘Kaywerye is bigger than Waraba.’ Hixkaryana (Stassen 1985: 185)

Mixtec has been included as a classic example of conjoined comparatives (Stassen 1985). However, San Sebastián del Monte Mixtec (SSM) does not fit into the current syntactic or semantic definition of conjoined comparatives.

(2) [TP<sub>1</sub> Jikò=**ka**=i] , [TP<sub>2</sub> òònjìvì Chuchi].  
 tall =GA=1SG NEG Chuchi  
 ‘Yo soy más alto que Chuchi.’  
 ‘I am taller than Chuchi.’

- ⇒ SSM presents both negation and a morpheme functioning as a comparative morpheme, we call this kind of construction a “mixed conjoined comparative construction”
- ⇒ The mixed conjoined construction presents a big problem for a compositional semantics: we have analysis available for conjoined comparatives (Bochnak 2015, Bowler 2020, a.o.) and for comparatives with a comparative morpheme (Bartsch & Vennemann 1972, Cresswell 1976, Heim 2001, a.o.), but not one including both of these features.
- ⇒ Thus, having both a comparative morpheme and a conjoined comparative with negation seems to provide one too many ways of partitioning the gradable scale.
- ⇒ SSM is not the only language with these characteristics, data have emerged in Salish (Davis & Mellesmoen 2019) and possibly in Algonquian (Dahlstrom 2011) thus it is a wider typological issue.
- ⇒ Although we do not have a solution yet, we will show you data that we believe will rule out the most obvious solutions and support the syntactic structure that we assume,

<sup>1</sup> Abbreviations which are used in this paper: ADD = additive particle (Chalcatongo), BASE = pronominal base, CFR = classifier, COMP = completive, COMP2 = completive used with actions on going, CONT = continuative, F = feminine, GA = comparative morpheme, HON = honorific, HUM = human, IND = independent pronouns, LNK = linker, M = masculine, PL = plural, NEG = negation, NEG.FOC = negative focus (Chalcatongo), NEG.IRR = negation for irrealis, NEG.REAL = negation for realis, POT = potential, SG = singular. Any mistakes are our own.

⇒ We conclude by opening a conversation about the next steps to take towards a compositional analysis.

#### Goals of the talk:

- We support the idea that we are dealing with conjoined comparatives in SSM, but we expand our syntactic typology of conjoined comparatives.
- we also expand our definition of conjoined comparatives to include conjoined comparatives with degrees (Davis & Mellesmoen 2019, Mantenido 2020).<sup>2</sup>
- we argue that the presence of degree morphology requires an expansion of the analysis of the semantics of conjoined comparatives and an expansion of the typology of comparatives more widely, to account for Mixtec but also for other mixed conjoined comparatives.

#### Roadmap:

- §2: introduces a brief outline of SSM with the information necessary to follow this talk.
- §3: discusses conjoined comparatives in SSM and lays out the problematics for the current understanding of conjoined comparatives.
- §4: offers evidence for the comparative construction in SSM.
- §5: presents the semantic properties of SSM mixed conjoined comparatives, and it discusses parts of a working analysis.
- §6: concludes and discusses future research questions.

## 2. Some information about San Sebastián del Monte Mixtec<sup>3</sup>

**San Sebastián del Monte Mixtec** (ISO mks; henceforth **SSM**), also known as Tò'on Ndà'vi, is part of the Mixtecan language family, Otomanguean stock (Rensch 1976). The Mixtecan language family consists of Mixtec, Cuicatec and Trique, though Mixtec and Cuicatec are part of the same subgroup, also called Mixtecan (Josserand 1983: 99-101).

- There are approximately 500,000 speakers of Mixtec languages in southern Mexico (in the states of Oaxaca, Puebla and Guerrero). However, through a migration process Mixtec is spoken in almost the whole country of Mexico. There are many varieties of Mixtec, many very different from each other.

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<sup>2</sup> Note that while SSM conjoined comparatives present negation, the Salish kind present antonyms. Additionally, the Salish language reported by Davis & Mellesmoen (2019) is ʔayʔajuθəm.

<sup>3</sup> The first author is a native speaker of Italian, with Spanish and English as her second languages; she has been working on this language for four years at the time of the write-up, thanks to the help of two language teachers and of the community. She has travelled to the town and spent time in the community on three separate occasions, she has also worked with a member of the community in Ventura county, California. The second author is a native English speaker who is studying Spanish; she has started working on this project recently, though she has a lot of fieldwork and semantic experience on other indigenous languages. The third author, a native speaker of Yucucimi de Ocampo Mixtec and of Spanish, is a linguist specialized on phonetics and phonology; he has visited the town once and started working on this project recently; he has also been working on his own variety of Mixtec for many years (including comparatives in the last year).

- In San Sebastián del Monte, Mixtec is the language used at home and in the common interactions in the town, as well as in the city hall (*agencia*) and in the Taekwon-do practices; however, the official educational language is Spanish.
- This work is part of a larger project which includes documentation and analysis of SSM and revitalization.
- All the data reported in this presentation come from my fieldwork with the community.
- San Sebastián del Monte is a town in the Santo Domingo Tonalá municipality of Oaxaca State, southern Mexico, in the district of Huajuapán, 45km southwest of Huajuapán de León, with a population of approximately 2000 people (latitude: 17.677778, longitude: -98.021944).



Figure 1: San Sebastián del Monte (right) as located within Mexico (left). Figure made with ggmaps (Kahle & Wickham 2013).

- SSM is a tonal language with three tones (Mantenuto 2020) and VSO word order, though other word orders are available depending on information structure (focus and topic).

(3) Sísi            tìnà    xità.  
 eat.CONT      dog    tortilla  
 ‘El perro come la tortilla.’  
 ‘The dog eats the tortilla.’ VSO

- The element which is in focus or in topic position needs to be to the left of the verb.

(4) Lupi    tà´vi            vásò.  
 Lupi    break.COMP    glass  
 ‘LUPI rompió el vaso.’  
 ‘LUPI broke the glass.’ SFOCUSVO

- (5) Lupi    tà'vi=ñá                      vásò.  
 Lupi    break.COMP=3SG.F    glass  
 'Lupi, la que rompió el vaso.'  
 'As for Lupi, she broke the glass.'

STOPICVSO

- SSM does not have any case marking on nouns or subject/object agreement marking on verbs.
- Aspect is marked on verbs through prefixes and tone (Mantenuto & Roberts 2018).
- We propose that SSM has both verbal and adjectival property concepts (Thompson 1989). The majority of property concepts are verbal, but the language has a small number of adjectival property concepts.
- However, proving that property concepts are verbs is difficult in SSM and in other Mixtec varieties (as reported for Chalcatongo Mixtec by Macaulay 1996:85).
- Property concepts in SSM are clearly not nominal.

### 2.1. Mixtec comparatives

SSM can express comparison with a number of different constructions: mixed conjoined comparatives, mixed locative comparatives, particle comparatives and comparatives using an exceed verb. In this section we are going to briefly introduce all of them; however, this talk will focus on the mixed conjoined comparatives.

- *A mixed comparative that has features of both conjoined and morphologically explicit comparison*

- (6) Jikó=**ka**=ì                      ,                      òònjiví                      mee=nì.  
 tall=GA=1SG                      NEG                      BASE=2SG.HON  
 'Yo soy más alto que usted.'  
 'I am taller than you.'

- *A mixed comparative that has features of both locative and morphologically explicit comparison*

Locative comparatives are monoclausal with the standard of comparison ('you') introduced by the locative *nòò*.

- (7) Jikó=**ka**=ì                      **nòò**                      mee=nì.  
 tall=GA=1SG    on                      BASE=2SG.HON  
 'Yo soy más alto que usted.'  
 'I am taller than you.'

- (8) A ka gya ni ma.  
 He is big me on  
 ‘Hi is bigger than me.’

Mandinka (Stassen 1985: 149)

- *A particle comparative*

To the best of our knowledge particle comparatives are present only in San Sebastián del Monte Mixtec within the Mixtec family. Moreover, from its distribution among speakers in the town, it seems to be a fairly new addition, as older people do not use it, middle age people use it somewhat and it is more common among younger speakers. This is a monoclausal construction.

- (9) Jikó=**ka**=i ja mee=nì.  
 tall.CONT=GA=1SG than BASE=2SG.HON  
 ‘Yo soy más alto que usted.’  
 ‘I am taller than you.’

- *A comparative using an exceed verb*

This is a structure which used an exceed verb, but that is distinct from Stassen (1985) exceed comparatives as it has a more complex construction. Stassen’s (1985) exceed comparatives are characterized by the use of a transitive verb whose lexical meaning in ‘to exceed’ or ‘to surpass’, and whose direct object is the standard of comparison.

- (10) Niyà’a o ònì libro kà’v-ì.  
 exceed.COMP LNK three book read.COMP-1SG  
 Intended: ‘Yo leí más de tres libros.’  
 Intended: ‘I read more than three books.’

- (11) Ille mi kere ju tiwon.  
 house my small exceed theirs  
 ‘Hi is bigger than me.’

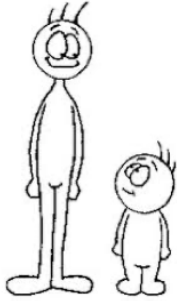
Yoruba (Stassen 1985: 165)

All these constructions (except for the exceed comparative) use a morpheme functioning as a comparative marker, *ga/ka*.

### 3. Conjoined comparatives - SSM within the typology

A comparison is the mental act by which two objects are assigned a position on a predicative scale. We have a comparison of inequality if the positions of two objects on the scale are different.

A comparative construction is what we use to express the comparison syntactically (Stassen 2013).



*Maria*                      *Juan*  
Target/Comparee        Standard

(12)        Maria is taller than Juan.

Conjoined comparatives are comparatives which use two conjoined clauses to associate the target of comparison and the standard of comparison (Stassen 1985).

- Two structurally independent clauses; one with the comparee DP<sup>4</sup>, the other containing the standard DP (Stassen 1985, 2013).
- Two predicates, one per clause (Stassen 1985, 2013).
- Adversative coordination of two clauses. There are two subtypes to express the adversativity syntactically: by means of an antonym (13) or by means of negation (14) (Stassen 1985, 2013).

(13)        Ua    **loa**    lenei    va'a    ,        ua        **puupuu**    lena.  
Is    long    this    boat        is        short        that  
'This boat is longer than that boat.'                      Samoan (Stassen, 1985: 187)

(14)        Kaw    -ohra    naka                      Waraba        ,        kaw    naha  
tall    not    be.3SG.M        Waraba                      tall    be.3SG.M  
Kaywerye.  
Kaywerye  
'Kaywerye is bigger than Waraba.'                      Hixkaryana (Stassen 1985: 185)

Note: none of these sentences presents overt coordination, rather a comma is used orthographically.

An example of a mixed conjoined comparative in SSM is reported in (15).

(15)        Jikó=**ka**=ì                      ,        òònjiví        mee=nì.  
tall=GA=1SG                      NEG                      BASE=2SG.HON  
'Yo soy más alto que usted.'  
'I am taller than you.'

<sup>4</sup> We are going to use DPs, although Stassen (1985, 2013) calls them NPs.

- There are two clauses, although no conjunction may appear overtly.

(16) Jikó=**ka**=ì (\*ti) òònjiví mee=nì.  
 tall=GA=1SG and NEG BASE=2SG.HON  
 ‘Yo soy más alto que usted.’  
 ‘I am taller than you.’

- Focus negation (*òònjiví*) introduces the second clause, making these resemble Hixkaryana-like conjoined comparatives: *I am tall, you are not*.

- Unlike conjoined comparatives in other languages (Samoan, Washo, Warlpiri), antonyms may not be used in the second clause.

(17) \* Jikó=**ka** Maria (ti) kùiti Juan.  
 tall=GA Maria and short Juan  
 Intended: ‘Maria is taller than Juan.’

- The second clause is understood to contain the same predicate as the first clause, but only the DP surfaces (see Macaulay 1996: 162 for Chalcatongo Mixtec).
- The first conjunct contains a morpheme functioning as a comparative morpheme (*ka*), hence our description of these as “mixed” conjoined/morphologically explicit comparatives.

(18) Context: You and I are both basketball-player-height, differing by 10 cm (4").

- a. Jikó=**ka**=ì , òònjiví mee=nì.  
 tall=GA=1SG NEG BASE=2SG.HON  
 ‘Yo soy más alto que usted.’  
 ‘I am taller than you.’ COMPARATIVE
- b. Jikó=ì , òònjiví mee=nì.  
 tall=1SG NEG BASE=2SG.HON  
 ‘Yo soy alto, usted no.’  
 ‘I am tall, [but] not you.’ NOT A COMPARATIVE

Given the context, (18)b ‘you are not tall’ would be false, as the truth conditions for (18)b in SSM apply a contextual standard of height to me and you independently.

Table 1 summarizes the position of SSM conjoined comparatives within the typology of conjoined comparatives.

*Table 1: Typology summary/comparison*

	<b>Expectations based on the literature definition of conjoined comparatives</b>	<b>SSM</b>	<b>Washo</b> (Bochnak 2015)	<b>Warlpiri</b> (Bowler 2016, 2020)	<b>ʔayʔajuθəm</b> (Davis & Mellesmoen 2019)
<b>Two clauses-two predicates</b>	Yes	Yes, but one clause is present, and for the second clause only the DP surfaces	Yes	Yes	Yes
<b>Negation/Antonyms</b>	Negation/Antonyms	Negation	Negation/Antonyms	Antonyms /Negation	Antonyms
<b>Positive predication (unmarked)</b>	Expected	No	Yes	Yes	No

→ There are enough problematic points listed in table 1 for SSM, so that we need to offer a possible analysis of mixed conjoined comparatives in SSM, both syntactically and semantically.

What about the semantic typology of conjoined comparatives?

- Stassen (1985) does not talk about semantics in detail, but research has been done on the semantics of conjoined comparatives in recent years (Beck et al. 2009, Pearson 2010, Bochnak 2015, Bowler 2016, 2020, Hohaus 2018, Reisinger & Lo 2017);
- However, Mixtec (Mantenuto 2020, León Vázquez & Mantenuto 2021), together with Salish (Davis & Mellesmoen 2019), presents an overt comparative morpheme within a conjoined comparison, which needs to be taken into account.<sup>5</sup>
- Moreover, the type of negation seems to play a role in the semantics of SSM conjoined comparatives.

We will use SSM as a case study to expand our understanding of conjoined comparatives, by asking the following questions:

1. What is the syntax of conjoined comparatives in SSM?
2. What are the semantic characteristics of conjoined comparatives in SSM?

<sup>5</sup> The finding of this mixed comparative structures occurred at the same time independently. Unfortunately, the data in Salish is still limited due to the higher level of endangerment of the language, and Davis & Mellesmoen (2019) only give a few data point. However, if we look at Stassen (1985, 2013) we can see that more languages have co-occurrence of a morpheme indicating ‘more’ and negation, thus further highlighting the need for an analysis.



#### 4. A syntactic analysis of SSM conjoined comparatives

Let's look at the syntax of SSM mixed conjoined comparatives.

##### 4.1. Negation

We are going to introduce the negation first because it will help us to support the conjoined comparative nature of the comparatives.

*Òònjìvì* is a focus negation, and it occurs in contrastive contexts as in (19).

- (19) Context: someone asks me if I ate the last apples in the kitchen.  
 Sàs=i tikua'á , òònjìvì manzana.  
 eat.COMP=1SG orange NEG apple  
 'Comí naranjas, no manzanas.'  
 'I ate oranges, [but] not apples.'

But it is also used in non-contrastive contexts where the element we are asking about is in focus.

- (20) Òònjìvì xità séen Liya.  
 NEG tortilla buy.CONT Liya  
 'No es tortilla lo que compra Liya.'  
 'It's not tortillas that Liya buys.'
- (21) A òònjìvì tikoò séen Liya?  
 Q NEG tamale buy.COMP Liya  
 'No son tamales los que compró Liya?'  
 'Aren't tamales what Liya bought?'

- The *òònjìvì* focus negation used in the comparative is distinct from other kinds of negations available in Mixtec.
- For example, in SSM, *koò* is used to negate predicates marked for continuative or completive aspect (22)-(23), while *òòn* is used to negate imperatives and future events marked for potential aspect (24)-(25).

- (22) Koò séen kuà'á=i kui'i.  
 NEG.REAL buy.CONT much=1SG fruit  
 'No estoy comprando mucha fruta.'  
 'I am not buying a lot of fruit.'
- (23) (Koò) ní-sèen kuà'á=i kui'i.  
 NEG.REAL NEG.PHRASAL-buy.COMP much=1SG fruit  
 'No compré mucha fruta.'  
 'I didn't buy a lot of fruit.'

- (24) Òòn            kusi            kua'=<sup>6</sup>            kui'i.  
 NEG.IRR        eat.POT        much=2SG        fruit  
 '¡No comas mucha fruta!  
 'Don't eat a lot of fruit!'
- (25) Òòn            kueen            kuà'á=i            kui'i.  
 NEG.IRR        buy.POT        much=1SG        fruit  
 'No voy a comprar mucha fruta.'  
 'I will not buy a lot of fruit.'

Although *òòn* looks like the first half of *òònjiví*, they are unrelated morphemes.

#### 4.2. Two clauses

Macaulay (1996) points out for Chalcatongo Mixtec that the second clause is understood to contain the same predicate as the first clause, but only the DP surfaces; that is also true in SSM.

- (26)        žíki            žáʔa        bèè=kà        niàsù        ħ̣=ka        žaʔá  
 pumpkin    this        heavy=ADD    NEG.FOC    one=ADD    this  
 'This pumpkin is heavier than this other one.' (Macaulay: 1996: 162 ex. 91)
- (27)        Jikó=**ka**        Pablo ,        òònjiví        Juan.  
 tall=GA        Pablo        NEG            Juan  
 'Pablo es más alto que Juan.'  
 'Pablo is taller than Juan.'

SSM focus is located in the left periphery of the sentence, so whenever an element is in focus it needs to precede the verb. *Òònjiví* is a focus negation, which takes as an argument a noun; the constituent formed by the negation+DP has always to precede the verb when it occurs in non-comparatives.

- (28)        a.        [Òònjiví        manzana]        sàs=i.  
           NEG            apple            eat.CONT=1SG  
           'No es manzana la que como.'  
           'It is not an apple what I eat.'
- b.        \* Sàs=i                    [òònjiví        manzana].  
           eat.CONT=1SG        NEG            apple

However, in comparatives it is not possible to front the second part of the conjoined negation, the one containing *òònjiví*.

- (29)        \* Òònjiví                    Juan        jikó=**ka**        Pablo.  
           NEG                    Juan        tall=GA        Pablo

<sup>6</sup> The second vowel in a bimoraic word can be elided in fast speech.

It is also not possible to extract from the second conjunct.

- (30) \*Nayóó      jikó=**ka**                  Chuchi      òònjiví?  
           who            tall=GA                  Chuchi      NEG
- (31) \*òònjiví      nayóó jikó=**ka**                  Chuchi?  
           NEG            who tall=GA                  Chuchi
- (32) Nayóó jikó=**ka**      nòò      Chuchi?  
       who tall=GA      on      Chuchi  
       ‘Who is Chuchi taller than?’

Moreover, negative focus *òònjiví* can be embedded under a verb like 'think', in which case an optional complementizer occurs.

- (33) Ká’án          Juan (ñà)      òònjiví tienda nì-sa’a      Liya.  
       think.CONT   Juan   COMP NEG store COMP-go      Liya  
       ‘Juan piensa que Liya no fue a la tienda.’  
       ‘Juan thinks that it wasn't the store that Liya went to' (but she did go somewhere)
- (34) Ká’án          Juan (ñà)      òònjiví Pablo jikó.  
       think.CONT   Juan   COMP NEG Pablo tall  
       ‘Juan piensa que Pablo no es alto.’  
       ‘Juan thinks that it's not Pablo who's tall' (but someone is)  
       ‘Juan thinks that Pablo is not tall.’

In the comparatives the complementizer is not allowed.

- (35) Jikó=**ka**      Pablo (\*ñà)      òònjiví      Juan.  
       tall=GA      Pablo   COMP NEG      Juan  
       ‘Pablo es más alto que Juan.’  
       ‘Pablo is taller than Juan.’

We take these points to be in favor of the idea that we are dealing with two conjuncts and not with subordination.

### 4.3. Two predicates

We assume that we are dealing with two predicates because of the following points, also related to the kind of negation that is used in SSM.

*Òònjiví*+DP cannot be uttered in isolation. It cannot stand on its own, not even when replying to a question which has introduced a predicate.

- (36) Q: Nayóó jikó=**kà**, Pablo a Juan?  
 who tall=GA Pablo Q Juan  
 ‘¿Quién es más alto, Pablo o Juan?’  
 ‘Who is taller? Pablo or Juan?’
- A: Pablo jikó=**kà**.  
 Pablo tall=GA  
 ‘Pablo es más alto.’  
 ‘Pablo is taller.’
- A’: \* Òònjiví Juan.  
 NEG Juan  
 ‘No Juan.’  
 ‘Not Juan.’

When we have a different kind of predicate, the whole clause occurs. The standard clause of the SSM subcomparative must be nominalized: it occurs as a light-headed relative clause.<sup>7</sup>

- (37) a. Kixi=**ka**=ì , òònjiví ñà-jakua’a=ì.  
 sleep.CONT=GA=1SG NEG CFR:THING-study.POT=1SG  
 ‘Yo duermo más de que voy a estudiar.’  
 ‘I sleep more than I will study.’<sup>8</sup>
- b. Kuju-kua’a=**ka**=ì , òònjiví ñà-jakua’=ó.  
 sleep.POT-much=GA=1SG NEG CFR:THING-study.POT=2SG  
 ‘Yo voy a dormir más de que vas a estudiar.’  
 ‘I will sleep more than you will study.’

<sup>7</sup> The following example illustrate what relative clauses look like in this language.

- (i) Nóni Charlie ti-jikó.  
 hug.CONT Charlie CFR:HUM.M-tall  
 ‘Charlie está abrazando a lo que es alto.’  
 ‘Charlie is hugging the one (male) who is tall.’

<sup>8</sup> The order of the conjuncts is fixed; however, more work is necessary in order to better understand light-headed comparative constructions like the ones presented here (for more preliminary information on this construction see Mantenuito 2020).

- (ii) \* Òònjiví ñà-jakua’a=ì , kixi=**ka**=ì  
 NEG CFR:THING-study.POT=1SG sleep.CONT=GA=1SG

- (38) a. Káá ka'ni=**kà** mesa , òònjíví ñà-jíkó=tó.  
 be.CONT large=GA table NEG CFR:THING-tall=3WOOD  
 'La mesa está más larga que alta.'  
 'The table is larger than it is tall.'
- b. Jíkó=**kà** mesa , òònjíví ñà-ndíkà=(**kà**)  
 tall=GA table NEG CFR:THING-wide=GA  
 vùtìyè'é.  
 door  
 'La mesa es más alta que la puerta es ancha.'  
 'The table is taller than the door is wide.'

If indeed the predicate is always presented in the second clause, then we take this to mean that stripping has occurred. The standard DP gets contrasted through negation, then focused and thus fronted. After the focused negated DP is fronted, everything else is elided.

- (39) a. Jíkó=**ka** Pablo , jíkó [òònjíví Juan].  
 tall=GA Pablo tall NEG Juan
- b. Jíkó=**ka** Pablo , [òònjíví Juan] jíkó.  
 tall=GA Pablo NEG Juan tall
- c. Jíkó=**ka** Pablo , [òònjíví Juan] ~~jíkó~~.  
 tall=GA Pablo NEG Juan ~~tall~~  
 'Pablo es más alto que Juan.'  
 'Pablo is taller than Juan.'

Summing up: we can confirm the conjoined nature of comparatives in SSM, but we need to expand the definition of conjoined comparatives to include

- Two conjoined clauses, where the second clause can undergo ellipsis.

## 5. Locating the semantics of SSM mixed conjoined comparatives

- The conjoined comparative in SSM includes the *ka/ga* morpheme, which looks like it contributes comparative semantics like English *-er/more*. Removing the morpheme makes the sentence a non-comparative.

- (40) Jíkó=i , òònjíví me=nì.  
 tall=1SG NEG BASE=2SG.HON  
 'Yo soy alto, usted no.'  
 'I am tall, you are not.'

- Semantically, the SSM mixed conjoined comparatives with *ka/ga* have multiple properties reminiscent of English comparatives (and in contrast with traditional degreeless languages like Washo).

- mixed conjoined comparatives are acceptable with minimum and maximum standard predicates.

(41) **Minimum standard property concept comparatives**

Nikàv̀à=kà barra yó'ò , ò̀̀njiví ñà-sèèn.  
 curve.COMP=GA bar this NEG CFR:THING-that  
 'Esta barra está más curva que esa.'  
 'This bar is more curved than that one.'

(42) **Maximum standard property concept comparatives**

Ìityí=kà p̃año yó'ò , ò̀̀njiví ñà-sèèn.  
 dry=GA bar this NEG CFR:THING-that  
 'Este rebozo está más seco que eso.'  
 'This shawl is drier than that one.'

- Mixed conjoined comparatives are felicitous in crisp judgment contexts, which would be unexpected if the clauses involve positive (i.e., unmodified) uses of the relevant predicates (43). Positive uses of gradable predicates typically require that the individual "stand out" in some way with respect to the relevant property

(43) **Crisp judgment contexts**

Context: I am 180 centimeters tall and you are 179 centimeters tall.

Jikó=ka=ì , ò̀̀njiví me=nì.  
 tall=GA=1SG NEG BASE=2SG.HON  
 'Yo soy más alto que usted.'  
 'I am taller than you.'

- Mixed conjoined comparatives are felicitous in contexts in which both of the objects being compared fall into either the positive or negative extension of the gradable predicate (44).

(44) **Entailment to positive degree**

Context: Juan is 6'8'' (2 m), Pablo is 7' (2m10) (i.e., they are both tall people/both fall in the positive extension of 'tall').

a. Jikó=ka Pablo , ò̀̀njiví Juan.  
 tall=GA Pablo NEG Juan

'Pablo es más alto que Juan.'  
 'Pablo is taller than Juan.' (OK even though Juan is tall)

b. Kuiti=ka Juan , ò̀̀njiví Pablo.  
 short=GA Juan NEG Pablo

'Juan es más bajo que Pablo.'  
 'Juan is shorter than Pablo.' (OK even though Juan is tall)

- This suggests that the second conjunct of the mixed conjoined comparatives don't entail that the subject instantiates the property to a positive degree, as we would expect if it were a positive vague predication: It is OK to say 'Juan is not [tall]' even though he is 6'8".
- Similarly, clauses with *ka/ga* marked predicates do not entail that the subject instantiates the property to a positive degree: It is OK to say 'Juan is short=*ka*' even though he is 6'8".
  - The evaluative reading is not obligatory (one where Pablo would have to be tall in order to say Pablo is taller than Juan). Pablo can be a short person and we can still say (45).

(45) Context: Juan is 3'9" (1m20), Pablo is 4'3" (1m30).

Jikó=**ka** Pablo , òònjiví Juan.

tall=GA Pablo NEG Juan

'Pablo es más alto que Juan.'

'Pablo is taller than Juan.' (OK even though Pablo is short)

- The idea that *ka/ga* contributes comparative semantics is further supported by its use in incomplete comparatives (Sheldon 1945)/context comparatives (Hohaus 2015): If we only have the clause with the comparative marker, and we do not have a second conjunct, the meaning in Mixtec is that of an incomplete/context comparative.

(46) Jikó=**ka** Pablo.

tall=GA Pablo

'Pablo es más alto.'

'Pablo is taller [than someone else in the context].'

- These incomplete comparatives are compatible with superlative translations, as demonstrated by the context in ((47)a), although they do not entail superlativity, as demonstrated by the context in ((47)b).
  - The context in ((47)c) demonstrates that property concepts combined with *ka* have comparative and not positive meanings.
- (47)
- a. Context 1: There is a group of tall people, all with different levels of tallness and Pablo is the tallest one. → (46) is acceptable.
  - b. Context 2: There are 5 people, all of different heights, in the middle range there are Chuchi and Pablo, neither one of which is the tallest in the group, though Pablo is a little taller than Chuchi. → (46) is acceptable when referring only to Pablo and Chuchi.
  - c. Context 3: Pablo is 190cm tall and Chuchi is 198cm. → (46) is unacceptable.

- As demonstrated by Deal and Hohaus (2019), the presence of the comparative morpheme alone does not mean that we are dealing with a degreeful language (i.e. languages that

have property concepts that have a degree argument). It is known that although the tests reported above have been successfully modeled in a degreeless system (Beck et al. 2009, Pearson 2010, Bochnak 2015, Bowler 2016, 2020, Hohaus 2018, Reisinger & Lo 2017), the existence of differential comparatives is agreed upon as a sufficient condition for a language to be degreeful (von Stechow 1984, Deal and Hohaus 2019).

(48) **Differential comparatives**

- a. Jikó Liya iin metro=**kà** , òònjiví Lupe.  
 tall Liya one meter=GA NEG Lupe  
 ‘Liya mide un metro más que Lupe.’  
 ‘Liya is one meter taller than Lupe.’  
 NOT: ‘Liya is one meter tall, not Lupe’; this does not entail that Liya is one meter tall.
- b. Jikó=**kà** Liya iin metro , òònjiví Lupe.  
 tall=GA Liya one meter NEG Lupe  
 ‘Liya mide un metro más que Lupe.’  
 ‘Liya is one meter taller than Lupe.’  
 NOT: ‘Liya is one meter tall, not Lupe’; this does not entail that Liya is one meter tall.

**Additional degree constructions in SSM**

- A number of other degree constructions are available in SSM, providing additional evidence that SSM is degreeful language.

(49) **Intensification**

- a. Kuà’á jikó Maria.  
 much tall Maria  
 ‘María es MUY alta.’  
 ‘Maria is VERY tall.’
- b. Jikó kuà’á Maria.  
 tall much Maria  
 ‘María es muy alta.’  
 ‘Maria is very tall.’
- c. Jikó ndívà’a Maria.  
 tall very Maria  
 ‘Maria is very tall.’



(50)

**Adjectival intensification**

- a. Ká'nò<sup>9</sup> ndívà'a Maria.  
big.SG very Maria  
'Maria es muy grande.'  
'Maria is very big.'
- b. ??Ká'nò kuà'á Maria.  
big.SG much Maria  
Intended: 'Maria is very big.'/'Maria es muy grande.'

(51)

**Measure phrases**

- a. Ìvì métrò jikó Maria.  
two meter tall Maria  
'María es alta dos metros.'  
'Maria is two meters tall.'
- b. Jikó Maria ìvì métrò.  
tall Maria two meter  
'María es alta dos metros.'  
'Maria is two meters tall.'
- c. \*Jikó ìvì métrò Maria.  
tall two meter Maria

(52)

**Degree questions**

- a. Ndixà (ví) jikó Maria?  
how ? tall Maria  
'¿Cuánto es alta María?'  
'How tall is Maria?'
- b. Najaa yusà koni Liya?  
how.much dough want.CONT Liya  
'¿Cuánta masa quiere Liya?'  
'How much dough does Liya want?'
- c. Najaa xoò koni Liya?  
how.much chicken want.CONT Liya  
'¿Cuántos pollos quiere Liya?'/ '¿Cuánto pollo quiere Liya?'  
'How many chickens/much chicken does Liya want?'

<sup>9</sup> These intensifiers can also be used to intensify eventive verbal predicates:

- (i) a. Ndá'yi kuà'á Leonardo.  
cry.CONT much Leonardo  
'Leonardo está llorando mucho.'/'Leonardo is crying a lot.' - "regular a lot" crying
- b. Ndá'yi ndívà'a Leonardo.  
cry.CONT very Leonardo  
'Leonardo está llorando mucho.'/'Leonardo is crying a lot.' - intense crying non stop

Summing up: we can assert that SSM is a degreeful language, but we need to expand the definition of conjoined comparatives as in:

- Conjoined comparatives do not correlate with degreelessness, contrary to the systems analyzed in Bochnak (2013, 2015), Bowler (2016, 2020) and Beck et al. (2009) given our expanded syntactic understanding of conjoined comparatives.

**5.1. Towards a working semantic analysis of SSM conjoined comparatives**

- In languages like English, gradable adjectives and adverbs contain a degree variable, which is an abstract variable of type d. A gradable predicate introduces a scale and the variable specifies the degree along the scale.

(53) John is taller than Mary.

(54)  $[[\text{tall}]] = \lambda d. \lambda x. \text{HEIGHT}(x) \geq d$

- In languages which lack degrees, gradable predicates cannot combine with arguments of type d, rather the gradable predicate will depend on the context (Klein 1980).

(55)  $[[\text{tall}]]^C = \lambda x. x \text{ counts as tall with respect to } C$

- Conjoined comparative assertions of “x is P, y is not P” partition the context such that the boundary between the positive and negative extensions of P falls between x and y. This entails that x is more P than y.
- The problem introduced by SSM is that we have been proven it to be a degreeful language with a degree variable (like English).

*Table 2: evidence that we are dealing with a degreeful language - typology*

	SSM	Washo (Bochnak 2015)	English
<b>Minimum standard</b>	yes	no	yes
<b>Crisp judgment contexts</b>	yes	no	yes
<b>Entailment to positive degree</b>	yes	no	yes
<b>Differential comparatives</b>	yes	no	yes

- We have this degreeful comparison within a conjoined comparative construction, with a negation.

- The assumption in the literature, based on the systems analyzed in Bochnak (2015), Bowler (2020), is that when a language relies on a conjoined comparison strategy then it lacks degrees, as in Washo, but this is not the case in SSM.
  - Languages with comparative morphology encode a strictly-greater-than ordering relation on measures, and this seems to be what is happening in SSM.
- ➔ In SSM it is not clear what the negation is doing if we have the comparative morpheme doing the ordering. The presence of both negation and comparative morphology seems redundant.

We are now working in trying to find answers to the following questions:  
 How does the semantics of negation play a role in this composition? What is its function?  
 How are these conjuncts able to compose in order to relate these two DPs and to put them on a gradable scale?

It is worth noting that SSM is not alone, as other understudied languages present the same problem (many varieties of Mixtec (all?) and Salish (Davis & Mellesmoen 2019)).

### 5.2. An additional semantic question to account for

In SSM mixed conjoined comparatives a problem arises with comparison with degree and with a quantified DP, neither one of them is possible.

(56) **Comparison with a degree**

a. *Mixed conjoined comparative*

\* Juan jikó=**ka**=rà , òònjiví ivì metro.  
 Juan tall=GA=3M NEG two meter  
 Intended: ‘Juan is taller than 2 meters.’  
 Intended: ‘Juan es más alto que 2 metros.’

b. *Mixed locative comparative*

\* Juan jikó=**ka**=rà nòò ivì metro.  
 Juan tall=GA=3HUM.M on two meter  
 Intended: ‘Juan is taller than 2 meters.’  
 Intended: ‘Juan es más alto que 2 metros.’  
 (This could be bad for categorical reasons; maybe prepositions can’t combine with degree-denoting expressions.)

c. *Comparative with an exceed verb*

Juan niyá’a o=rà ivì metro.  
 Juan exceed.COMP LNK=3M two meter  
 ‘Juan is taller than 2 meters.’  
 ‘Juan es más alto que 2 metros.’

(57) **Comparison with a quantified DP**a. *Mixed conjoined comparative*

\* Kà'vi-kua'a=kà=i , òònjiví òni libro.  
 read.COMP-many=GA=1SG NEG three book  
 Intended: 'Yo leí más de tres libros.'  
 Intended: 'I read more than three books.'

b. *Mixed locative comparative*

\* Kà'vi=kà=i , nòò òni libro.  
 read.COMP=GA=1SG on three book  
 Intended: 'Yo leí más de tres libros.'  
 Intended: 'I read more than three books.' (This could be bad for categorical reasons; maybe prepositions can't combine with degree-denoting expressions.)

c. *Comparative with an exceed verb*

Niyà'a o òni libro kà'v-i.  
 exceed.COMP LNK three book read.COMP-1SG  
 Intended: 'Yo leí más libros que tres.'  
 Intended: 'I read more than three books.'

Further work will be necessary to account for the data reported in 5.2.

**6. Conclusion and open ended questions to push this research agenda forward**

In this talk we have offered evidence that SSM has conjoined comparatives which include degrees and thus we have expanded the typological definition of conjoined comparatives to mixed conjoined comparatives.

Although progress has been made towards an understanding of an understudied kind of conjoined comparatives, some questions are still unanswered.

- What is the compositional semantics of mixed conjoined comparatives in SSM?
- Can we come up with a semantics that is able to account for other cases of mixed conjoined comparatives? E.g. Salish, Menominee, etc.?

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**Appendix**

- The *ka/ga* morpheme can express comparison with a number of different lexical categories, such as adjectives, verbs, and adverbs (plus the ones already listed such as differentials).

- (58) **Verbal comparatives**
- a. Ni-kixi=**kà** Juan , òònjìvì Maria.  
 COMP-sleep=GA Juan NEG Maria  
 ‘John slept more than Mary.’  
 ‘Juan durmió más que Maria.’
- b. Síka=**ka**=ì , òònjìvì mee=ní.  
 walk.CONT=GA=1SG NEG BASE=2SG.HON  
 ‘Yo camino más que usted.’  
 ‘I walk more than you.’
- (59) **Adverbial comparatives**
- Chuchi kana kono kama=**kà**=rà , òònjìvì  
 Chuchi go.CONT run.CONT fast=GA=3HUM.M NEG  
 Liya  
 Liya  
 ‘Chuchi corre más rápido que Liya.’  
 ‘Chuchi runs faster than Liya.’
- (60) **Attributive comparatives**
- Jákákó Liya iin leè jìkó=**kà** , òònjìvì Lupe.  
 give.birth.CONT Liya one baby tall=GA NEG Lupe  
 ‘Liya dió a luz un bebe más alto que Lupe.’  
 ‘Liya gave birth to a taller child than Lupe.’  
 a. External reading: Liya gave birth to a taller baby than Lupe did.  
 b. Internal reading: Liya gave birth to a baby taller than Lupe.

- **Locative comparatives**

Locative comparatives are a monoclausal and the standard of comparison (‘you’) is introduced by the locative *nòò*.

- (61) Yu’ù jìkó=**ka**=ì nòò mee=ní  
 1SG.IND tall=GA=1SG on BASE=2SG.HON  
 ‘Yo soy más alto que usted.’  
 ‘I am taller than you.’

We are certain that *nòò* is a locative morpheme because it is a preposition when it is not used in a comparative construction, and it is derived from a body part.

- (62) Tuti kanoó nòò mesa  
 paper be.located.CONT on table  
 ‘La hoja está encima de la mesa.’  
 ‘The paper is located on the top of the table.’

*Nòò* can only be used in a comparative sentences with property concept predicates such as ‘tall’ (61), ‘fat’ (63) or ‘old’ (64), but not with (eventive) verbal predicates like ‘eat’ (65), ‘cook’ (66), ‘run’ (67) or ‘write’ (68).

- (63) Chika’no=kà=i      nòò      me=ní.  
fat.COMP=GA=1SG      on      BASE=2SG.HON  
‘Yo soy más gordo que tú.’  
‘I am fatter than you.’
- (64) Kaa              yata=kà              Chuchi              nòò      Juan.  
be.CONT              old=GA              Chuchi              on      Juan  
‘Chuchi es mayor que Juan.’  
‘Chuchi is older than Juan.’
- (65) # Sìsi=kà=i              táko      nòò      me=ní.  
eat.COMP=GA=1SG      taco      on      BASE=2SG.HON  
‘I ate more tacos in front of you.’  
Intended: ‘I ate more tacos than you.’
- (66) # Nìchijó=kà=i              nduchì kusi              Juan      nòò      Chuchi.  
cook.COMP=GA=1SG      bean eat.CONT              Juan      on      Chuchi  
‘I cooked more beans for Juan in front of Chuchi.’  
Intended: ‘I cooked more beans for Juan than for Chuchi.’
- (67) # Kánàkónò=kà=i      nòò      yo’ó.  
run.CONT=GA=1SG      on      2SG.IND  
‘I am running more in front of you.’  
Intended: ‘I am running more than you.’
- (68) # Tiaa=kà=i              lètrá      nòò      yo’ó.  
write.POT=GA=1SG      letter      on      2SG.IND  
‘I write more letters in front of you.’  
Intended: ‘I write more letters than you.’

However, *nòò* can take a light-headed relative clause as its complement (69)-(70).

- (69) Tuti kanoó                      nòò      mesa      sèen=i                      koni.  
paper be.located.CONT              on      table      buy.COMP=1SG              yesterday  
‘La hoja está encima de la mesa que compré ayer.’  
‘The paper is located on the top of the table I bought yesterday.’
- (70) Tuti kanoó                      nòò      to-sèen=i                      koni.  
paper be.located.CONT              on      CFR:WOOD-buy.COMP=1SG              yesterday  
‘La hoja está encima de la (mesa) que compré ayer.’  
‘The paper is located on the top of the one (table) I bought yesterday.’

Thus, we can conclude that the preposition *nòò* and the comparative *nòò* present different properties despite being homophonous.

- **Particle comparatives**

To the best of our knowledge particle comparatives are present only in San Sebastián del Monte Mixtec. From its distribution among speakers in the town, it seems to be a fairly new addition, as older people do not use it, middle aged people use it only sometimes and it is most common among younger speakers. This is a monoclausal construction.

- (71) Yu'ù            jikó=**ka**=i            **ja**            mee=ni.  
 1SG.IND            tall.CONT=GA=1SG            than            BASE=2SG.HON  
 'Yo soy más alto que usted.'  
 'I am taller than you.'

To the best of our knowledge the particle *ja* does not occur in any other construction in the language, other than with the meaning of 'then' in a sentence where a subordinate clause is introduced, in which case older speakers use it as well as younger ones. However, in contrast to the original use of *ja* as 'then', there is no temporal order requirement between the target and the standard of comparison when *ja* is used to introduce the standard of comparison (Mantenuto 2020).

- (72) Kaja chino=yó      ndi      tiààn            ja      nindee=yó            iin  
 do.POT work=1PL.INC from      morning            then      rest.POT=1PL.INC      one  
 kivi.  
 day  
 'Vamos a seguir trabajando hasta la mañana, y luego descansamos un día.'  
 'We will continue working until morning and then we will rest for one day.'

### More information on the semantics of SSM conjoined comparatives from less comparatives

- The less comparatives are also conjoined in SSM; however, they do not include the *ka/ga* morpheme, rather they use the word for 'few/little' *tyáá*.

- (73) Jikó-tyáá      Pablo      ,      òònjìví      Liya.  
 tall-little      Pablo            NEG            Liya  
 'Pablo es menos alto que Liya.'  
 'Pablo is less tall than Liya.'

- Semantically, the SSM mixed conjoined comparatives with *tyáá* behave like explicit comparatives, in the sense of Kennedy (2007, 2011), but they can't co-occur with differential phrases.
  - They are felicitous in crisp judgment contexts, which would be unexpected if the clauses had vague predicates (74).

**(74) Crisp judgment contexts**

Context: Liya is 180 centimeters tall and Pablo is 179 centimeters tall.

Jikó-tyáá Pablo , òònjìvì Liya.  
tall-little Pablo NEG Liya

‘Pablo es menos alto que Liya.’

‘Pablo is less tall than Liya.’

- They are felicitous in contexts in which both of the objects being compared fall into either the positive or negative extension of the gradable predicate (75).

**(75) Entailment to positive degree**

Context: Pablo is 2 m, Liya is 2m10 (i.e., they are both tall people/both fall in the positive extension of “tall”).

Jikó-tyáá Pablo , òònjìvì Liya.  
tall-little Pablo NEG Liya

‘Pablo es menos alto que Liya.’

‘Pablo is less tall than Liya.’ (OK even though Pablo is tall)

**(76) Entailment to negative degree**

Context: Pablo is 150 cm, Liya is 155 cm (i.e., they are both short people/both fall in the negative extension of “tall”).

Jikó-tyáá Pablo , òònjìvì Liya.  
tall-little Pablo NEG Liya

‘Pablo es menos alto que Liya.’

‘Pablo is less tall than Liya.’ (OK even though Liya is short)

- Whenever we add *ka/ga* the meaning changes into a more comparative.

(77) Jikó-tyáá=kà Pablo , òònjìvì Liya.  
tall-little=GA Pablo NEG Liya

‘Pablo es un poco más alto que Liya.’

‘Pablo is a little taller than Liya.’

- Less comparatives cannot co-occur with differentials in SSM.

**(78) Differential comparatives**

\* Jikó Liya iin metro-tyáá , òònjìvì Lupe.  
tall Liya one meter-less NEG Lupe

Intended: ‘Liya is one meter taller than Lupe.’

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