Construction-dependent person hierarchies[1]

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Abstract

In sentences, the two entities that enjoy a special status are the *speaker* of the utterance containing the sentence, and the *hearer* of this utterance. One can refer overtly to the speaker and the hearer in a sentence – pronouns like *I* and *you* can serve as the subject of a sentence, for example. But not only subjects can make reference to the speaker and the hearer; both of them also play an important role in the semantics of *sentence mood* (declaratives, interrogatives, imperatives) and *evidentiality* (direct evidence, hearsay, inference). In this paper we investigate the effects of having first person and second person subjects in combination with different types of sentence mood and evidentiality.

1. First examples

An analysis with a prominent place for the speaker has a lot of explanatory power for the study of deixis (see Abraham's Preface, this volume). But also for the study of *sentence mood* (cf. Tanaka 2008) and *evidentiality* does such an analysis look promising. The reason is that the two phenomena are rather closely related to the utterance level in speech. At the level of the utterance it is important who speaker and hearer are, because with each new utterance the identity of speaker and hearer shifts. This is why the grammatical category of person plays an important role in both sentence mood and evidentiality.

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As an example, consider the following sentence from Shipibo-Konibo (Valenzuela 2003: 50)[2].

(1) *jakon baken-ti waste r-iki ainbo bi-ti*
good give.birth-INF herb DIR.EV-COP completely true
'The herb for easy births is really effective'

In this example there is an evidentiality marker *r-* coined the *direct evidence* marker, which means that the speaker has direct evidence for the proposition uttered. Therefore, the *information source* of the sentence is first person. The subject in (1), *jakon baken-te waste* 'herb for easy births' is neither first nor second person.

Next, consider the following example from Shipibo-Konibo in (2).

(2) *e-a r-iki Bawanixo-nko-ni-a*
1SG-ABS DIR.EV-COP Bawanixo-LOC-LIG-ABL
'I am from Bawanixo'

Here the information source is the speaker and the subject is first person. In such cases interaction effects may arise – as speakers refer to themselves with the first person – and in this paper we will look into these *person effects*. We will visualize these effects in the form of person *hierarchies*. The concept of hierarchies will be explained in section 2. In sections 3 to 5 several new person hierarchies will be posited. This leads to the question

2. Abbreviations used in this paper:

½	inclusive	IPFV	imperfective
1, 2, 3	first, second, third person	LIG	ligature
ABL	ablative	LOC	locative
ABS	absolutive	N	neuter
ACC	accusative	NEG	negative
CAUS	causative	NONFIRSTH	nonfirsthand evidential
CONJ	conjunct marker	OR	orientation marker
COP	copula	PART	particle
CNJV	conjunctive	PERF	perfective
CSM	change of state marker	POSS.REFL	possessive reflexive
DECL	declarative	PRS	prospective aspect
DIR.EV	direct evidential	PST	past
DISJ	disjunct marker	Q	question
FIRSTH	firsthand evidential	SG	singular
IMP	imperative	TOP	topic
INFER	inferential evidential	VIS	visual evidential
INF	infinitive		

how many person hierarchies there really are, which will be addressed in section 6. We will end this paper with a conclusion in section 7.

2. Person Hierarchies

One way to represent the effects of different parameters in a certain construction is by using a hierarchy. The most well-known person hierarchy is the Silverstein Hierarchy (Silverstein 1976), as seen in (3). The symbol ½ will represent the inclusive category, as described in section 2.1 below, in this paper.

(3) Silverstein Hierarchy
½ < 1,2 < 3

The hierarchy consists of four grammatical categories, *inclusive*, *first person*, *second person* and *third person* (third person can be split up into several categories – human, animal, inanimate, for example – but these are of no importance in this paper). First, in section 2.1 we will address the question why the inclusive serves as a grammatical category in its own right in the hierarchy in (3), and in all other hierarchies in this paper. Then, in section 2.2 we will provide a general introduction on hierarchies. Finally, in section 2.3 we will look at the Silverstein hierarchy in greater detail.

2.1. The inclusive

Silverstein included the inclusive category in his hierarchy. An example of an inclusive pronoun, which is referred to as a first person plural inclusive pronoun, is given in (4). In this Evenki sentence the subject comprises both the speaker and the hearer (Nedjalkov 1997). In (5) another pronoun – referred to as the first person plural exclusive pronoun – is used, and here the subject comprises the speaker but not the hearer.

(4) *Esi mit oron-mi e-get sokor-ro*
now ½ reindeer-POSS.REFL.SG NEG-½.IMP lose-PART
'Let us (inclusive) not lose our (inclusive) reindeer'

(5) *Bu oro-r-vor etejet-chere-v*
1PL reindeer-PL-POSS.REFL.PL guard-PRS-1PL
'We (exclusive) guarded our (exclusive) reindeer'

Daniel (2005) argues against the traditional view that the inclusive is a special instance of the first person plural. His argument is that there are

very few instances in which the inclusive pronoun is derived solely from a first-person singular pronoun. Therefore, Daniel argues for the inclusive as an additional, fourth person category. In contrast, the pronouns in (5), which are traditionally referred to as first person plural exclusive pronouns, can be seen as true representatives of the first person plural. As a consequence, the term 'first person plural exclusive' could be abolished in favor of the term 'first person plural'.

This leaves us with a grammatical category of person with four values: inclusive, first person, second person, and third person. No further values are needed to describe the person systems in the languages of the world (cf. Cysouw 2003).

2.2. How hierarchies manifest themselves

The hierarchy in (3) is an example of what has been called a *markedness* hierarchy. Haspelmath (2006), building on Greenberg's (1966) work, argues that it is frequency that drives such hierarchies. To the left in a hierarchy is the most frequent category, and to the right the least frequent category. He states four ways in which a hierarchy can manifest itself: *structural coding*, *facultative expression*, *inflectional differentiation*, and *text frequency*.

Structural coding means that the marking of a less frequent category cannot be shorter than the marking of a more frequent category. Ergative case marking in combination with the Silverstein Hierarchy in (3) is a good example of structural coding (to be more precise, ergative marking for reasons of *distinguishability*; see de Hoop & Malchukov (2008) and the papers in de Hoop & de Swart (2008) for an in-depth discussion). It is very common for the inclusive to function as a topic, and because topics are often agents, the inclusive is often an agent. Because of this, the inclusive does not require any additional case marking to signal the agent function. For first and second person it is less common to function as a topic/agent, and for third person even less so. The prediction then is that if a language has an overt ergativity marker for one of these categories, it should also have an overt ergativity marker for all categories to the right in the hierarchy. Crucially, it cannot have zero ergativity marking in the categories to the right, because zero marking is shorter than overt marking.

A classical example is Dyirbal (Dixon 1979); in this language third person nouns and pronouns carry an ergativity marker, but the other pronouns have zero marking. Thus, no category to the right of third person has zero marking, since there are no such categories. Therefore Dyirbal obeys the above prediction, as can be verified in (6).

(6) Ergativity marking in Dyirbal

Person category	½	*1*	*2*	*3*
Ergativity marking	-Ø	-Ø	-Ø	-ŋgu

The second way in which a hierarchy manifests itself, facultative expression, means that the marker of a less frequent category may only be dropped if the marker of a more frequent category may also be dropped. The relation with frequency is only indirect: More frequent categories tend to be more predictable, and predictable categories do not need to be expressed. A good example is pro-drop: Pronouns are very frequent and highly predictable, which is why they can be dropped in some languages, but not noun phrases with a common noun.

Inflectional differentiation stands for the phenomenon that a less frequent category may not have a richer paradigm of forms than a more frequent category. The idea behind this is that only for frequent categories individual forms may be stored separately. Therefore, only frequent categories have a rich irregular paradigm. An example is the verb *to be*, which has a rich, irregular paradigm in many languages.

Text frequency, finally, is a very obvious manifestation of frequency. Categories that are uttered more often in speech will also appear more often in texts.

2.3. Beyond Silverstein

As mentioned earlier, the Silverstein Hierarchy is the most well-known person hierarchy. Silverstein himself noted that the inclusive is more unmarked than first or second person. This is important as we will predict in section 6 that *½, 1, 2 < 3* does not exist as a hierarchy. Thus the inclusive should always behave differently from first and second person in the Silverstein Hierarchy.

But does this hierachy suffice for all attested person effects? Silverstein did not only look at ergative case-marking, but also at accusative case-marking. Interestingly, accusative case-marking follows the reversed pattern of ergative case-marking: A third person is the least likely to receive accusative case-marking, then second person and first person. The inclusive is the most likely person to be accusative case-marked, since it is very uncommon for the speaker and the hearer to act as the patient in some predicate together. This leads to a person hierarchy one could call the *Reversed Silverstein Hierarchy*.

(7) Reversed Silverstein Hierarchy
3 < 1,2 < ½

Still, not all person effects follow the Silverstein Hierarchy or the Reversed Silverstein Hierarchy. In the following sections we will look at other person hierarchies present in language.

3. Sentence mood

The three main sentence moods in language are the imperative, declarative, and interrogative mood. In this section we will look at the person effects for each of them.

3.1. Imperatives

A cross-linguistic investigation on imperatives and hortatives has been done by Van der Auwera, Dobrushina and Goussev (2004). An example of a prototypical imperative is given in (8a) and an example of a hortative is provided in (8b)

(8) a. *Stop hurting me!*
b. *Let's stop hurting each other!*

Some researchers see hortatives as non-second person imperatives, and indeed, imperatives and hortatives are very similar semantically. The meaning of both may be formulated as: *speaker expresses to hearer that person x should do y*, whereby x is the subject of the imperative/hortative, and y is the relevant predicate. Furthermore, in a number of languages the syntactic marking of hortatives and imperatives constitutes one paradigm, see Van der Auwera, Dobrushina and Goussev (2004) for references. One example of the connection between hortatives and imperatives is Dutch. In Dutch the hortative construction with the verb *laten* 'to let' is possible for third persons (9a), the inclusive (9b) and first persons (9c), but not for second persons (9d) where there is a special imperative construction (10).

(9) a. *Laten ze het zelf maar op-lossen!*
let.PL 3PL 3SG.N self PART PART-release
'They should solve it themselves!'

b. *Laten we het zelf maar op-lossen!*
let.PL **1PL** 3SG.N self PART PART-release
'Let's solve it ourselves!'

c. *Laat* ***ik*** *het zelf maar op-lossen!*
let.SG **1SG** 3SG.N self PART PART-release
'I should solve it myself!'

d. **Laat* ***je*** *het zelf maar op-lossen!*
let.SG **2SG** 3SG.N self PART PART-release

(10) *Los het zelf maar op!*
release 3SG.N self PART PART
'Solve it yourself!'

Assuming that imperatives and hortatives are part of one and the same concept, Van der Auwera, Dobrushina and Goussev constructed a person hierarchy for the structural coding of the imperative. Ignoring plurality, duality and the like, the hierarchy has the form shown in (11).

(11) Imperative Hierarchy
2 < ½,3 < 1

As second person is the most common person to be the (semantic) subject of a commanded predicate, second person features as the left-most category in the hierarchy. Indeed, second person is in many languages the only category that receives an unmarked imperative-hortative marking; in those an imperative-hortative meaning for the other persons is only allowed when using a marked, periphrastic construction. For the inclusive and third person sometimes a special imperative-hortative marking is available, but usually this marking is longer than the marking for second person, compare the Dutch marking in (9a–c) and (10). A dedicated imperative-hortative marking for first person is very uncommon.

3.2. Declaratives and interrogatives

Now that we have an Imperative Hierarchy, we may expect to find person hierarchies for other sentence moods. Western Apache (also known as Athabaskan) shows how person matters for the declarative mood (De Reuse 2003: 93). In this language it is inappropriate to have declaratives with a second person subject (12a). Instead, an inference evidentiality marker – see the following section – should be added to the sentence, as in (12b). Presumably, the same goes for an inclusive subject.

(12) a. **?Niɬ gozk'az*
with.2 3SG.N.PERF.be.cold

b. *Nił gozk'az ląą*
with.2 3SG.N.PERF.be.cold INFER
'You are cold'

The reason for the inappropriateness of (12a) is that it is impolite for a speaker to assert something about the hearer. Therefore it is unsure whether (12a) is fully ungrammatical, or simply impolite. Nevertheless, we see the same person effects in English: It is very uncommon to have a declarative with *you* as subject, or with *we* as subject in its inclusive meaning. This suggests a tentative Declarative hierarchy as in (13).

(13) Declarative Hierarchy
1,3 < ½,2

Parallel to the Declarative Hierarchy, an Interrogative Hierarchy may be observed. In English questions with a first person or the inclusive as subject are rather uncommon. This suggests that there is a hierarchy as in (14), with the second and third person as the left-most categories.

(14) Interrogative Hierarchy
2,3 < ½,1

3.4. Suggestions

Besides imperatives, declaratives and interrogatives there are other sentence moods to be discerned that have less obvious markings; commissives (*I promise you I'll come*), expressives (*What a day!*), and declarations (*I hereby resign as president*) are examples. Another instance of sentence mood is *suggestions*. In Georgian (Harris 1984) there is a special construction for expressing suggestions, in which the subject of the embedded clause may only be second person, as in (15), or inclusive.

(15) *rogora xar imaze rom ɣvino momiṭano?*
how 2.are 3SG.N.on that wine 2.bring.1SG.3SG.N.CNJV
'How about bringing me some wine!?'

Similar effects may be observed in English, where the auxiliary *might* can be used to express a suggestion to a second-person subject or an inclusive subject, but not to a first-person or a third-person subject, see (16) from Foolen and de Hoop (2009).

(16) a. *You might try to put the key into this slot*
b. *We might try to put the key into this slot*
c. *I might try to put the key into this slot*
d. *He might try to put the key into this slot*

From this we can conclude that second person and the inclusive are more common as subjects of a suggestion than first and third person. The subsequent Suggestion Hierarchy can be found in (17).

(17) Suggestion Hierarchy
½,2 < 1,3

4. Evidentiality

Evidentiality is the grammatical category that encodes the information source of the sentence. Aikhenvald (2004: 65) distinguishes six semantic types of evidentials, as seen in (18).

(18)

	Type	Source of information
I.	Visual	sight
II.	Sensory	hearing (often extended to smelling, tasting and feeling)
III.	Inference	inference based on visible evidence
IV.	Assumption	assumption based on general knowledge or logic
V.	Hearsay	third-party, non-specific (*John went away,* ***they say***)
VI.	Quotative	third-party, specific (*John went away,* ***he said***)

Person is an important category for evidentiality. The information on which any sentence is based always originates from some individual, and because evidentiality makes reference to this information, attention is drawn to the individual behind it. For evidentiality types I through IV the source of information is typically the speaker herself. For evidentiality types V and VI the source is typically not the speaker.

Besides person preferences for source, there are also person preferences for subject in evidentiality marking (*evidentials* for short). There is an important distinction between *internal state predicates* (e.g. *I'm hungry*) and *external state predicates* (e.g. *John went to the market*). External state predicates will be discussed first, as most predicates are of this type.

4.1. External state predicates

External state predicates are predicates that can be verified in an objective way. When such a predicate has an evidential, the subject's predicate is

preferably not a first person. In other words, it is uncommon to have a first person subject in a sentence with an evidential. The reason for this is simple: It is unnecessary for a speaker to dwell on the evidence for something she did herself. These observations also apply to the inclusive – Aikhenvald (2004: 217–218) found 'no significant differences' between the first person and the inclusive. The resulting hierarchy is the same as the Interrogative Hierarchy in (14).

(19) External State Hierarchy (=Interrogative Hierarchy)
2,3 < ½,1

The hierarchy correctly predicts a facultative expression effect: There are languages where null subjects may only occur in evidentials with a second or third person subject (Aikhenvald 2004: 236).

Yet, there is a potential problem: People very frequently talk about their own actions, but it is not desirable to mark a sentence containing a first person subject with an evidential. There are languages where evidentials do not occur with the first person at all, but in many languages that have evidentials, it is obligatory to have them in a sentence. Which evidentiality marking is used in such cases? It turns out that languages consider Visual evidentiality the least marked option. In Jarawara if a person got drunk the other night, he uses a marking called the *firsthand evidential* when he tells about it, as in (20). The firsthand evidential is used to mark Visual and Sensory evidentiality (Dixon 2003: 170).

(20) *o-hano-**hara*** *oke*
1SG-be.drunk-PST.FIRSTH 1SG
'I got drunk'

If a different evidential is used the sentence gains an additional meaning. In Jarawara, using the *non-firsthand* evidential in a similar sentence may signal that the speaker does not remember getting drunk, see (21). This non-firsthand evidential is used for marking Inference, Assumption, Hearsay and Quotative evidentiality in Jarawara.

(21) *o-hano-**hani*** *oke*
1SG-be.drunk-PST.NONFIRSTH 1SG
'Apparently, I got drunk'

Across languages it can be seen that the evidential used for Visual evidentiality is used for neutral cases like (20), and that other evidentials may

induce effects like the one in (21). Aikhenvald calls these meaning extensions *first person effects*. Other meaning extensions observed as first person effects are: new information, surprise, denial and the marking of unintentional, uncontrolled, non-volitional actions. As predicted, in almost all of the cases these first person effects pertain to evidentials that do not mark Visual evidentiality. Only when evidentiality marking is optional, first person effects may arise from the use of Visual evidentiality. In Qiang, for example, under normal circumstances a predicate with a first person subject will be expressed without an evidential (LaPolla 2003: 63), see (22).

(22) *qa tsə tu-χsu-ʐ-ja*
1SG water OR-boil-CAUS-CSM.1SG
'I brought the water to a boil'

If a speaker uses the visual evidential, an additional meaning is added to the sentence. The sentence in (23), for example, has the additional meaning that the action was unintended.

(23) *qa the: ta de-we-ʐ-**u**-a*
1SG hit him OR-exist-CAUS-VIS-1SG
'I hit him (by accident)'

The above data shows which type of evidentiality is preferred in the context of a first person subject. For normal, intentional actions a first person subject prefers to have no evidentiality marking at all, and if that is not possible in a language, Visual evidentiality marking is preferred over any other type of evidentiality marking. The two preferences can be seen in (24).

(24) Preference for evidentiality marking for first-person subjects
a. No evidential over overt evidential
b. Evidential for Visual evidentiality over other evidentials

Alternatively, one could say that the External State Hierarchy in (19) applies to both Visual and other types of evidentiality, but that it is less strong for Visual evidentiality.

4.2. Internal state predicates

Internal state predicates describe processes internal to a person, for example emotions, desires and pain. For such predicates the speaker *is* the preferred subject of an evidential. The marker for Sensory evidentiality is the

appropriate evidential for internal state predicates, as Sensory evidentiality covers feelings. The person effects for the subject of an internal state predicate are reflected in the hierarchy in (25).

(25) Internal State Hierarchy
½,1 < 2,3

The hierarchy may not come as a surprise, as a speaker can only feel her own feelings. It is virtually impossible to feel someone else's feelings and therefore the combination of internal state predicates and Sensory evidentiality does not occur. A language where the workings of the Internal State Hierarchy in (25) can be observed is Tariana (Aikhenvald 2003: 149). In Tariana the feelings of second and third person subjects may not be described with the Sensory evidentiality marking. Visual or Inferential evidentiality marking should be used instead.

5. Mood plus evidentiality: conjunct-disjunct systems

In some languages there is an interesting interaction between person and sentence mood called a *conjunct-disjunct system*. In such a system a first person subject in a declarative sentence is marked with a special *conjunct* marker, which is also used for interrogative sentences with a second person subject. A textbook example is the system in Awa Pit (Curnow 1997). In this language a declarative sentence with a first person subject has the same marker as interrogative sentences with a second person subject, as can be seen in (26a–c) and (27a–c).

(26) a. *na=na pala ku-mtu-s*
1SG=TOP plantain eat-IPFV-**CONJ**
'I am eating plantains'

b. *nu=na pala ku-mtu-y*
2SG=TOP plantain eat-IPFV-**DISJ**
'You are eating plantains'

c. *us=na atal ayna-mtu-y*
3SG=TOP chicken cook-IPFV-**DISJ**
'He/she is cooking chicken'

(27) a. *min=ta=ma ashap-tu-y?*
wh=ACC=Q annoy-IPFV-**DISJ**
'Whom am I annoying?'

b. *shi=ma ki-mtu-s?*
what=Q do-IPFV-**CONJ**
'What are you doing?'

c. *min=ta-s a-mtu-y?*
where=LOC-ABL come-IPFV-**DISJ**
'Where is he coming from?'

An overview of the verbal paradigm – adapted from Aikhenvald (2004: 124) – in languages with a conjunct-disjunct system is given in (28).

(28) Verbal paradigm of a conjunct-disjunct system

	1	2	3
Declarative	Conjunct	Disjunct	Disjunct
Interrogative	Disjunct	Conjunct	Disjunct

One analysis of conjunct-disjunct systems is that the conjunct marker marks whether the subject of a sentence can also verify the content of the sentence. In declaratives, it is the speaker who knows whether the information is true, and in interrogatives it is up to the hearer to comment on the truthfulness of the proposition.

Aikhenvald (2004: 127) states that conjunct-disjunct systems 'are not evidential in nature', but evidentiality marking and conjunct-disjunct marking are closely related. Creissels (2008), for example, shows the relatedness between conjunct-disjunct marking and Quotative evidentiality. Another example is that conjunct-disjunct systems can lead to the same first person effects that we saw for evidentiality marking in the previous section: meaning extensions involving new information, surprise, denial or the marking of unintentional, uncontrolled, non-volitional actions. An example of such a first person effect is given in the sentences in (29a–b), which are from the Tsafiki language (Dickinson 2000).

(29) a. *kala ta-yo-e*
money have-**CONJ**-DECL
'I have money'

b. *kala* *ta-i-e*
money have-**DISJ**-DECL
'I have money (– what a surprise)!'

The sentence in (29a) is uttered when a speaker wants to state that she has money. Here the sentence is marked with a conjunct marker in accordance with the information in (28). In (29b) the fact that the speaker has money comes as a surprise to her. This meaning extension involving surprise leads to a disjunct marker in this sentence.

Assuming that inclusives behave like first persons in a conjunct-disjunct declarative (since inclusives include the speaker – the content verifier), disjunct marking of subjects in a declarative sentence follows the Disjunct Declarative Hierarchy in (30). Second persons and third persons are commonly marked with a disjunct marker. First persons and inclusives are commonly not marked with a disjunct marker, and if they are they express additional meanings like new information, surprise, denial and the marking of unintentional, uncontrolled, non-volitional actions, as exemplified in (29b). This is what Aikhenvald (2004) has called first person effects.

(30) Disjunct Declarative Hierarchy (=Interrogative Hierarchy)
2,3 < ½,1

The Disjunct Declarative Hierarchy is the same as the Interrogative Hierarchy in (14). It may seem counterintuitive that disjunct marking on declaratives follows a hierarchy for interrogatives. However, what the Interrogative Hierarchy reflects is the inherent information the speaker has about a person. The speaker has no inherent knowledge of the actions of second and third persons, and therefore they feature more often in questions than first person. Similarly, second and third person are often marked with a disjunct marker, since a disjunct marker marks that the speaker has no inherent knowledge of their actions.

For disjunct marking in interrogatives the assumption for inclusives will be that they behave as second persons. As a consequence, disjunct marking for subjects in interrogatives follows the Disjunct Interrogative Hierarchy in (31), which is the same as the Declarative Hierarchy in (13). As a rule, the hearer knows more about herself than the speaker does, which is why the speaker refrains from making declarative statements

about the hearer, and why the speaker refrains from disjunct-marking the hearer in questions.

(31) Disjunct Interrogative Hierarchy (=Declarative Hierarchy)
1,3 < ½,2

6. Restricting the hierarchies

By now we have seen a number of person hierarchies. One hierarchy that has not been mentioned so far is the Gender Hierarchy, as seen in (32). Cysouw (2003), building on Corbett (1991), notes that gender is marked most commonly on third person forms and sometimes also on second person forms. Gender marking on first person forms is 'rather uncommon', and gender marking on inclusives is 'almost unattested'.

(32) Gender Hierarchy
3 < 2 < 1 < ½

Another potential place for a person hierarchy is politeness. Indeed, Croft (1990) notes a hierarchy *2 < 3 < 1* for politeness. It is, however, unclear what the status of the inclusive in this hierarchy is. The problem is that the inclusive is plural in number, and plural pronouns are often used as polite versions of their singular counterparts. It should not come as a surprise, therefore, that Cysouw (2005) notes that inclusive pronouns are often used as polite counterparts of singular first- or second-person pronouns. Not much has been said in the literature on the existence of true polite inclusive forms. One final hierarchy is the one we will call the Zero Hierachy, see (33). For many phenomena there are no person effects at all, and we will show the subsequent hierarchy for completeness' sake.

(33) Zero Hierarchy
½,1,2,3

This makes a total of nine person hierarchies. Are those the hierarchies one would predict? If we look at all the hierarchies we can form with four person categories, we find seventy-five possibilities, listed schematically in (34). Nine hierarchies attested out of a total seventy-five – that is a rather bad score. Is there a way to restrict the number of possible hierarchies?

(34) Possible person hierarchies, attested hierarchies are in gray

½<1<2<3	½<1<2,3	½<1,2<3	½,1<2<3	½,1<2,3	½<1,2,3	½,1,2<3	½,1,2,3
½<1<3<2		½<1,3<2	½,1<3<2			½,1,3<2	
½<2<1<3	½<2<1,3		½,2<1<3	½,2<1,3			
½<2<3<1		½<2,3<1	½,2<3<1			½,2,3<1	
½<3<1<2	½<3<1,2		½,3<1<2	½,3<1,2			
½<3<2<1			½,3<2<1				
1<½<2<3	1<½<2,3	1<½,2<3			1<½,2,3		
1<½<3<2		1<½,3<2					
1<2<½<3	1<2<½,3		1,2<½<3	1,2<½,3			
1<2<3<½		1<2,3<½	1,2<3<½			1,2,3<½	
1<3<½<2	1<3<½,2		1,3<½<2	1,3<½,2			
1<3<2<½			1,3<2<½				
2<½<1<3	2<½<1,3	2<½,1<3			2<½,1,3		
2<½<3<1		2<½,3<1					
2<1<½<3	2<1<½,3						
2<1<3<½		2<1,3<½					
2<3<½<1	2<3<½,1		2,3<½<1	2,3<½,1			
2<3<1<½			2,3<1<½				
3<½<1<2	3<½<1,2	3<½,1<2			3<½,1,2		
3<½<2<1		3<½,2<1					
3<1<½<2	3<1<½,2						
3<1<2<½		3<1,2<½					
3<2<½<1	3<2<½,1						
3<2<1<½							

An example of a person hierarchy that we would probably never find in language is in (35). In this hierarchy first and second person are both frequent categories for the concept at issue, while the inclusive is an infrequent category.

(35) unexpected person hierarchy
1,2 < 3 < ½

The reason that we would not expect such a hierarchy is that we see the inclusive as a combination of first and second person, so if something is common for first and second person it should also be common for the

inclusive. We can formalize this idea by breaking down the person categories into two parameters, *ego* and *tu*, following Silverstein 1976. The inclusive consists of both parameters, the first person only has the *ego* parameter, the second person only the *tu* parameter, and the third person has neither parameter. See (36) for an overview.

(36) Person broken down into *ego* and *tu* parameters

	ego	*tu*
½	√	√
1	√	
2		√
3		

We can now generate hierarchies by assigning values to the two parameters. Take for example the Imperative Hierachy in (15), repeated below.

(15) Imperative hierarchy
2 < ½,3 < 1

We can get this hierarchy by assigning a plus-value to the *tu* parameter, and a minus-value to the *ego*-parameter. This should be interpreted as follows: For imperatives a speaker is very uncommon as a subject (– for *ego*), and a hearer is very common (+ for *tu*). As a consequence the inclusive category will have both a minus-value (because of the *ego* parameter), and a plus-value (because of the *tu* parameter), which cancel each other out resulting in a value of zero. Likewise, first person has a minus-value, second person a plus-value, and third person a value of zero (third person will always have a value of zero). In (37) there is an overview of the values for each person category.

(37) Values for the person categories in the Imperative Hierarchy

	ego (–)	*tu* (+)	value
½	–	+	0
1	–		–
2		+	+
3			0

To get from the values in (37) to the hierarchy in (15) the following has to happen: Second person has the highest value (a plus) and becomes the leftmost category in the hierarchy; first person has the lowest value (a minus) and becomes the rightmost category in the hierarchy; inclusive and third person both have a value of zero and go into the middle of the hierarchy.

By using only five values (++, +, 0, –, – –) for the *ego* and *tu* values in this way seventeen hierarchies are generated (using more values will not yield more hierarchies). The seventeen hierarchies can be seen in (38).

(38) Possible person hierarchies restricted, attested hierarchies are in gray

Hierarchy	Name	*ego*	*tu*
½,1,2,3	Zero	0	0
½<1<2<3		++	+
½<1,2<3	Silverstein	+	+
½<2<1<3		+	++
½,1<2,3	Internal State	+	0
½,2<1,3	Suggestion	0	+
1<½<3<2		++	–
1<3<½<2		+	– –
1<½,3<2		+	–
1,3<½,2	Declarative	0	–
2<½<3<1		–	++
2<3<½<1		– –	+
2<½,3<1	Imperative	–	+
2,3<½,1	Interrogative	–	0
3<1<2<½		–	– –
3<2<1<½	Gender	– –	–
3<1,2<½	Reversed Silverstein	–	–

One thing to notice is that for most attested hierarchies the *ego* and *tu* parameters have only single signs as values. The only possible hierarchy with single sign values that is unattested is given in (39). It is the reverse of the Imperative Hierarchy in (15).

(39) Person hierarchy with + for *ego* and – for *tu*
1 < ½,3 < 2

Moreover, the only hierarchy that has a double sign in its value is the Gender Hierarchy (–– for *ego*). Apparently languages do not like to distinguish between relatively common (+) or uncommon (–) and extremely common (++) or extremely uncommon (––).

7. Conclusions

In this paper we have looked at the four person categories in language: first person (1), second person (2), third person (3) and the inclusive (½). A number of linguistic concepts (most prominently, sentence mood and evidentiality) experience so-called person effects, which means that for those concepts the person categories are not interchangeable. A classic example is the imperative, where the second person is the most common person category for the subject. These person effects can be described using hierarchies.

Person effects may differ from concept to concept, which is why we have found nine distinct person hierarchies in this paper. This shows that the well-known Silverstein Hierachy cannot account for all person effects in language. On the other hand, with seventy-five possible person hierarchies the question is whether there is a certain restriction on possible hierarchies that would explain why only nine are attested. By breaking down the person categoryies into an *ego* and a *tu* parameter and using these parameters as primitives we have restricted the number of possible hierarchies to seventeen.

Future research will show whether the attested hierarchies are indeed valid. Especially with respect to the inclusive very little cross-linguistic research has been done. Another point for future research is the cognitive status of person hierarchies: Are they hardwired into the language blueprint or are they due to extralinguistic factors? In principle this can be tested: For example, does a child overgenerate the imperative to the inclusive, and until which age? We hope that our paper will inspire researchers to perform such research.

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