COORDINATION OF UNLIKE GRAMMATICAL CASES (AND UNLIKE CATEGORIES)

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It is often claimed that conjuncts in coordinate structures must be alike in various ways, in particular, that they should have the same syntactic category and the same grammatical case, if any. This article aims to refute such claims. On the basis of data from Polish, Estonian, and other languages, it demonstrates that there is no universal requirement that conjuncts be alike. Any appearances of such a requirement result from the fact that each conjunct must satisfy all functional constraints on the coordinate structure. The article discusses ways of formalizing such distributive satisfaction of constraints within four major linguistic frameworks: lexical-functional grammar, categorial grammar, head-driven phrase structure grammar, and minimalism.*

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1. INTRODUCTION. Coordination is one of the most contentious phenomena of natural languages: there are ongoing disputes about its internal structure, its grammatical category, and its compositional semantics, with no dominant views on any of these aspects. It is especially controversial whether conjuncts in a coordinate structure must be the same in some way, and to what extent they may differ.

One long-standing view is that only constituents bearing the same grammatical category may be coordinated.[1] After Williams 1981:§2, this view is often referred to as the LAW OF THE COORDINATION OF LIKES (LCL). However, counterexamples to the LCL—or at least apparent counterexamples—abound. Perhaps the most frequently cited example of this kind is 1 (Sag et al. 1985:117, ex. 2b), involving coordination of a noun phrase *a Republican* and an adjectival phrase *proud of it*.

(1) Pat is [a Republican and proud of it].

In order to account for such counterexamples, some analyses weaken the notion of 'the same grammatical category' (e.g. Bayer 1996), and others reject the LCL altogether (e.g. Peterson 2004, Patejuk 2015:Ch. 4, Dalrymple 2017). The controversy continues: a recent defense of the LCL may be found in Bruening & Al Khalaf 2020, while Patejuk & Przepiórkowski 2021 offers a rebuttal.

A less discussed issue concerns grammatical cases: do all conjuncts have to bear the same morphological case (if any)? This question is related to the question of whether all conjuncts must bear the same category, but an answer to one does not imply an answer to the other. That is, regardless of whether the LCL holds, coordination of nominal constituents may or may not require the identity of cases.

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[1] For early statements to this effect, see for example Bloomfield 1933:195, Chomsky 1957:36, Tesnière 1959, 2015:327, Chomsky 1965:212, n. 9, Gleitman 1965:273, and Schachter 1977:90.

In a recent typologically rich article, Weisser (2020) looks at some examples of coordination of apparently different grammatical cases and convincingly argues that they in fact involve coordination of the same cases; see §2 for a brief summary. On this basis, he proposes the following crosslinguistic generalization.

(2) SYMMETRY OF CASE IN CONJUNCTION (SOCIC): Case is always evenly distributed amongst all of the conjuncts in nominal conjunction. (Weisser 2020:43).

While 2 is a little vague, the immediately following passage makes it clear that it is to be understood as the requirement of identity of cases in coordination: 'once we control for certain superficial morphological operations that can create asymmetries in form, such as allomorphy and suspended affixation, the conjuncts in nominal conjunction are always identical in morphological case'.

In §3, I present eight counterexamples to this universal claim. The first—acknowledged in Weisser 2020:72–73—concerns differential object marking, observed in a wide variety of languages, and the specific argument I offer is based on Estonian data. The other seven counterarguments are illustrated mainly with data from a single Slavic language, Polish, with some supporting data from Russian and other languages. They concern: partitive object marking, arguments displaying case indeterminacy, temporal adjuncts, possessive modifiers, secondary predicates, accusative numeral subjects, and coordination of different grammatical functions. I argue that in all eight instances case mismatches cannot be explained either via 'superficial morphological operations' of the kind envisaged in Weisser 2020, or via ellipsis (so-called conjunction reduction); that is, I argue that they are genuine counterexamples to SOCIC. Additionally, in §4, I point out that most of these environments also illustrate coordination of unlike categories, that is, that they also counterexemplify the LCL. In §5, I provide a relatively pretheoretical explanation of the coordination of unlike grammatical cases (and unlike categories), and I mention some predecessors in §6. Then, in §7 I consider how this explanation might be formalized in four major linguistic frameworks: lexical-functional grammar, categorial grammar, head-driven phrase structure grammar, and minimalism. Finally, §8 concludes the article.

2. APPARENT CASE MISMATCHES IN COORDINATION. Weisser (2020) discusses three phenomena that may create the impression of case mismatches in coordination. The first involves case clitics that may attach to the whole coordinate phrase, as in the following Estonian example (Hasselblatt 2008 apud Weisser 2020:46, ex. 5).[2]

(3) Estonian
Ta jook-sis [jõe ja puu]-ni.
3SG run-3SG river.GEN and tree-TERM
'He went to the river and the tree.'

Weisser (2020:46–47) argues that what looks like coordination of genitive and terminative is really coordination of two syntactically genitive constituents, *jõe* 'river' and *puu* 'tree', with the terminative case clitic *ni* attached to the whole coordinate structure, as

[2] Morphosyntactic abbreviations used in this article follow the Leipzig glossing rules (http://www.eva.mpg.de/lingua/resources/glossing-rules.php). Additionally, TERM in 3–4 stands for terminative case, COORD in 7 for a coordinator (conjunction), PAR in 8 and in Table 1 for the partitive case, IMPS in 33–35 and 51 for impersonal forms of verbs, and PREP in 100 for the so-called prepositional case in Russian.

the bracketing in 3 indicates. An argument for the genitive case of *puu* 'tree' is that an agreeing modifier of this noun must bear the genitive (Weisser 2020:46, ex. 6).[3]

(4) Estonian
Ta jook-sis [jõe ja suu-re puu]-ni.
3SG run-3SG river.GEN and big-GEN tree.GEN-TERM
'He went to the river and the big tree.'

The second mechanism results in superficially similar structures, with a case marker realized just once, on the periphery of the coordinate structure, but with some evidence that the marker is an affix rather than a phrasal clitic. For example, in the following Japanese example (Johannessen 1988 apud Weisser 2020:50, ex. 16), the case affix is followed by another element—a numeral-classifier complex—belonging to the second conjunct.

(5) Japanese
[Hon issatsu to pen-o nihon] kau.
book one and pen-OBJ two buy
'I will buy one book and two pens.'

Weisser (2020:§2.2) argues that such examples involve a superficial morphological mechanism of 'suspended affixation', on which—by analogy to RIGHT-NODE RAISING—an affix shared among all conjuncts is phonetically realized just once, on the last conjunct.

Finally, the third mechanism concerns familiar English examples such as the following (Weisser 2020:54, ex. 24a), as well as similar examples in other European languages with very impoverished case(like) systems restricted to some pronouns.

(6) [Him and I] are fighting.

Following Parrott (2009) and earlier work by Joseph Emonds, Weisser (2020) argues that different forms of pronouns are not a reflex of a case system, but are rather governed by specific allomorphy rules.[4] Hence, once again, what looks like coordination of different cases does not on closer inspection contradict the SOCIC principle in 2, which says that only the same grammatical cases may be coordinated.

3. GENUINE CASE MISMATCHES IN COORDINATION.

3.1. DIFFERENTIAL OBJECT MARKING. Kalin and Weisser (2019) consider languages displaying DIFFERENTIAL OBJECT MARKING (DOM), a phenomenon where objects that are high in topicality, animacy, or specificity bear a special case affix or are introduced by a preposition. They show that of eleven such languages they examine—Spanish, southern Italian, Romanian, Nepali, Hindi, Finnish, Turkish, Caucasian Urum, Hebrew, Amharic, and Tamil—nine (with the exception of Hindi and Turkish) allow for coordination of a differentially marked object with an unmarked object. An example from Tamil is 7 (Kalin & Weisser 2019:670, ex. 26); the marked conjunct is in the accusative.

(7) Tamil
Kumaar [kar-aiy-um paṇam-um] keeṭ-ṭ-an̲n̲.
Kumaar car-ACC-COORD money.NOM-COORD ask-PST-3SG.M
'Kumaar asked for the car and money.'

Kalin and Weisser (2019:672) note that such examples cannot be analyzed via so-called conjunction reduction—coordination of larger (verbal) constituents and subsequent

[3] The form *puu* is syncretic between nominative singular and genitive singular. Many thanks to Heiki-Jaan Kaalep for a discussion of Estonian data and the confirmation of the validity of Weisser's (2020) analysis of 3–4.

[4] See also Hudson 1995 for a similar conclusion.

ellipsis—because the coordination marker *-um* is used only for conjoining broadly nominal constituents, while verbal and clausal conjunction employs a different strategy. They also provide Spanish and Hebrew examples in which the coordinate structure is modified by an adjective meaning 'together' or a relative clause meaning 'who played together', that is, by elements that target plural constituents; such examples also seem to speak against conjunction reduction.[5] Moreover, Kalin and Weisser (2019) make sure that in all of their examples the differential marker is placed coordination-internally (e.g. *-aiy* in 7) and not near the outer edge of coordination, as in the Estonian and Japanese examples in the previous section, so that an analysis on which the marker applies to the whole coordinate structure is not immediately plausible.

Nevertheless, Weisser (2020:73) speculates that—given that some other instances of coordination of apparently different cases were successfully analyzed with recourse to superficial morphological processes (see §2 above)—'there may be morphological processes that are responsible for asymmetric patterns in the case of differential object marking as well, at least in some languages', but he provides no arguments supporting this speculation. Moreover, the next sentence appears to admit that unlike case coordination in DOM languages may be genuine: 'why is it that regular syntactic case assignment that is independent of referential properties obeys SOCIC [in 2] but differential object marking in many languages does not?'.

What would count as positive evidence that examples such as 7 really involve two different grammatical cases? Recall that, in the case of the Estonian example in 3, the deciding test demonstrating that the SAME cases were coordinated was agreement. While *puu-ni* in that example looked like a terminative form of *puu* 'tree' coordinated with the genitive form of *jõe* 'river', 4 shows that *puu* may be modified by a genitive adjective. This—given Estonian agreement facts—shows that *puu* is also a syntactically genitive form and that *-ni* should be analyzed as a phrasal marker, as the bracketing in 3–4 indicates. More generally, Weisser (2020:70) refers to Legate 2014 in the context of distinguishing between superficial morphological case and true syntactic case, and the primary test used in Legate 2014 to determine the syntactic case is also case agreement.

In most of the nine languages allowing for the coordination of differently marked objects this test in inapplicable: in the three Romance languages the marker is a preposition rather than a case affix, and most of the other languages have insufficiently rich morphology and agreement patterns. For example, only nouns and verbs inflect in Tamil (Lehmann 1989:11), so the form of an adjectival modifier cannot help in resolving the grammatical cases of nominal conjuncts in 7. Also, almost all of these nine languages—with the exception of Finnish—are examples of so-called ASYMMETRICAL DOM languages (de Hoop & Malchukov 2008), where overt case marking alternates with zero marking; compare the accusative affix *-aiy* in *kar-aiy* 'car-ACC' with the lack of affix in the nominative *paṇam* 'money.NOM' in 7. Hence, it could perhaps be claimed that in such languages the overt marker, regardless of its placement, somehow scopes over the whole coordinate structure, that is, that 'there may be morphological processes that are responsible for asymmetric patterns'.

However, such a claim is easy to refute in the case of so-called SYMMETRICAL DOM languages, such as the Finnic languages Finnish and Estonian.[6] For example, in Esto-

[5] See, however, Saab & Zdrojewski 2021 for convincing arguments that, in Spanish, differentially marked objects cannot be directly coordinated with unmarked objects and that any such apparent cases of asymmetric coordination involve coordination of larger—verbal—constituents and subsequent ellipsis.

[6] As argued in Iemmolo 2013, such languages differ from asymmetrical DOM languages in that differential marking typically targets polarity, quantification, and aspect, rather than topicality, animacy, and specificity.

nian, the difference is between what Estonian grammarians call TOTAL OBJECTS—bearing either genitive or nominative—and PARTIAL OBJECTS—bearing partitive. To the first approximation, total objects are quantitatively bound objects of affirmative telic verbs, and partial objects occur when some of these conditions are not met, for example, when the object is not quantitatively bound.[7] Not surprisingly, such partial and total objects may be coordinated, as in 8 (David Ogren, p.c.).

(8) Estonian
Ostsin korraga [tumedat leiba ja suure tordi].
bought.1SG simultaneously dark.PAR bread.PAR and big.GEN cake.GEN
'I simultaneously bought (some) dark bread and a/the big cake.'

As shown in Table 1, all partitive and genitive forms in 8 are marked with respect to the unmarked nominative forms. Moreover, adjective-noun agreement demonstrates beyond any doubt that the first conjunct bears the partitive case and the second bears the genitive. Finally, the presence of the adverb *korraga* 'simultaneously', which targets semantically plural constituents, speaks against an analysis in terms of ellipsis and coordination of larger constituents.[8]

	'dark.SG'	'bread.SG'	'big.SG'	'cake.SG'
NOM	tume	leib	suur	tort
GEN	tume-da	leiv-a	suur-e	tord-i
PAR	tume-dat	leib-a	suur-t	tort-i

TABLE 1. Nominative, genitive, and partitive forms of Estonian *tume leib* 'dark.SG bread.SG' and *suur tort* 'big.SG cake.SG'.

In summary, at least some DOM languages counterexemplify the claim that only the same cases may be coordinated. As already argued in Kalin & Weisser 2019, and confirmed by examples such as 8, an analysis of such coordinate structures in terms of conjunction reduction is unlikely to be successful. Moreover, in the case of morphologically rich symmetrical DOM languages, such as Estonian, it is possible to conclusively demonstrate that conjuncts bear different morphological cases.

This result immediately gives rise to two questions: (i) do all DOM languages allow for the mixed coordination of marked and unmarked objects? and, crucially, (ii) is coordination of unlike cases limited to DOM? The answer to the first question seems to be negative: as noted in Kalin & Weisser 2019:667–68, n. 4, of eleven DOM languages considered there, two seem to impose some parallelism constraints on coordinate structures—a general ban on mismatches of specificity in the case of Hindi and a more specific ban on case mismatches in Turkish. Moreover, Weisser (2020:71–72) claims that partitive objects cannot be conjoined with nonpartitive objects in Finnish, a language closely related to Estonian.[9] As all of these claims are made only in passing, they should be carefully verified and, if confirmed, it should be investigated why some DOM languages allow for the coordination of unlike cases and others apparently do not.[10]

[7] See for example Ogren 2015, 2018 on this topic, including a discussion of factors determining the genitive or nominative realization of total objects. Many thanks to David Ogren for his help with Estonian DOM data.

[8] This last argument assumes, together with the vast majority of the literature, that conjunction reduction does not affect the truth-conditional meaning. (Such semantic arguments against conjunction reduction were first discussed in Partee 1970.) There is an HPSG analysis that rejects this assumption; see §7.3 for discussion.

[9] The two crucial Finnish examples provided in Weisser 2020:72 are marked with '??' (rather than '*'), so the actual acceptability status of coordinations of partitive and nonpartitive objects in Finnish should be carefully ascertained (via questionnaires and/or corpus investigations)—a task outside the scope of the present article.

[10] Citing Kiparsky 2001 and others, Weisser (2020) states that partitive and nonpartitive objects in Finnish occupy different syntactic positions. This immediately explains the ungrammaticality of such coordinations,

In the following sections, I also provide a negative answer to the second—more important—question: that is, I show that unlike case coordination is NOT limited to DOM. In §§3.2–3.8, I discuss seven diverse instances of coordination of unlike cases in one sufficiently morphosyntactically rich language, Polish; only one of these (discussed in §3.2) is directly comparable to Estonian DOM. Given that—just as in Estonian—both nouns and adjectives inflect for case in Polish, it is easy to demonstrate that in each instance different grammatical cases are coordinated. This makes it possible to falsify both the claim that only the same cases may be coordinated and the suggestion that there is something special about DOM that allows for unlike case coordination.

3.2. PARTITIVE OBJECT MARKING. While Polish is not widely known as a DOM language, it displays a phenomenon remarkably similar to DOM in Finnic languages.[11]

In Polish, direct objects are typically in the accusative case in affirmative contexts and in the genitive case—so-called genitive of negation—in negative contexts.[12] In the case of some verbs, their normally accusative objects may also bear genitive morphological case in affirmative contexts, with an additional partitive meaning. Consider the following example (Przepiórkowski 1999:175, ex. 5.269).

(9) Polish
Dajcie [wina i całą świnię]!
give.IMP.2PL wine.GEN.SG.N and whole.ACC.SG.F pig.ACC.SG.F
'Serve (some) wine and a/the whole pig!'

Here, *całą świnię* 'whole pig' must be analyzed as accusative: the accusative form *świnię* is not syncretic with any other case form of the noun ŚWINIA 'pig', and the accusative form *całą* happens to be syncretic with the instrumental only; see Table 2. Similarly, when understood as singular, the genitive form *wina* 'wine' is not syncretic with any other case.[13]

	'good.SG.N'	'wine.SG.N'	'whole.SG.F'	'pig.SG.F'
NOM	dobr-e	win-o	cał-a	świni-a
ACC	dobr-e	win-o	cał-ą	świni-ę
GEN	dobr-ego	win-a	cał-ej	świni
DAT	dobr-emu	win-u	cał-ej	świni
INS	dobr-ym	win-em	cał-ą	świni-ą
LOC	dobr-ym	win-ie	cał-ej	świni
VOC	dobr-e	win-o	cał-a	świni-o

TABLE 2. Case paradigms of Polish *dobre wino* 'good.SG.N wine.SG.N' and *cała świnia* 'whole.SG.F pig.SG.F'.

In order to try to defend the 'same case in coordination' generalization in 2, one would have to claim that *-a* in *wina* is an allomorph of *-o* in the accusative form *wino*.

given considerations in §5 below. More generally, this also suggests a possible explanation of the purported difference in coordination possibilities in different DOM languages: it could be that marked and unmarked objects occupy different syntactic positions in those languages that do not allow for mixed coordination, such as (hypothetically) Finnish, while in languages such as Estonian they occupy the same syntactic position. This difference, of course, needs to be explained itself, but—in minimalist terms—it may boil down to different lexical properties of verbal and functional heads in the two classes of languages.

[11] In fact, Iemmolo 2013 argues that symmetrical DOM is typical of the 'Circum-Baltic' area, comprising not only Finnic languages, but also at least some Baltic and some Slavic languages, including Polish. Czardybon 2017:§5.3 also discusses Polish partitive objects under the rubric of DOM. Nevertheless, relevant case alternations seem to be lexically and constructionally much more restricted in Polish than in Finnic languages, so it remains to be seen whether the extension of the term DOM to Polish is sufficiently justified.

[12] This is an oversimplification: if passivization is taken as the primary test for direct objecthood, then some verbs must be analyzed as taking instrumental, genitive, or even dative direct objects, and not all accusative arguments are direct objects; see for example Przepiórkowski 1999:§5.1.1 and references therein.

[13] But it is syncretic with the plural nominative and accusative.

But, applying Weisser's (2020) own test, this is untenable, as *wina* in this position may be modified by unambiguously genitive adjectives, for example *dobrego* 'good'.[14]

(10) Dajcie [dobrego wina i całą
give.IMP.2PL good.GEN.SG.N wine.GEN.SG.N and whole.ACC.SG.F
świnię]!
pig.ACC.SG.F
'Serve (some) good wine and a/the whole pig!'

Examples such as 9–10 are not perceived as marginal or marked in any way, they may be constructed with a number of verbs allowing for partitive objects, and the order and number of conjuncts does not matter. In particular, either the accusative or the genitive may occur as the middle conjunct, surrounded by unlike case conjuncts.

(11) Dajcie [tę kuropatwę, dobrego
give.IMP.2PL this.ACC.SG.F partridge.ACC.SG.F good.GEN.SG.N
wina, i całą świnię]!
wine.GEN.SG.N and whole.ACC.SG.F pig.ACC.SG.F
'Serve the partridge, (some) good wine, and a/the whole pig!'

(12) Dajcie [dobrego wina, całą świnię,
give.IMP.2PL good.GEN.SG.N wine.GEN.SG.N whole.ACC.SG.F pig.ACC.SG.F
i miodu pitnego]!
and honey.GEN.SG.M potable.GEN.SG.M
'Serve (some) good wine, a/the whole pig, and (some) mead!'

A conjunction reduction analysis is also not likely, given the possibility of inserting adverbs such as JEDNOCZEŚNIE 'simultaneously' between the verb and the coordinate object.

(13) Dajcie jednocześnie [wina i całą
give.IMP.2PL simultaneously wine.GEN.SG.N and whole.ACC.SG.F
świnię]!
pig.ACC.SG.F
'Serve (some) wine and a/the whole pig at the same time!'

The hypothetical input to conjunction reduction is marginal at best, and, to the extent it is acceptable at all, the first *jednocześnie* 'simultaneously' seems to refer to cotemporality with some other—contextually given—event, rather than the pig-serving event.

(14) ?[Dajcie jednocześnie wina i dajcie
give.IMP.2PL simultaneously wine.GEN.SG.N and give.IMP.2PL
jednocześnie całą świnię]!
simultaneously whole.ACC.SG.F pig.ACC.SG.F

In summary, there does not seem to be an analysis available that could compete with the treatment of such examples as involving direct coordination of unlike cases.

3.3. ARGUMENT CASE INDETERMINACY. In languages such as Polish and Russian, some predicates allow for some case indeterminacy in their arguments. For example, some verbs require that their objects be either accusative or genitive, without any change of meaning, unlike in the partitive case discussed in the previous subsection. This is the case with the Russian verb PROŽDAT' 'wait for'. As the following example (Levy 2001 apud

[14] Modification by the form *dobre* is also possible here, but only because both *dobre* and the form *wina* have accusative PLURAL interpretations as well. That is, replacing *dobrego* with *dobre* in 10 results in the unambiguous nonpartitive accusative plural interpretation of *dobre wina* 'good wines'.

Dalrymple et al. 2009:51, ex. 51) shows, the object of this verb may be a coordinate structure with one conjunct in the accusative, and the other in the genitive.

(15) Russian
Včera ves' den' on prožd**al** [svoju podrugu
yesterday all day he.NOM expected.3SG.M self's.ACC girlfriend.ACC
Irinu i zvonka ot svoego brata Grigorija].
Irina.ACC and call.GEN from self's brother Grigory
'Yesterday he waited all day for his girlfriend Irina and for a call from his brother Grigory.'

The adjectival possessive reflexive pronoun *svoju* 'self's' agreeing with the appositive *podrugu Irinu* 'girlfriend Irina' is in the accusative case, and the genitive head of the second conjunct, *zvonka* 'call', may be modified by unambiguously genitive adjectives, so 15 illustrates genuine unlike case coordination.

This phenomenon does not just occur in the verbal domain. For example, in the case of the Polish noun HANDLARZ 'trader, dealer', the commodity argument may be expressed either by the genitive or by the instrumental (see 16), so it may be expressed by the coordination of unlike cases, as in the attested 17 from the National Corpus of Polish (Przepiórkowski et al. 2011, Przepiórkowski et al. 2012; http://nkjp.pl/).

(16) Polish
handlarz {narkotyków/narkotykami / broni/bronią}
dealer narcotics.GEN/INS weaponry.GEN/INS
'{drug/arms} dealer'

(17) Policjanci … rozpracowują grupę handlarzy [narkotyków i
policemen investigate group dealers narcotics.GEN and
bronią].
weaponry.INS
'Police officers … are investigating a group of drug and arms dealers.'

Again, the relevant nouns may be modified by agreeing adjectives, demonstrating beyond doubt that these forms truly are morphosyntactically genitive and instrumental, as in 18.

(18) … grupę handlarzy [twardych narkotyków i
group dealers hard.GEN.PL.M narcotics.GEN.PL.M and
bronią palną].
weaponry.INS.SG.F fiery.INS.SG.F
' … a group of hard drugs and firearms dealers.'

An attempt to replace the genitive form *twardych* 'hard' with the instrumental *twardymi*, or the instrumental *palną* 'fiery' with the genitive *palnej*, results in clear unacceptability.

Note also that 17 cannot be explained via conjunction reduction, as it has a meaning that the hypothetical input to ellipsis in 19 lacks. Namely, 17—but not 19—may refer to dealers who each trade in both drugs and arms.

(19) … grupę [handlarzy narkotyków i handlarzy bronią].
group dealers narcotics.GEN and dealers weaponry.INS
' … a group of drug dealers and arms dealers.'

Example 17 is cited—together with another corpus example of unlike case coordination in the same argument position of HANDLARZ—in the online valency dictionary *Walenty* (Przepiórkowski et al. 2014, Przepiórkowski et al. 2017; http://walenty.ipipan.waw.pl/) and is classified by the lexicographers as 'good' (acceptable), as opposed to 'doubtful' or

'bad' (unacceptable), the other two classifiers occasionally used to mark corpus examples in this dictionary. Nevertheless, some native speakers consider examples such as 17—and, even more so, 18—as somewhat marginal, perhaps due to some stylistic preference for parallelism in coordination when both—parallel and divergent—structures are available and synonymous. The other six instances of unlike case coordination in Polish, discussed in §3.2 and §§3.4–3.8, are uniformly judged as fully acceptable.

3.4. TEMPORAL ADJUNCTS. In English, various kinds of temporal intervals are introduced by various prepositions, for example, *at two*, *on Friday*, *in April*, or they may be bare noun phrases (NPs), such as *next winter*. Similarly, temporal adjuncts in Polish may be introduced by different prepositions, for example, *o drugiej* 'at two.LOC', *w piątek* 'on Friday.ACC', *w kwietniu* 'in April.LOC', or they may be bare NPs bearing different cases, such as *wieczorem* '(in the) evening.INS' or *tej zimy* 'this.GEN winter.GEN'. Such bare NPs bearing different cases may be coordinated, as in the following example (Przepiórkowski 1999:175, ex. 5.270).

(20) Przyjedzie [albo późnym wieczorem, albo następnej
come.FUT.3SG or late.INS.SG.M evening.INS.SG.M or next.GEN.SG.F
zimy].
winter.GEN.SG.F
'(S)he will come either late in the evening, or next winter.'

Traditional grammars sometimes treat temporal uses of nouns such as *wieczorem* '(in the) evening' as adverbs, but it is clear that they are nouns, with syntactically active case, forming noun phrases rather than adverbial phrases. This is illustrated in 20 by the fact that such nouns are modified by adjectives that must agree with them in case, as well as in number and gender. While the lexical material that may appear in such bare NP temporal phrases is limited, it is clear that these are full-fledged noun phrases, allowing for recursive modification, coordination within modifiers, and so on, as in 21.

(21) Przyjedzie [późnym albo nawet bardzo późnym]
come.FUT.3SG late.INS.SG.N or even very late.INS.SG.N
popołudniem.
afternoon.INS.SG.N
'(S)he will come late or even very late in the afternoon.'

And, again, an elliptical analysis is not promising, in view of the acceptability of sentences such as following.

(22) Jutrzejsza burza przyniesie więcej śniegu niż spadło łącznie
tomorrow.NOM storm.NOM bring.FUT more snow than fell jointly
[wieczorem i poprzedniej zimy].
evening.INS and previous.GEN winter.GEN
'Tomorrow's storm will bring more snow than jointly fell in the evening and last winter.'

The adverb *łącznie* 'jointly' modifies the whole coordinate structure rather than each conjunct separately. That is, the meaning of 22 can at best marginally, if at all, be expressed by the hypothetical input to ellipsis in 23.

(23) ? … więcej śniegu niż [spadło łącznie wieczorem i spadło łącznie
more snow than fell jointly evening.INS and fell jointly
poprzedniej zimy].
previous.GEN winter.GEN

Hence, temporal adjunction is yet another place where genuine coordination of unlike cases may be observed in Polish.

3.5. POSSESSIVE MODIFIERS. This and the following two subsections discuss unlike case coordination of nominal constituents in the broader sense of the term NOMINAL, referring not only to nouns, but also to adjectives and numerals.

In Polish, the exponents of the possessive function are noun phrases in the genitive, as well as so-called possessive pronouns—morphosyntactically, adjectives[15]—that agree with the modified head in case, number, and gender. These two options are illustrated by the following nominative phrases.

(24) a. ręce Zofii
hands.NOM.PL.F Zofia.GEN.SG.F
'Zofia's hands'
b. moje ręce
my.NOM.PL.F hands.NOM.PL.F
'my hands'

As may be expected, such genitive NPs and agreeing possessive pronouns may be coordinated; the following attested examples—abridged in a way that does not affect the argument—come from the National Corpus of Polish.

(25) Ręce [moje i Zofii] … złączyły się … na psich
hands.NOM.PL.F my.NOM.PL.F and Zofia.GEN.SG joined self on dog's
kudłach …
fur
'My and Zofia's hands met on the dog's shaggy fur.'

(26) Proszę o poparcie poprawki … , która jest
ask.1SG for support.ACC amendment.GEN.SG.F which.NOM.SG.F is
poprawką wspólną [pana senatora
amendment.INS.SG.F joint.INS.SG.F Mister.GEN.SG.M senator.GEN.SG.M
Kruszewskiego i moją] …
Kruszewski.GEN.SG.M and my.INS.SG.F
'Please support the amendment … which is a joint amendment of Senator Kruszewski's and mine.'

The semantics of these two examples is at odds with a conjunction reduction analysis. In the case of 25, the possible input to ellipsis given in 27 would mean that my hands met and Zofia's hands met separately; that is, such a hypothetical input would not have the conspicuous meaning of 25, on which hands of two people met.

(27) [Ręce moje złączyły się na psich kudłach i
hands.NOM.PL.F my.NOM.PL.F joined self on dog's fur and
ręce Zofii złączyły się na psich kudłach] …
hands.NOM.PL.F Zofia.GEN.SG joined self on dog's fur
'My hands met on the dog's shaggy fur and Zofia's hands met on the dog's shaggy fur.'

Similarly, the hypothetical input to a conjunction reduction analysis of 26, presented in 28, is not acceptable in Polish, given the semantics of the adjective WSPÓLNY 'joint'.

[15] Such first- and second-person possessive pronouns are also uniformly analyzed as adjectives in contemporary part-of-speech classifications and grammars of Polish; see for example Saloni 1974:5, Laskowski 1998:62, Wróbel 2001:124–28, and Saloni & Świdziński 2007:93.

(28) ?* … która jest [poprawką wspólną
which.NOM.SG.F is amendment.INS.SG.F joint.INS.SG.F
pana senatora Kruszewskiego i
Mister.GEN.SG.M senator.GEN.SG.M Kruszewski.GEN.SG.M and
poprawką wspólną moją] …
amendment.INS.SG.F joint.INS.SG.F my.INS.SG.F

Also, as in previous cases, the rich morphosyntax makes it clear that such possessive coordinations involve a genitive NP and a possessive pronoun agreeing with the head: nominative in 25 and instrumental in 26. Thus, possessive constructions constitute another environment that licenses unlike case coordination. Moreover, given that possessive pronouns are morphosyntactically adjectives, examples 25–26 also involve unlike category coordination, violating the LCL.

3.6. SECONDARY PREDICATES. In Polish, certain secondary predicates—adjectives agreeing in case with the NP they predicate of—may be coordinated with adjuncts, as in the following attested example.

(29) Wracamy do domu [późno i zmęczeni].[16]
return.1PL to home late.ADV and tired.NOM.PL.M
'We return home late and tired.'

This is an example of unlike category coordination: *późno* 'late' is an adverb, and *zmęczeni* 'tired' is a deverbal adjective predicating of the *pro*-dropped first-person plural masculine subject in the nominative.[17] As we saw in §3.4, temporal adjuncts may be bare NPs in Polish, and the adverb *późno* 'late' in 29 may be replaced with such an NP.

(30) Wracamy do domu [późnym wieczorem i
return.1PL to home late.ADJ.INS.SG.M evening.INS.SG.M and
zmęczeni].
tired.NOM.PL.M
'We return home late in the evening and tired.'

The NP *późnym wieczorem* 'late evening' is uncontroversially instrumental, while the adjective *zmęczeni* 'tired' is unambiguously nominative (and plural masculine), so it is clear that different cases—and categories—are coordinated in 30. It is also easy to construct examples that show the implausibility of conjunction reduction, such as 31.

(31) Wracamy do domu na przemian [a to [późnym wieczorem
return.1PL to home alternately and late.ADJ.INS.SG.M evening.INS.SG.M
i zmęczeni], a to [wczesnym popołudniem i
and tired.NOM.PL.M and early.ADJ.INS.SG.N afternoon.INS.SG.N and
rześcy]].
fresh.NOM.PL.M
'We return home alternately late in the evening and tired, or in the early afternoon and fresh.'

Here, the expression *na przemian* 'alternately' refers to the top level of nested coordination, introduced by the discontinuous conjunction *a to … , a to …* 'both; at one point … , and at another … '. That is, the alternation is between two states, each expressed by a co-

[16] https://pitbike24.pl/pitdadson-czyli-tata-syn-i-pit-bike-w-akcji/

[17] This is NOT unlike category coordination on the assumption—which I do not share—that adverbs and adjectives are the same category. However, the adverb in 29 may be replaced with a prepositional phrase (e.g. *w nocy* 'at night'), resulting in uncontroversial unlike category coordination. See Patejuk & Przepiórkowski 2021:§2.5 for similar examples in English.

ordination of unlike cases: (i) late in the evening and tired and (ii) early in the afternoon and fresh. This means that a hypothetical input to conjunction reduction would have to be a coordination of four clauses, the first shown in 32. This clause is not only semantically incoherent, as it contains *na przemian* 'alternately' which lacks a target, but it is also ungrammatical, as it contains just one part of the discontinuous conjunction *a to … , a to …* .

(32) *Wracamy do domu na przemian a to późnym wieczorem.
return.1PL to home alternately and late.ADJ.INS.SG.M evening.INS.SG.M

It is not just temporal adjuncts that may be coordinated with secondary predicates. The attested example 33 involves a coordination of a secondary predicate and the quantificational manner adjunct *hurtem* 'wholesale'.

(33) Myszy kupuje się [żywe i hurtem].[18]
mice.ACC.PL.F buy.IMPS alive.ACC.PL.F and wholesale.INS.SG.M
'One buys mice alive and wholesale.'

In this impersonal construction, *myszy* 'mice' is the direct object in the accusative, so the predicative adjective *żywe* 'alive'—coordinated with the instrumental noun *hurtem*—is also in the accusative.[19] One way of supporting the claim that 33 involves direct coordination is to topicalize it, as in 34.[20]

(34) [Żywe i hurtem] to kupuje się szczury, a
alive.ACC.PL.M and wholesale.INS.SG.M TOP buy.IMPS rats.ACC.PL.M and
nie myszy.
NEG mice.ACC.PL.F
'As for alive and wholesale, one buys rats like that, not mice.'

It is less immediately clear that *hurtem* 'wholesale' is a noun in the instrumental case, as opposed to an originally nominal form fossilized into a contemporary adverb. The possibilities of modifying *hurtem* 'wholesale' are very limited, but they exist.

(35) Szczurów wcale nie kupuje się [ani żywych, ani
rats.GEN.PL.M at.all NEG buy.IMPS neither alive.GEN.PL.M neither
żadnym pieprzonym hurtem]!
none.INS.SG.M fucking.INS.SG.M wholesale.INS.SG.M
'One does not buy rats either alive or fucking wholesale!'

In 35—a possible angry reply to 34—the emphatic adjectives *żadnym* 'none' and *pieprzonym* 'fucking' must agree in case (and number and gender) with *hurtem* 'wholesale', and no other forms of these adjectives are possible here, which shows that *hurtem* is a noun bearing the syntactically active instrumental case. Note that the negation in 35 requires the change of case of the direct object from the accusative *szczury* 'rats' in 34 to the genitive *szczurów* in 35, which in turn necessitates the genitive form of the agreeing predicative adjective, *żywych* 'alive', so in this case an instrumental adjunct is coordinated with a secondary predicate in the genitive.

In summary, adjectival secondary predicates bearing various cases may be coordinated with some bare NP adjuncts; the examples in this section involved secondary predicates in the nominative, accusative, and genitive, and temporal and manner ad-

[18] From the *Polityka* weekly (issue 3319 of 30 June 2021, p. 102), in an article about the feeding of animals in Polish zoos.

[19] While both feminine plural forms *myszy* 'mice' and *żywe* 'alive' are multiply syncretic, the claim that they bear the accusative case in 33 can be substantiated by replacing these plural feminine forms with human masculine or singular forms, which are not syncretic this way.

[20] In 34, the multifunctional *to* acts as a marker of the preceding topic.

juncts in the instrumental. All of these examples illustrate not only coordination of unlike cases, but also coordination of unlike categories.

3.7. ACCUSATIVE NUMERAL SUBJECTS. Arguably, numeral phrases (NumPs) in Polish are headed by the numeral, not the noun, and—unlike ordinary nominal subjects in the nominative case—they bear the accusative case (with the embedded NP in the genitive) when they occur in the subject position. (I present some of the well-known arguments for both claims below.) If so, examples such as the following (from the National Corpus of Polish), where the subject is a coordinate structure with a nominative NP conjunct and an accusative NumP conjunct, illustrate yet another instance of unlike case coordination.

(36) [Ja i trzech innych] nosimy ją w
NOM.SG and three.ACC.PL.M others.GEN.PL.M carry.1PL she.ACC in
lektyce …
litter
'I and three others are carrying her in a litter … '

(37) … do pokoju wpadli [lekarz i kilka
into room burst.3PL.M doctor.NOM.SG.M and several.ACC.PL.F
pielęgniarek].
nurses.GEN.PL.F
' … into the room burst a doctor and several nurses.'

The nominative case of the nominal conjuncts is uncontroversial. Both *ja* 'I' in 36 and *lekarz* 'doctor' in 37 are unambiguously nominative—these forms are not syncretic with any other cases. Also, both may be modified by nominative adjectives in these examples: for example, *ja* 'I' in 36 may be replaced by *ja sam* 'I.NOM alone.NOM', and *lekarz* 'doctor' in 37 may be replaced by *wysoki lekarz* 'tall.NOM doctor.NOM'.

It is also widely accepted that numeral phrases are indeed headed by the numeral—a distinct syntactic category in Polish[21]—and not the noun. I cannot do full justice to the extremely complex behavior of Polish numerals (see for example Witkoś et al. 2018 on Polish and Franks 1995:Chs. 4–5 on Slavic in general), but one argument is this. Consider the numeral phrase in 37: *kilka pielęgniarek* 'several nurses'. The noun *pielęgniarek* is in the genitive. (The accusative plural form is *pielęgniarki*.) It is also in the genitive when the numeral phrase occurs in an accusative position, as in 38, and when it occurs in a genitive position, as in 39.

(38) Widzę kilka pielęgniarek.
see.1SG several.ACC.PL.F nurses.GEN.PL.F
'I see several nurses.'

(39) Nie widzę kilku pielęgniarek.
NEG see.1SG several.GEN.PL.F nurses.GEN.PL.F
'I don't see several nurses.'

What varies with the case of the syntactic position is the form of the numeral: accusative *kilka* in 38 and genitive *kilku* in 39. That is, it is the numeral, not the noun, that bears the morphosyntactic features of the whole phrase. Hence—according to the ro-

[21] Cardinal numerals are a separate syntactic category in all major part-of-speech classifications and grammars of Polish (see n. 15)—not because of their semantics, but because of their distinct morphological and syntactic behavior. In particular, numerals inflect for case and gender but have lexically fixed plural number (unlike nouns, which inflect for case and number and have a specific gender, and unlike adjectives, which inflect for all three categories), and they display certain quirky agreement patterns, including 'default agreement', mentioned in n. 29 below. The indefinite numeral KILKA 'several' in the following examples is a prototypical numeral in this sense.

bust 'morphosyntactic locus' criterion for headedness (Zwicky 1985, Hudson 1987)—numeral phrases are indeed headed by numerals.

What is somewhat controversial is the case value of numeral subjects.[22] One—minority—view is that, in the subject position, masculine numeral phrases (as in 36) are in the genitive, and numeral phrases in other genders (as in 37) are in the nominative.[23] Indeed, the form *trzech* 'three' in 36 is syncretic with genitive, while the form *kilka* 'several' in 37 is not—as we have just seen (in 39), the genitive form is *kilku*. As this is a minority view, and it assumes that—unlike anywhere else in Polish grammar—case depends on gender, I do not consider it here. Suffice it to say that if it were true, then 36 would involve unlike case coordination of a nominative pronoun and a genitive numeral phrase, supporting the main claim of this article.

The other two views assume that case does not depend on gender, but differ in whether numeral subjects are taken to be uniformly nominative or uniformly accusative. The nominative view stems from the assumption that Polish subjects are always nominative. It is clear that, unqualified, this assumption is false, as there are well-known cases of subjects that do not bear any case: categorially verbal subjects and prepositional subjects.[24] So, at best, the generalization is that case-bearing subjects are in the nominative.

There are, however, a number of synchronic and diachronic arguments against the nominative view and for the accusative view, of which I present just one here.[25] The argument is based on the fact that Polish numeral phrases may be modified by adjectives, which agree either with the numeral or with the noun. Consider the following examples involving the demonstrative pronoun—morphosyntactically, an adjective—TEN 'this'; some syncretisms are indicated in the morphosyntactic glosses, and the case values assumed or argued for here are in boldface.

(40) Tych / Te kilka pielęgniarek wyjechało.
these.**GEN** / these.NOM/**ACC** several.**ACC**/NOM? nurses.**GEN** left.3SG.N
'These several nurses have left.'

(41) Tych / *Ci kilku lekarzy wyjechało.
these.**ACC**/**GEN** / *these.NOM several.**ACC**/NOM? doctors.**GEN** left.3SG.N
'These several doctors have left.'

In 40, where the noun and the numeral are feminine, two forms of TEN 'this' are possible: the unambiguously genitive *tych*, which agrees with the noun *pielęgniarek* 'nurses', and the form *te*, syncretic between nominative and accusative, which agrees with the numeral. So 40 by itself is compatible with both views: that the numeral is in the nominative and that it is in the accusative. However, in the case of the masculine numeral phrase in 41, only one form of TEN is possible: *tych* 'these', which is syncretic between

[22] The following discussion is based on Przepiórkowski 1999:§5.1 and concerns typical numerals; some paucal numerals behave differently.

[23] This is a simplification. Polish is generally assumed to have five genders, including three masculine genders: human-masculine (also called virile), animate-masculine, and inanimate-masculine (Mańczak 1956), and the dichotomy referred to in the main text is assumed to be between the virile gender and nonvirile genders.

[24] Verbal subjects in Polish are discussed for example in Świdziński 1992, 1993, and—in predicative constructions—in Patejuk & Przepiórkowski 2018, while prepositional subjects are discussed for example in Jaworska 1986.

[25] For this and other arguments, see Przepiórkowski 1999:§5.3.1.1, Miechowicz-Mathiasen 2012, and references therein. An argument similar to the one presented here is sketched—and a similar conclusion is reached—for another West Slavic language, Upper Sorbian, in Franks 1995:138–39. Another argument is alluded to in n. 29 below.

accusative and genitive. Hence, if the accusative hypothesis is right, then 41 with *tych* is structurally ambiguous: either *tych* is genitive and agrees with the genitive noun, or it is accusative and agrees with the accusative numeral. By contrast, on the nominative hypothesis, *tych* in 41 is unambiguously genitive and agrees with the noun. If, by hypothesis, the numeral is nominative, it should be modifiable by the nominative masculine plural form of TEN, that is, by *ci*. As 41 shows, this prediction is not borne out: this example is dramatically unacceptable with *ci*. This refutes the nominative hypothesis and confirms that examples 36–37 do involve unlike case (and unlike category) coordination: a nominative NP is conjoined with an accusative NumP.

As in the previous instances of unlike case coordination, coordination of nominative NPs and accusative NumPs cannot be explained away with recourse to conjunction reduction. Consider the following, somewhat outlandish, example.[26]

(42) [Alibaba i czterdziestu rozbójników] zawarli związek
Ali.Baba.NOM and forty.ACC thieves.GEN made.3PL.M relationship
małżeński.
conjugal
'Ali Baba and the forty thieves got married.'

A hypothetical input to conjunction reduction would not have the meaning of 42, that a single marriage was constituted involving forty-one men. Rather, it would mean that Ali Baba got married (to somebody) and the forty thieves got married, either each to somebody or resulting in a forty-man relationship. This constitutes a semantic argument against conjunction reduction, analogous to arguments given in previous subsections.

However, in the case of coordination involving numeral subjects, there is also a syntactic argument against conjunction reduction, an argument based on the syntactic nature of subject-verb agreement in Polish. Consider again examples 36–37 and 42. In all three examples, a numeral phrase happens to be coordinated with a noun phrase in the singular. The crucial observation is that in all of these examples the finite verb agrees with the coordinate structure as a whole; other forms of the verb would have to be used on an elliptical analysis, where both the overt and the elided forms would be expected to agree with single conjuncts.

Take for example 37, repeated as 43.

(43) … do pokoju wpadli [lekarz i kilka
into room burst.3PL.M doctor.NOM.SG.M and several.ACC.PL.F
pielęgniarek].
nurses.GEN.PL.F
' … into the room burst a doctor and several nurses.'

While closest conjunct agreement would also be possible here, in which case the form *wpadł* 'burst.3SG.M' agreeing with *lekarz* 'doctor.NOM.SG.M' would be used, the form of WPAŚĆ 'burst' actually observed in the fully acceptable 43 is the third-person plural masculine *wpadli*. But this form should be ungrammatical on the conjunction reduction analysis, on which the subject of the first clause would be *lekarz* 'doctor.NOM.SG.M' alone, which agrees only with the form *wpadł* 'burst.3SG.M'.

[26] This example is based on a passage in https://www.fronda.pl/a/alibaba-i-czterdziestu-rozbojnikow-tez-moze-zarejestrowac-swoj-zwiazek,21910.html, on a right-wing portal, where the idea of a marriage of more than two people is ridiculed by posing the rhetorical question of whether Ali Baba and the forty thieves should also have the right to marry. Less outlandish examples may easily be constructed based on collective verbs such as OTOCZYĆ 'surround' or ZEBRAĆ SIĘ 'gather'.

(44) … do pokoju [wpadł/*wpadli lekarz i
into room burst.3SG.M/*3PL.M doctor.NOM.SG.M and
~~wpadło/*wpadli~~ kilka pielęgniarek].
burst.3SG.N/*3PL.M several.ACC.PL.F nurses.GEN.PL.F
‘ … into the room burst a doctor and ~~burst~~ several nurses.’

This is a qualitatively different argument from the previous arguments based on the semantic expectations of adverbs such as JEDNOCZEŚNIE ‘simultaneously’ or expressions such as ZAWRZEĆ ZWIĄZEK MAŁŻEŃSKI ‘get married’, because subject-verb agreement in Polish is syntactic, not semantic, in nature.[27] This is demonstrated by the following examples.

(45) Cała banda zawarła/*zawarli związek małżeński.
whole.NOM.SG.F gang.NOM.SG.F made.3SG.F/*3PL.M relationship conjugal
‘The whole gang got married.’

(46) Pierwsza grupa weszła/*weszli jednocześnie.
first.NOM.SG.F group.NOM.SG.F entered.3SG.F/*3PL.M simultaneously
‘The first group entered simultaneously.’

In 45, *cała banda* ‘the whole gang’ may be understood as referring to Ali Baba and the forty thieves, so 45 may be understood as synonymous with 42. That is, the meaning of the NP *cała banda* is semantically plural, and thus satisfies the semantic requirements of *zawarła związek małżeński* ‘got married’. However, this subject NP is morphosyntactically feminine singular, so the agreeing verb must also be feminine singular: *zawarła* ‘made.3SG.F’ and not *zawarli* ‘made.3PL.M’. Similarly, in 46, the subject NP *pierwsza grupa* ‘first group’ is semantically plural, qualifying as the target of *jednocześnie* ‘simultaneously’, but it is morphosyntactically feminine singular, so the form of the agreeing verb must be *weszła* ‘entered.3SG.F’ and cannot be *weszli* ‘entered.3PL.M’ (or any other plural form). Thus, both examples demonstrate that, in Polish, verbs agree with subjects ad formam, not ad sensum.[28] This in turn means that, in 43, the plural form *wpadli* ‘burst.3PL.M’ agrees with the syntactically plural coordinate structure *lekarz i kilka pielęgniarek* ‘doctor and several nurses’, as is expected on the direct coordination analysis, and not with the syntactically singular closest conjunct *lekarz* ‘doctor’ itself, as would be expected on the conjunction reduction analysis.[29]

[27] See Munn 1999 for a lucid discussion of differences between syntactic and semantic plurality in the context of closest conjunct agreement. Thanks to a referee for this reference and for comments that led to the inclusion of this additional syntactic argument against conjunction reduction.

[28] One exception to the generalization that subject-verb agreement in Polish is always syntactic in nature involves nouns such as *wysokość* ‘highness’, which agree ad formam with attributive adjectives but ad sensum with verbs and predicative adjectives (Czuba & Przepiórkowski 1995).

(i) Jego szacowna wysokość był zmęczony.
his venerable.NOM.SG.F highness.NOM.SG.F was.3SG.M tired.NOM.SG.M
‘His venerable highness was tired.’

However, this concerns only a handful of nouns and only the value of grammatical gender (not number).

[29] Note that, as indicated in 44, the form *wpadli* observed in 43 is also different from the form ‘agreeing’ with the second conjunct, that is, with the NumP *kilka pielęgniarek* ‘several nurses’. It is a well-known fact that, in Polish, such numeral subjects, even though demonstrably plural, ‘agree’ with the ‘default’ third-person singular neuter form of the verb, here, *wpadło* ‘burst.3SG.N’. This quirky syntax of Polish numerals actually provides one more argument for the claim—justified above—that such numerals in the subject position are not in the nominative case, but rather in the accusative: given that, as in other Indo-European languages, Polish verbs agree only with nominative subjects and otherwise occur in the default form (an instance of so-called ‘default agreement’; see Dziwirek 1990), the lack of true agreement between verbs and numeral subjects is the direct consequence of the lack of the nominative case on such numeral subjects.

In summary, Polish allows for the coordination of nominative NPs and accusative NumPs in the subject position, and there are both semantic and syntactic arguments against a hypothetical explanation of this fact in terms of conjunction reduction. Hence, such structures are genuine instances of direct coordination of unlike cases (and unlike categories).

3.8. HETEROFUNCTIONAL COORDINATION. 'Heterofunctional coordination' (HC) is a transparent name—used here after Grosu (1987), who talks about English HETEROFUNCTIONAL COORDINATE CONSTRUCTIONS—for a phenomenon also called 'lexicosemantic coordination' (e.g. in Mel'čuk 1988:40, n. 5, and Patejuk & Przepiórkowski 2012, after Sannikov (1979–1980), who talks about lexicosemantic uniformity of conjuncts in this construction) and 'hybrid coordination' (e.g. in Chaves & Paperno 2007).

In this construction, different grammatical functions may be coordinated, as long as all conjuncts belong to roughly the same lexicosemantic class: all are WH-phrases or all are pronominal quantifiers of the same kind. Two of the Russian examples provided by Mel'čuk (1988:40, n. 5, his ex. (i)–(ii)) involve coordination of nominative subjects and dative arguments.[30]

(47) Russian
[Nikto i nikomu] ne pomogaet.
nobody.NOM and nobody.DAT NEG helps
'Nobody helps anybody.', lit. '[Nobody and to-nobody] not helps.'

(48) [Kto i komu] pomog?
who.NOM and who.DAT helped
'Who helped whom?', lit. '[Who and whom] helped?'

This phenomenon is typical of Slavic and some neighboring languages, especially Hungarian, and it is by no means limited to nominative and dative conjuncts. For example, Browne (1972:223, ex. 4) provides the Serbo-Croatian example 49 (nominative and instrumental), Lipták (2003:148, ex. 18) the Hungarian example 50 (nominative and accusative), and Patejuk (2015:80, ex. 5.3) the attested 51 from the National Corpus of Polish (accusative and dative).

(49) Serbo-Croatian
[Ko i čime] je razbio staklo?
who.NOM and what.INS AUX.3SG broke glass
'Who broke glass with (= using) what?', lit. '[Who and with-what] broke glass?'

(50) Hungarian
[Ki és mit] olvasott?
who.NOM and what.ACC read
'Who read what?', lit. '[Who and what] read?'

(51) Polish
Obiecać można [wszystko i wszystkim].
promise.INF may.IMPS everything.ACC and everybody.DAT
'One may promise everything to everyone.', lit. ' … [everything and to-everyone].'

Nor is HC limited to just two conjuncts, as illustrated in 52.

[30] HC is not constrained to arguments or to bare NPs; see the literature cited in this section for the full range of data.

(52) Polish
[Kto, kogo i czym] karmi?[31]
who.NOM who.ACC and what.INS feeds
'Who feeds whom and with what?' (ambiguous: with what food or using what instrument)

HC prefers light conjuncts, preferably consisting of single words; modification possibilities are very limited.[32] However, there is no doubt that the conjoined elements bear case values indicated in the glosses: not only because of their morphological shape, but also because these case values directly reflect the grammatical functions of these conjuncts. For example, in 47, the two conjuncts meaning 'nobody' are understood as the two arguments of the verb POMOGAT' 'help', and they bear exactly the expected cases: nominative in the case of the subject *nikto* and dative in the case of the other argument, *nikomu*.

Slavic HC differs from superficially similar English examples such as 53 in allowing syntactically obligatory arguments to be conjuncts, which makes an analysis in terms of conjunction reduction unlikely.[33]

(53) Here are a few key points on [what and when] to eat to perform at your best.[34]

For example, a hypothetical input to ellipsis resulting in 47 would be 54.

(54) Russian
[Nikto ne pomogaet i nikomu ne pomogaet].
nobody.NOM NEG helps and nobody.DAT NEG helps
'Nobody helps and they help nobody.'

While 54 is syntactically acceptable, it has a different meaning from 47. The two missing arguments in the two clauses of 54 must be understood as discourse-old, that is, as definite null complements, in the sense of Fillmore 1986. More specifically, 54 means that nobody helps some specific people and some specific person helps nobody. By contrast, 47 is most readily understood as referring to a single situation in which nobody helps anybody. Further convincing arguments against elliptical analyses of HC in Eastern European languages may be found in Kazenin 2001, Gribanova 2009:136–37, and Paperno 2012:99–102 (for Russian), in Lipták 2003 and Bîlbîie & Gazdik 2012: §3.3 (for Hungarian), and in Skrabalova 2007:§§2 and 5 (for Czech).[35]

Let me finally note that HC is true coordination, as implicitly assumed in almost all work on this construction. One argument is that, in languages as different as Polish, Russian, and Hungarian, it is always the conjunction that joins relevant phrases in HC. Merchant 2017:§4, the only recent voice of dissent that I am aware of, claims that HC is not coordination and that items such as the Hungarian *és* 'and' or the Slavic *i* 'and' are used as discourse markers. Admittedly, *i* doubles as a discourse marker in many Slavic languages. However, it is not just *i* that may be used in HC in Slavic. In Czech, for ex-

[31] https://akademiamarketingu.edu.pl/webinar-marketing-kulinarny-przed-w-trakcie-i-po-pandemii/

[32] See Patejuk 2015:§5.8.5 for an overview of such possibilities in Polish.

[33] On English constructions such as 53 and their elliptical analysis, see for example Grosu 1987 and Gračanin-Yüksek 2007.

[34] https://www.active.com/nutrition/articles/athletes-what-to-eat-and-when-for-top-performance

[35] See also Lipták 2011, Paperno 2012:Ch. 3, and Citko & Gračanin-Yüksek 2013 for typological overviews of HC involving WH-phrases and for additional arguments that at least some must be analyzed as the result of direct coordination of such phrases. Semantic analyses of Slavic HC may be found in Paperno 2012 and Przepiórkowski 2022a,b.

ample, the conjunction used to combine WH-phrases in HC is *a* 'and', which does not have such discourse uses, and not *i*, which does (Skrabalova 2007:163, ex. 8a).

(55) Czech
[Komu a co] řekl?
who.DAT and what.ACC said.3SG.M
'What did he say to whom?', lit. '[Whom and what] he.said?'

Further, Patejuk 2015:§5.3 provides attested examples of other coordinators used in HC in Polish, apart from *i*: not only the conjoining *oraz* 'and', but also *ani* 'nor' and *lub* 'or'; none of these doubles as a discourse particle. Moreover, also contra Merchant 2017:§4, 'balanced' versions of some conjunctions, repeated before each conjunct, can be used, as well as preconjunctions; multiple attested examples from Polish may be found in Patejuk 2015:§5.3. Another attested example, involving bare NPs of different cases, is 56.

(56) Polish
… odzwierciedlało [nie tylko co, ale i komu] przekazano
reflected NEG only what.ACC but and who.DAT transferred
z darowizny … [36]
from donation
' … it reflected not only what was transferred out of this donation, but also who it was transferred to … '

In summary, HC is somewhat exotic in that it allows for conjoining different grammatical functions, but it is true coordination, it cannot be explained away with recourse to conjunction reduction, and it may involve bare NP conjuncts bearing a range of different grammatical cases.

4. COORDINATION OF UNLIKE CATEGORIES. Some of the phenomena considered in the previous section involve mismatches in not only grammatical cases, but also unlike categories. Thus, unlike case coordination in possessive constructions (discussed in §3.5) and in secondary predicates (in §3.6) involves coordination of adjectival and nominal constituents, and coordination of nominative NPs with accusative NumPs (discussed in §3.7) also involves different categories. But the other four instances of unlike case coordination in Polish may be seen as instances of more general phenomena, which additionally allow for the coordination of unlike categories. This is most clear in the case of HC, discussed in §3.8, in which unlike category coordination is typical; 57 is just one attested example, involving nominal, adverbial, and prepositional conjuncts.

(57) Mówić [kto, kiedy i z kim] pił wódkę, to jest
say.INF who.NOM when.ADV and with whom.INS drank vodka this is
po prostu nieeleganckie.[37]
simply inelegant
'Saying who was drinking vodka when and with whom is simply inelegant.'

Also, as mentioned at the beginning of §3.4, temporal adjuncts in Polish are not just bare NPs, but also prepositional phrases; 58 involves two conjuncts bearing these two categories, as well as an adverbial conjunct.

[36] https://sip.lex.pl/orzeczenia-i-pisma-urzedowe/orzeczenia-sadow/i-sa-gd-85-20-sprawozdanie-z-darowizny-przekazanej-na-523119725

[37] https://www.rp.pl/Prawo-i-Sprawiedliwosc/190609625-Karczewski-Mowic-kto-kiedy-i-z-kim-pil-wodke-to-jest-po-prostu-nieeleganckie.html

(58) Przyjedzie [albo teraz, albo późnym wieczorem, albo w
come.FUT.3SG or now.ADV or late.INS.SG.M evening.INS.SG.M or in
piątek].
Friday.ACC.SG.M
'(S)he will come either now, or late in the evening, or on Friday.'

Further back, in §3.3, we looked at Russian and Polish predicates that allow their arguments to bear two different cases, without any apparent change of meaning. Similarly, some predicates allow their arguments to be either an NP or a prepositional phrase (PP) without any change of meaning. For example OWINĄĆ 'wrap' allows its fabric argument to be expressed by an instrumental NP or by a PP headed by *w* 'in' (which combines with an accusative NP)—or by a coordination of such phrases (Kosek 1999:43, ex. 8).

(59) Owinął dziecko [w koc i ręcznikiem].
wrapped.3SG.M baby.ACC in blanket.ACC and towel.INS
'He wrapped the baby in a blanket and with a towel.'

The usual tests show that this is a direct coordination of a PP and an instrumental NP, rather than the result of conjunction reduction.

Finally, normally accusative objects may be realized not only as accusative NPs or—with some verbs—partitive genitive NPs, but also as certain quantificational PPs, including PPs headed by the distributive *po* 'each', which combines with locative NPs (see e.g. Przepiórkowski 2013). Hence, examples given in §3.2 (on partitive object marking) may be extended accordingly, as in 60.[38]

(60) Dajcie im [wina, całą świnię i
give.IMP.2PL them.DAT wine.GEN.SG.N whole.ACC.SG.F pig.ACC.SG.F and
po kuropatwie]!
DISTR partridge.LOC
'Serve them (some) wine, a/the whole pig, and a partridge for each!'

Other examples of unlike category coordination in Polish may be found in Patejuk 2015:Ch. 4 and Prażmowska 2015, and in English, for example, in Peterson 1981, 2004, Sag et al. 1985, Bayer 1996, Huddleston & Pullum 2002:§15.3.2, Whitman 2004, Levine 2011:§2.3, Dalrymple 2017, Abeillé & Chaves 2021:§6, and, especially, Patejuk & Przepiórkowski 2021.

5. EXPLAINING COORDINATION OF UNLIKE GRAMMATICAL CASES (AND UNLIKE CATEGORIES). Section 3 presented diverse environments that allow for the coordination of unlike grammatical cases. Most were illustrated with examples from a single language, Polish, and doubtless many more may be found in other languages. Such examples directly contradict the claim that only the same cases may be coordinated.

This result should not be misconstrued: contradicting a universal statement ('the conjuncts in nominal conjunction are always identical in morphological case'; Weisser 2020:43) results in an existential statement ('no, not always'), not in another universal statement. In particular, it does not follow from the discussion above that whenever differently cased constituents C_1 and C_2 may occur in some syntactic environment, the coordinate structure $[C_1 \& C_2]$ may also occur in this environment.

[38] Note that DOM also seems to involve unlike category coordination in some languages, especially in Romance, where an unmarked nominal object may be coordinated with a marked prepositional object. Kalin and Weisser (2019:665, 672–73) provide Spanish examples suggesting that such coordination cannot be analyzed via conjunction reduction, but see again Saab & Zdrojewski 2021 for a voice of dissent.

First of all, what seems like the same environment might in fact not be the same. This is most clear in the case of two different heads H_1 and H_2—of the same phonetic form *H*—forming acceptable constituents with C_1 and C_2, respectively; it does not follow that H [C_1 & C_2] is also an acceptable constituent. This is illustrated by the following Polish examples, based on the attested 61.[39]

(61) To nie premier zarządzał wybory.[40]
FOC NEG prime.minister ordered elections.ACC
'It wasn't the prime minister who called the elections.'

(62) To nie premier zarządzał bankiem.
FOC NEG prime.minister managed bank.INS
'It wasn't the prime minister who managed the bank.'

(63) ?*To nie premier zarządzał [wybory i bankiem].
FOC NEG prime.minister ordered/managed elections.ACC and bank.INS

Polish dictionaries list two different meanings of the verb ZARZĄDZAĆ: one that may be glossed as 'order, call' and combines with the accusative case (or genitive under negation) (see 61), and another that may be glossed as 'manage, run' and combines with the instrumental case (see 62). As might be expected, it does not follow that ZARZĄDZAĆ may combine with a coordinate structure involving both accusative and instrumental conjuncts (see 63).

Second, even when the same head *H* may form acceptable constituents H C_1 and H C_2, it does not necessarily follow that H [C_1 & C_2] is also an acceptable constituent. Consider the following dialogues.

(64) a. Co dać Marii?
what.ACC give.INF Maria.DAT
'What should I give Maria?' (lit. 'What to give Mary?')

b. Daj książkę!
give.IMP.2SG book.ACC
'Give (her) a book!'

(65) a. Komu dać książkę?
who.DAT give.INF book.ACC
'Whom should I give a/the book?' (lit. 'Whom to give a/the book?')

b. Daj Marii!
give.IMP.2SG Maria.DAT
'Give (it) to Maria!'

(66) a. [Co i komu] dać?
what.ACC and who.DAT give.INF
'What should I give and to whom?' (lit. 'What and whom to give?')

b. *Daj [książkę i Marii]!
give.IMP.2SG book.ACC and Maria.DAT
intended: 'Give a/the book to Maria.'

c. Daj książkę Marii!
give.IMP.2SG book.ACC Maria.DAT
'Give a/the book to Maria.'

Polish is a *pro*-drop language and—as 64–65 demonstrate—not only subjects may be dropped, but also other semantically obligatory arguments, given the right context.

[39] In 61–63, the multifunctional *to* acts as a marker of the following focus.

[40] https://wiadomosci.gazeta.pl/wiadomosci/7,114884,27079486,rzecznik-rzadu-broni-morawieckiego-po-zarzutach-nik-to-nie.html

Thus, given that 64a mentions the recipient of *dać* 'give', namely *Marii* 'Maria.DAT', this argument may be dropped in 64b, and similarly for the theme argument *książkę* 'book.ACC' in 65a–b. But, despite the acceptability of both 64b and 65b, involving the same head *daj* 'give.IMP.2SG', example 66b, with the accusative theme and the dative recipient coordinated, is unacceptable; the intended meaning may instead be expressed as in 66c. This is surprising, given that 66a, which exemplifies HC discussed in §3.8, is acceptable, even though it also involves coordination of the accusative theme and the dative recipient.

The acceptability contrast between 66a and 66b shows that, while Weisser's (2020) SOCIC—and Williams's (1981) LCL—are too strong, coordinate structures are not completely unconstrained. However, I claim that there is no universal internal parallelism constraint on coordinate structures of the kind expressed by SOCIC or the LCL: that is, there is no general requirement that conjuncts be syntactically similar in some sense. Instead, coordinate structures are constrained externally: certain constraints imposed on the syntactic position occupied by a coordinate structure must be satisfied by all conjuncts in that structure. That is, an alternative and more empirically promising constraint on coordinate structures is the following.[41]

(67) DISTRIBUTIVE SATISFACTION OF FUNCTIONAL CONSTRAINTS (DSFC): Each conjunct must satisfy all functional constraints on the coordinate structure.

Here, 'functional' refers to the level of representation that encodes grammatical functions such as subject or direct object, as this is the locus of categorial restrictions and case marking. For example, Tamil objects are disjunctively specified as either low on the definiteness scale and nominative (unmarked), or high on this scale and accusative (marked), and the two conjuncts in 7 (in §3.1 above) satisfy this specification by separately satisfying its two disjuncts, in accordance with DSFC. Similarly, Polish subjects are—to the first approximation—specified as either nominative noun phrases or accusative numeral phrases, so they may also be coordinate structures containing both a nominative NP and an accusative NumP, again in accordance with DSFC; and so forth.

It should be clear that the effect of DSFC goes beyond semantic restrictions on particular syntactic positions. For example, Pollard and Sag (1994:§3.2) demonstrate that while verbs like BE, BECOME, WAX, and SEEM all take a semantically predicative argument, they differ in the categorial restrictions they impose on that argument. So, for example, both BE and BECOME may combine with a noun phrase or an adjectival phrase, but only BE may easily combine with a prepositional phrase.[42]

(68) Fred {is/became} {a professor/proud of his work}.
(69) Fred {is/*became} in a good mood.

As discussed in Sag et al. 1985:§3.2 and Dalrymple 2017:§2.1, such selectional restrictions must be satisfied by all conjuncts, and this is exactly what DSFC predicts.

(70) Fred {is/became} [a professor and proud of his work].
(71) Fred {is/*became} [a professor and in a good mood].

Similarly, as discussed in Bayer 1996:§2.4, the preposition DESPITE may combine with NPs denoting facts or propositions (see 72–73), but not with CPs, even when they denote facts or propositions (see 74), and this constraint applies to all conjuncts (see 75), again in accordance with DSFC.

[41] Many thanks to a referee for this formulation of DSFC, more compact than a previous version.
[42] Examples 68–71 are either taken from or based on those in Dalrymple 2017:§2.1.

(72) Despite LaToya's intransigence, Michael signed the contract.
(73) Despite the fact that all the musicians quit, Michael signed the contract.
(74) *Despite that all the musicians quit, Michael signed the contract.
(75) *Despite [LaToya's intransigence and that all the musicians quit], Michael signed the contract.

Returning to the puzzling contrast in 66a–b, I assume that the notion of 'functional' in DSFC extends to grammaticalized discourse functions. On the common assumption that there is a fronted position for WH-phrases in WH-questions, and that the relevant constraint on this position is that it be occupied by a WH-phrase that is a dependent of some predicate within the sentence (subject to any additional locality constraints), 66a also satisfies DSFC: each conjunct is a WH-phrase and each is a dependent of the verb *dać* 'give'.[43] By contrast, 66b is unacceptable because it does not satisfy DSFC. This is because—for any plausible syntactic position that the coordinate structure in this sentence could be assumed to occupy—at least one conjunct violates at least one constraint on that position. The relevant position cannot be that of the direct object of *dać* 'give', as the dative conjunct *Marii* violates case constraints on that position, which say that the object normally bears the accusative case, or the genitive when it is partitive or under negation. It also cannot be the indirect object, as then all conjuncts should be dative. Moreover, it is not the fronted WH-position: the conjuncts neither are fronted, nor are they WH-phrases. Thus, DSFC immediately explains the puzzling contrast between 66a and 66b.[44]

I leave it as an open research question exactly which constraints on a given syntactic position distribute to all conjuncts in accordance with DSFC (i.e. which are 'functional constraints' in the sense of this principle), and which apply to the coordinate structure as a whole or may be satisfied by a single conjunct. A prominent phenomenon that is outside the scope of DSFC is agreement. As illustrated in 76, subject-verb agreement in Polish either requires the resolution of phi-features (in this case, singular feminine and singular masculine are resolved to plural masculine) or involves closest conjunct agreement (here, with *Maria*). Crucially, what is not required is agreement with each conjunct.

(76) Do pokoju {weszli/weszła} [Maria i jej
into room entered.3PL.M/3SG.F Maria.NOM.SG.F and her
mąż].
husband.NOM.SG.M
'Into the room entered Maria and her husband.'

Hence, it seems that the 'functional constraints' in the sense of DSFC should be understood as (unary) properties that particular syntactic positions must satisfy by virtue of realizing particular grammatical functions or grammaticalized discourse functions; agreement—a (binary) relation—is outside the scope of DSFC. In §7, we will look at some implementations of DSFC that are compatible with nondistributive rules of agreement.

[43] The fact that multiple WH-phrases may occupy this position in Slavic and some neighboring languages but not, say, in Germanic is usually related to the general permissibility of multiple WH-fronting in the former group of languages; see for example Gribanova 2009:138.

[44] A fuller explanation of this contrast would need to be preceded by an analysis of HC, one that takes into account its syntactic, semantic, and pragmatic properties. Developing such an analysis is well beyond the scope of this article, but I assume that—in such discourse-configurational languages (É. Kiss 1995) as Slavic and Hungarian—certain focus positions may be occupied by certain kinds of quantificational expressions and, hence, also by coordinate structures consisting of such expressions, perhaps subject to further semantic homogeneity constraints on conjuncts. On an analysis of HC along these lines, DSFC predicts 66b to be unacceptable because the conjuncts lack the quantificational force expected of this focus position.

The main thrust of the above considerations is this: there are no universal internal syntactic parallelism constraints such as SOCIC or the LCL, and appearances to the contrary mostly result from the fact that conjuncts must satisfy external functional constraints imposed on the coordinate structure. This, however, does not deny the possibility that particular constructions in particular languages may impose certain internal parallelism constraints. For example, HC seems to require some similarity of quantifiers expressed by conjuncts, although—as discussed in Grosu 1987:§2 and Przepiórkowski 2022b:§2.2—it is difficult to make this requirement precise. Similarly, as noted in §3.1, some DOM languages seem to impose some internal parallelism constraints on coordinate structures. Careful investigation of whether these are truly internal constraints or whether they perhaps follow from some external restrictions is impossible within the limits of this article. But even if these constructions do impose internal parallelism constraints, this does not invalidate the main claim here, namely, that there is no universal ban on category or case mismatches in coordination.

6. PREDECESSORS. DSFC may be seen as a variant of two previously stated generalizations.[45] The first is the so-called 'Wasow's generalization' (WG; Pullum & Zwicky 1986:752–53, ex. 4).

(77) If a coordinate structure occurs in some position in a syntactic representation, each of its conjuncts must have syntactic feature values that would allow it individually to occur in that position.

Here syntactic features are understood literally.[46] As mentioned in Pullum & Zwicky 1986:752, one implementation of WG is the analysis of unlike category coordination in Sag et al. 1985. There, example 1, repeated below as 78, is predicted to be grammatical because BE requires that its predicative argument bear the +PRD feature, and the coordinate structure *a Republican and proud of it* bears this feature by virtue of each conjunct bearing the +PRD feature.

(78) Pat is [a Republican and proud of it].

By contrast, DSFC does not mention syntactic features. In particular, on the lexical-functional grammar implementation of DSFC proposed in §7.1 below, an accusative object may be coordinated with a partitive genitive object not because they share some syntactic feature, but because they each satisfy a disjunctive constraint on the position occupied by the coordinate structure.

A more general difference between DSFC and WG is that the former does not insist on the syntactic nature of constraint satisfaction. For example, temporal adjuncts bearing different cases (discussed in §3.4) may cooccur in a given position not necessarily because they have specific syntactic features, but perhaps because of their temporal semantics, and similarly for possessive modifiers (discussed in §3.5).

[45] A similar generalization is also presented—but not defended—in Höhle 1990:221. Moreover, a view particularly close to that argued for in the current article is expressed in Borsley's (2005:465) discussion of Pollard and Sag's (1994) approach to coordination:

> Within this approach, how similar conjuncts must be depends on the context in which the coordinate structure appears, specifically on how specific the constraints that it imposes on constituents occupying the position of the coordinate structure are. If the constraints are quite specific, the conjuncts must be very similar. If the constraints are not very specific, the conjuncts may be quite different … Thus, there is no Coordination of Likes Constraint …

[46] In passing, Pullum and Zwicky (1986:752) also give a more general formulation of WG, one that is closer to DSFC: 'Wasow's Generalization says basically that an element in construction with a coordinate constituent must be syntactically construable with each conjunct'. However, this statement is too general, and it is immediately contradicted by agreement facts such as those discussed earlier in this section.

The other previous generalization that DSFC is related to is given in the following quote from *The Cambridge grammar of the English language* (*CGEL*; Huddleston & Pullum 2002:1323).

(79) If (and only if) in a given syntactic construction a constituent X can be replaced without change of function by a constituent Y, then it can also be replaced by a coordination of X and Y.

Here, the main difference with respect to DSFC is that where *CGEL* talks about functions of conjuncts, DSFC refers to functional constraints on a given syntactic position. This difference is important in the case of HC (discussed in §3.8). Consider again 52, repeated below as 80.

(80) [Kto, kogo i czym] karmi?
who.NOM who.ACC and what.INS feeds
'Who feeds whom and with what?'

Such examples seem to violate the *CGEL* constraint:[47] *kto* 'who.NOM' is the subject of *karmi* 'feeds', *kogo* 'who.ACC' is its object, and *czym* 'what.INS' bears yet another grammatical function, so it cannot be said that these three conjuncts are mutually substitutable 'without change of function'. However, on the assumption that there is a dedicated syntactic position for fronted WH-phrases and that the constraint on this position is that such WH-phrases bear SOME grammatical function in relation to a lower predicate, then all conjuncts in 80 satisfy this functional constraint, in accordance with DSFC.

7. DISTRIBUTION OF FUNCTIONAL CONSTRAINTS IN MAJOR LINGUISTIC FRAMEWORKS.

7.1. LEXICAL-FUNCTIONAL GRAMMAR. LEXICAL-FUNCTIONAL GRAMMAR (LFG; Kaplan & Bresnan 1982, Bresnan et al. 2016, Dalrymple et al. 2019) is a linguistic theory that already has at its disposal almost all mechanisms needed to formalize DSFC. A simplified syntactic representation of 81 (based on 9 in §3.2) is given in Figure 1.

(81) Dajcie [wina i świnię]!
give.IMP.2PL wine.GEN.SG and pig.ACC.SG
'Serve (some) wine and a/the pig!'

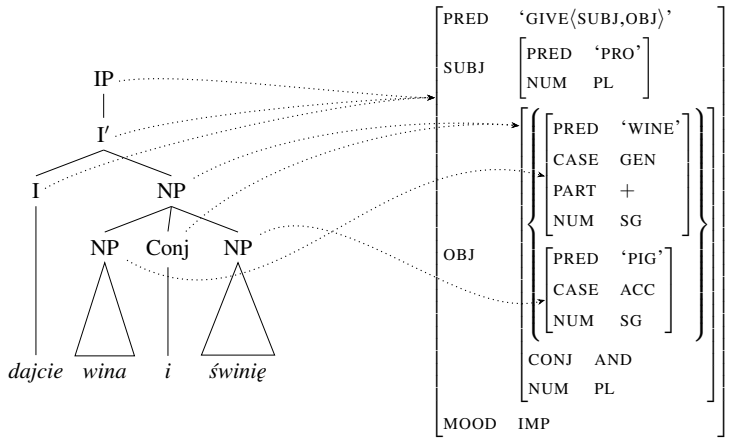


FIGURE 1. Syntactic representation of 81 in LFG.

[47] They are also problematic for other attempts to replace the requirement of the same grammatical categories in coordination with that of the same grammatical functions, for example in Dik 1968:25–28 and Hudson 1990:404–21.

As is common in LFG, the c(onstituency)-structure in Fig. 1 (on the left) is very simple: it does not contain numerous projections of empty heads, typical of MINIMALIST representations. Moreover, it assumes the flat—rather than binary—representation of coordination, but nothing in the implementation of DSFC presented in this subsection hinges on this. There is a mapping, indicated by dotted arrows, from nonterminal nodes of the c-structure to parts of the f(unctional)-structure (on the right). Such f-structures contain information about grammatical functions, as well as values of morphosyntactic features (case, number, mood, etc.). According to the f-structure in Fig. 1, the subject is a plural *pro* and the object is a hybrid structure: a set containing f-structures of both conjuncts, but also having features CONJ(unction) and NUM(ber) specific to the whole coordination.

LFG makes a distinction between distributive features, such as CASE, and nondistributive features, such as CONJ and NUM; only the latter may pertain to whole coordinate structures. In particular, the value of NUM of the OBJ in Fig. 1 is PL (plural), even though both conjuncts are marked as SG (singular). As discussed in Dalrymple & Kaplan 2000:778–79, this approach makes it possible to handle agreement; for example, a coordinate structure in the subject position, containing singular conjuncts, may itself be specified as plural and, hence, agree with the plural verb.

By contrast, when a value of a distributive feature such as CASE is assigned to a coordinate structure, it is not recorded on the hybrid structure itself, but distributes to all conjuncts. For example, the following equation in the lexical entry of a verb that takes an accusative object will have the effect that, when the object is a simple NP, it will bear the CASE value ACC, but when it is a coordination, all of its conjuncts will bear this CASE value.

(82) (↑ OBJ CASE) = ACC

Hence, the above specification cannot be a part of the lexical entry of the Polish verb DAĆ 'give', as its object may—in affirmative contexts—be either accusative or partitive genitive.

Intuitively, the following equations should be part of the lexical entry of DAĆ 'give' instead.[48]

(83) (↑ OBJ CASE) = ACC ∨ [(↑ OBJ CASE) = GEN ∧ (↑ OBJ PART) = +]

This description is saying that either the object must bear the accusative case, or it must bear the genitive and be marked as partitive +.

Unfortunately, this will not work when the value of OBJ is a hybrid structure representing coordination. In such a case, 83 is interpreted as saying that either all conjuncts are accusative, or all conjuncts are genitive partitive. The reason is that, while the possibility that any properties may be distributive is envisaged in the following definition (Dalrymple & Kaplan 2000:779, ex. 73),[49] LFG currently lacks a mechanism to directly express distributive properties more complex than pertaining to values of single distributive features.

[48] In LFG notation logical conjunction is usually left implicit, but I explicitly indicate it with ∧ for greater perspicuity. Example 83 and the following reformulations are oversimplified, as they do not take into consideration the possibility of the genitive of negation.

[49] This definition of distributive properties originated in Bresnan et al. 1985; many thanks to Ron Kaplan and Peter Peterson for making available to me the surviving fragments of various drafts of this unpublished manuscript.

(84) a. For any DISTRIBUTIVE property P and set s, $P(s)$ iff $\forall f \in s.\ P(f)$.
b. For any NONDISTRIBUTIVE property P and set s, $P(s)$ iff P holds of s itself.

The need for such a mechanism has occasionally been expressed in the LFG literature,[50] but there is no standard notation for encoding distributive properties in LFG grammars. In the case at hand, the distributive property P is given in 85, but such statements are not part of the LFG formalism.

(85) $P \equiv \lambda x.\ [(x\ \text{CASE}) = \text{ACC} \vee [(x\ \text{CASE}) = \text{GEN} \wedge (x\ \text{PART}) = +]]$

Note the crucial use of the variable x in 85. While the statement in 85 does not follow the syntax of LFG grammars, the LFG formalism does make use of variables in functional descriptions; in LFG parlance, such variables are called local names and, by convention, start with the percent sign, for example, %O or %GF (see e.g. Dalrymple et al. 2019:§6.5).[51]

A typical use of local names is illustrated with an artificial example below, of a hypothetical verb form which requires that one of its arguments—subject, object, or oblique—be first-person singular masculine.[52]

(86) %GF = (↑ {SUBJ|OBJ|OBL}) ∧
(%GF PERS = 1) ∧ (%GF NUM = SG) ∧ (%GF GEND = M)

In 86, the value of the local name %GF is either the subject, or the object, or the oblique; the statement in the first line of 86 is equivalent to 87.

(87) %GF = (↑ SUBJ) ∨ %GF = (↑ OBJ) ∨ %GF = (↑ OBL)

The second line of 86 says that this grammatical function %GF—subject, object, or oblique—bears the features of first person, singular number, and masculine gender. If such a local name were not employed, the equivalent statement would be more cumbersome and would smack of a missed generalization.

(88) [(↑ SUBJ PERS = 1) ∧ (↑ SUBJ NUM = SG) ∧ (↑ SUBJ GEND = M)] ∨
[(↑ OBJ PERS = 1) ∧ (↑ OBJ NUM = SG) ∧ (↑ OBJ GEND = M)] ∨
[(↑ OBL PERS = 1) ∧ (↑ OBL NUM = SG) ∧ (↑ OBL GEND = M)]

In the case at hand, a description fully equivalent to 83 (i.e. not encoding distributivity) but making use of a local name is 89.

(89) %O = (↑ OBJ) ∧
[(%O CASE) = ACC ∨ [(%O CASE) = GEN ∧ (%O PART) = +]]

The first line of 89 assigns to the local name %O the value of the feature OBJ, that is, an f-structure representing the object, and the second line says that this object must either bear the accusative case or bear the genitive and be marked as partitive +.

As mentioned above, the standard syntax of LFG grammars does not make it possible to mark complex properties as distributive. Instead of introducing a completely new notation, I propose to minimally extend the syntax and semantics of local names for this purpose: when x is a local name, then $x : P(x)$ (with a colon) is understood as saying that P is a distributive property holding either of the value of x or—when this value is a set

[50] See for example Przepiórkowski & Patejuk 2012:§5 and Kaplan 2017:133–34, n. 6.

[51] Templates (Dalrymple et al. 2004) are another locus of variables in LFG grammars, so a different way to encode distributive properties would be by extending the syntax and semantics of templates (Ron Kaplan, p.c.).

[52] This example is inspired by Belyaev's (2020) analysis of first-person singular markers in Ashti Dargwa (an East Caucasian language).

(e.g. a hybrid structure)—distributively of each element of the set.[53] This can be stated more precisely as in 90.

(90) For any property P, the statement $x : P(x)$ is true iff
  a. either x is not a set and $P(x)$ is true (i.e. P holds of x itself),
  b. or x is a set and $f : P(f)$ is true for each element f of x.

With this convention adopted, the intended distributive constraint on possibly partitive objects may be encoded as in 91.

(91) %O = (↑ OBJ) ∧
  %O : [(%O CASE) = ACC ∨ [(%O CASE) = GEN ∧ (%O PART) = +]]

According to 90, the effect of 91 is that the value of %O—that is, the value of (↑ OBJ)—is either an f-structure bearing the ACC-valued CASE attribute, or an f-structure with the GEN-valued CASE and +-valued PART, or a set whose each element satisfies the property in the second line of 91. That means that each element of such a set is either an appropriate—accusative or partitive genitive—f-structure or, recursively, a set satisfying this distributive property. This way, the definition in 90 also covers arbitrarily deeply nested coordination.

The presence of the functional description 91 in the lexical entry of DAĆ 'give' leads to the analysis of 81 shown in Fig. 1. There, the value of %O is the hybrid feature structure containing f-structures for *wina* 'wine' and *świnię* 'pig', and both of these f-structures satisfy the distributive property specified in the second line of 91. The lower f-structure, for *świnię* 'pig', satisfies the first disjunct: its CASE value is ACC. The higher f-structure, for *wina* 'wine', satisfies the second disjunct: its CASE value is GEN and its PART value is +. Note that these f-structures do not share any relevant features,[54] contradicting WG, but not DSFC. Other instances of unlike case coordination may be analyzed in a similar way.

Given the slight extension of the syntax of LFG grammars illustrated in 91, extant LFG analyses are not affected by this proposal. This proposal is also compatible with the previous LFG account of case indeterminacy in Dalrymple et al. 2009, but improves on it. According to Dalrymple et al. (2009), values of CASE are assumed to be feature matrices of the form [NOM ±, ACC ±, GEN ±, …]. For example, assuming the usual four morphological cases in German, the unambiguously dative German pronoun *ihm* 'him' contains in its lexical entry the four equations in 92, resulting in the CASE value in 93.

(92) (↑ CASE NOM) = −
  (↑ CASE ACC) = −
  (↑ CASE GEN) = −
  (↑ CASE DAT) = +

(93) $\begin{bmatrix} \text{NOM} & - \\ \text{ACC} & - \\ \text{GEN} & - \\ \text{DAT} & + \end{bmatrix}$

By contrast, the lexical entry of a nominative/accusative syncretic form such as *was* 'what' contains the following equations, where the first line specifies that at least one of NOM and ACC is +-valued.

[53] This notation is based on that commonly used for the description of sets, where $\{x : P(x)\}$ is the set of objects satisfying the property P.

[54] The fact that both are specified as singular is accidental; the same analysis would go through if the singular noun *świnię* 'pig' were replaced by some plural form, for example, *prosiaki* 'piglets'.

(94) (↑ CASE {NOM|ACC}) = +
(↑ CASE GEN) = −
(↑ CASE DAT) = −

This leads to an elegant analysis of, inter alia, well-known free relative examples such as 95 (from Groos & van Riemsdijk 1981:212, ex. 88c), where *was* is simultaneously accusative (as required of its object by *gegessen* 'eaten') and nominative (as the subject of *war* 'was').

(95) German
Ich habe gegessen was noch übrig war.
I have eaten what.NOM+ACC still left was
'I ate what was left.'

That is, the CASE value of *was* in 95 is the case matrix in 96.

(96) $\begin{bmatrix} \text{NOM} & + \\ \text{ACC} & + \\ \text{GEN} & - \\ \text{DAT} & - \end{bmatrix}$

Dalrymple et al. (2009) use such case matrices not only to account for case syncretisms, but also to handle case indeterminacy, as in the Russian example 15, repeated below as 97.

(97) Russian
Včera ves' den' on prožd̲al [svoju podrugu
yesterday all day he.NOM expected.3SG.M self's.ACC girlfriend.ACC
Irinu i zvonka ot svoego brata Grigorija].
Irina.ACC and call.GEN from self's brother Grigory
'Yesterday he waited all day for his girlfriend Irina and for a call from his brother Grigory.'

On their account, verbs that may combine only with accusative objects contain the equation in 98, and verbs that allow for either accusative or genitive objects, such as PROŽDAT' 'wait for' in 97, are specified as in 99.

(98) (↑ OBJ CASE ACC) = +
(99) (↑ OBJ CASE {ACC|GEN}) = +

Such indeterminate paths are defined in LFG in such a way that they are resolved independently for each conjunct (see e.g. Kaplan & Zaenen 1995:161). This means that 99 may result in the assignment of + to ACC in one conjunct and to GEN in another, accounting for 97 and leading to an f-structure schematically represented in 100 (Dalrymple et al. 2009:52, ex. 54).[55]

[55] All of the '−' values come from the lexical specifications of the nouns heading the two conjuncts.

(100)
$$\begin{bmatrix} \text{PRED} & \text{`WAIT.FOR'} & \\ \text{OBJ} & \left\{\left\{\begin{bmatrix} \text{PRED} & \text{`GIRLFRIEND'} \\ \text{CASE} & \begin{bmatrix} \text{NOM} & - \\ \text{ACC} & + \\ \text{GEN} & - \\ \text{DAT} & - \\ \text{INS} & - \\ \text{PREP} & - \end{bmatrix} \end{bmatrix}\right\}\right. \\ & \left.\left\{\begin{bmatrix} \text{PRED} & \text{`CALL'} \\ \text{CASE} & \begin{bmatrix} \text{NOM} & - \\ \text{ACC} & - \\ \text{GEN} & + \\ \text{DAT} & - \\ \text{INS} & - \\ \text{PREP} & - \end{bmatrix} \end{bmatrix}\right\}\right. \\ & \left.\begin{bmatrix} \text{CONJ} & \text{AND} \end{bmatrix}\right. \end{bmatrix}$$

Unfortunately, this approach—based on indeterminate equations such as 99—works only for the simplest cases, those discussed in §3.3, where the value of CASE is not correlated with any other features and has no semantic import. In the case of the Polish example 81 considered at the beginning of this section, the value of CASE correlates with partitivity, so a more complex distributive statement is needed. Assuming the case matrices of Dalrymple et al. 2009, the distributive case specification of the object of DAĆ 'give' proposed in 91 should be straightforwardly modified to 101.

(101) $\%\text{O} = (\uparrow \text{OBJ}) \wedge$
$\%\text{O} : [(\%\text{O CASE ACC}) = + \vee [(\%\text{O CASE GEN}) = + \wedge (\%\text{O PART}) = +]]$

The data discussed in §§3.1–3.2 and §§3.4–3.7 show that such correlations are the norm rather than an exception.[56] Hence, independently of whether CASE values are assumed to be atoms or case matrices, a mechanism—such as that proposed in this section—is needed to encode more complex distributive properties in a transparent way.[57]

7.2. CATEGORIAL GRAMMAR. LFG is not the only theory that makes formalization of DSFC easy. It is essentially free on the CATEGORIAL GRAMMAR (CG; Ajdukiewicz 1935, Lambek 1958, 1961) approach of Bayer 1996, provided that categories may encode not only strictly categorial information, but also morphosyntactic features (as explicitly assumed by Bayer).[58] Recall that Bayer (1996:§6), following Morrill (1990, 1994), pro-

[56] Such correlations may also involve grammatical categories, as in the phenomena discussed in §§3.5–3.7. See Przepiórkowski & Patejuk 2021 for a proposal, compatible with the current analysis, to represent categorial information not in c-structures but rather in f-structures, so that all selectional restrictions may be expressed uniformly at the functional level.

[57] This last manner modifier is important; Przepiórkowski & Patejuk 2012:§6 and Patejuk 2015:§4.4.2, following a suggestion by Mary Dalrymple (p.c.), show how to encode general distributivity using so-called off-path constraints. That solution is far from transparent and crucially relies on the presence of the PRED attribute (indicating the semantic predicate and its arguments), which—as repeatedly noted in the literature (e.g. in Dalrymple et al. 1993:13–14 and Kuhn 2001:§§1.3.3 and 1.4.1)—is redundant, given more recent approaches to semantics (see e.g. Dalrymple 1999 and Dalrymple et al. 2019:Ch. 8).

[58] Also the categorial analyses of Whitman 2004 and Worth 2016 may easily be extended to unlike category coordination. See also Paperno 2012 for a categorial analysis of lexicosemantic coordination.

poses the derivation in Figure 2 for the classical unlike category coordination example 1, repeated again as 102.

(102) Pat is [a Republican and proud of it].

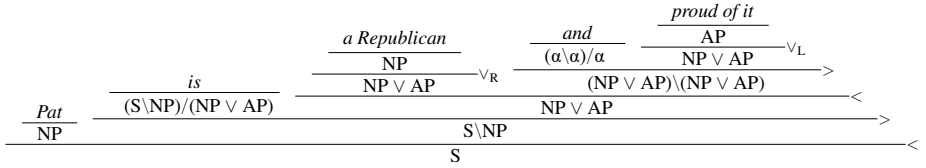


FIGURE 2. CG derivation of 102 (Bayer 1996:596–97).

The key points of this analysis are these. First, the predicative argument of *is* is specified disjunctively, as NP ∨ AP (i.e. a noun phrase or an adjectival phrase). Second, categories NP and AP may each be weakened to the category NP ∨ AP by virtue of join (∨) introduction rules 103–104 (where β and γ stand for any category).

(103) $\dfrac{\beta}{\beta \vee \gamma}\vee_R$ (104) $\dfrac{\gamma}{\beta \vee \gamma}\vee_L$

Third, the category of *and* is the polymorphic (α\α)/α, where α stands for any category.

Similarly, Figure 3 presents a possible derivation of the partitive example 81. Here, *dajcie* 'give.IMP.2PL' takes just one argument, specified disjunctively as NP.ACC ∨ NP.GEN.PART. I also assume the existence of the parochial rule 105, which strengthens any genitive category (not only nominal, but also adjectival) to partitive genitive.

(105) $\dfrac{\alpha.\mathrm{GEN}}{\alpha.\mathrm{GEN.PART}}\mathrm{PRT}$

The rest of the derivation is parallel to that in Figure 2.

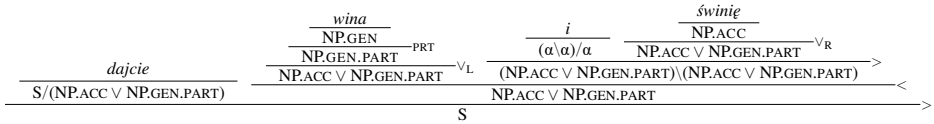


FIGURE 3. CG derivation of 81.

As can be seen in these two derivations, the effect analogous to distributive properties in LFG is achieved in CG via disjunctive categories specified in selectional restrictions (e.g. NP ∨ AP selected by *is*) and the possibility to weaken—via the application of rules 103–104—any specific category such as NP or AP to such a disjunctive category.

7.3. HEAD-DRIVEN PHRASE STRUCTURE GRAMMAR. Within HEAD-DRIVEN PHRASE STRUCTURE GRAMMAR (HPSG; Pollard & Sag 1994, Müller et al. 2021), an analysis of unlike category coordination is proposed in Yatabe 2004 that is very close to DSFC and to the LFG approach sketched in §7.1. In order to handle examples such as 106 (from Bayer 1996:585, n. 7, ex. (iic)–(iid)), Yatabe (2004:343) assumes a lexical entry for *emphasized* schematically represented in 107,[59] in which the category of the object is specified disjunctively as an NP (see *noun*) or a CP (complementizer phrase; see *comp*).

[59] Ellipses (…) mark omitted initial segments of longer paths.

(106) a. We emphasized [Mr. Colson's many qualifications and that he had worked at the White House].
b. We emphasized [that Mr. Colson had worked at the White House and his many other qualifications].

(107) $\left[\begin{array}{l}\textsc{phon}\ \langle \text{emphasized}\rangle \\ \ldots\ \textsc{valence}\ \left[\begin{array}{l}\textsc{subj}\ \left\langle\left[\ldots\ \textsc{head}\ c\left(\left[\begin{array}{l}noun \\ \textsc{case}\ nom\end{array}\right]\right)\right]\right\rangle \\ \textsc{comps}\ \left\langle\left[\ldots\ \textsc{head}\ c(noun \vee comp)\right]\right\rangle\end{array}\right]\end{array}\right]$

The key idea is the use of the distributive functor, *c*, defined in 108 (Yatabe 2004:343, ex. 12).

(108) $\boxed{1} : c(\alpha) \quad \equiv \quad \boxed{1} : \alpha \ \vee\ \left(\boxed{1} : \left[\ \textsc{args}\ \langle \boxed{a_1}, \ldots, \boxed{a_n}\rangle\ \right] \ \wedge\ \boxed{a_1} : \alpha \wedge \ldots \wedge \boxed{a_n} : \alpha\right)$

Here α is a description, such as $\left[\begin{smallmatrix} noun \\ \textsc{case}\ nom\end{smallmatrix}\right]$ or *noun* ∨ *comp* in 107, and an object $\boxed{1}$ satisfies *c*(α)—written as $\boxed{1} : c(\alpha)$—iff it either satisfies the description α directly (see the first disjunct in 108), or if it is (the HEAD value of) a coordinate structure with conjuncts (having HEAD values) $\boxed{a_1}$, …, $\boxed{a_n}$ (see the second disjunct); in the latter case, each of $\boxed{a_1}$, …, $\boxed{a_n}$ must recursively satisfy α independently. Given this mechanism, selectional restrictions of *dajcie* 'give.IMP.2PL' could be encoded as in 109.[60]

(109) $\left[\begin{array}{l}\textsc{phon}\ \langle \text{dajcie}\rangle \\ \ldots\ \textsc{valence}|\textsc{comps}\ \left\langle\left[\ldots\ \textsc{head}\ c\left(\left[\ \textsc{case}\ acc\ \right] \vee \left[\begin{array}{l}\textsc{case}\ gen \\ \textsc{part}\ +\end{array}\right]\right)\right]\right\rangle\end{array}\right]$

The intention of 108 is clear, but it is far from clear how to formally encode 108, even within the highly expressive RELATIONAL SPECIATE RE-ENTRANT LANGUAGE (RSRL) logic often assumed to underlie HPSG (see Richter 2004, as well as Richter 2021 and references therein). That is, it is possible to define relations on objects in RSRL, and for each possible description α it is easy to define a property of objects corresponding to *c*(α) in 108. What is far from clear is how to define *c* in its generality, that is, in a way simulating 108: one relation whose first argument is any description α and whose second argument is an object that should satisfy this description. The problem is that, in standard RSRL, arguments of relations are objects, not descriptions. A second-order extension of RSRL, like that recently proposed in Przepiórkowski 2021b:§4, is needed to formally encode Yatabe's (2004) analysis.

An alternative HPSG analysis of unlike category coordination, one that was frequently assumed in the 2000s, implements conjunction reduction (see e.g. Crysmann 2003, Beavers & Sag 2004, and Chaves 2006, 2007, 2008) in terms of HPSG-specific linearization mechanisms (Reape 1992, 1994, Kathol 1995, 2000). This analysis is applied not only to unlike category coordination but also to other kinds of 'noncanonical coordination', including the 'nonconstituent coordination' of clusters of dependents (*Mary gave Sue* [*a book yesterday and a CD today*]). However, this approach is refuted in Levine 2011 (see also Kubota & Levine 2015) on the basis of reasoning similar to that in the empirical sections of this article: in some contexts the putative input to conjunction reduction either is unacceptable or has a different meaning from the putative output. Thus 110 (from Levine 2011:142, ex. 41), involving a coordination of categorially unlike *dead drunk* and *in complete control …* , would be predicted on such linearization-based analyses to have the same underlying structure as 111, which expresses a markedly different proposition from 110.

[60] See Przepiórkowski 1999:Ch. 5 for a comprehensive HPSG account of Polish case, and Przepiórkowski 2021a for an overview of case marking in HPSG.

(110) [Dead drunk {but/and yet} in complete control of the situation], no one can be.

(111) [Dead drunk, no one can be, {but/and yet} in complete control of the situation, no one can be].

Consequently, the currently common view within HPSG is that such linearization-based 'ellipsis does not offer a complete account of coordination of unlikes' (Abeillé & Chaves 2021:756).

It should be noted that such semantic arguments against conjunction reduction are based on the assumption that ellipsis in general—and conjunction reduction in particular—does not affect truth-conditional meanings of sentences. While this assumption is overwhelmingly common, it is not adopted fully unanimously. Yatabe (2001, 2012) presents a linearization-based analysis of nonconstituent coordination on which ellipsis does influence semantic interpretation, and Yatabe and Tam (2021) defend this analysis against the critique in Levine 2011 and Kubota & Levine 2015. Yatabe (2001, 2012) does not extend this analysis to constituent coordination, and moreover Yatabe and Tam (2021, ns. 31, 35, 42) affirmatively refer to the analysis of unlike category coordination in Yatabe 2004, discussed at the beginning of this section. Nevertheless, a successful extension of Yatabe's (2001, 2012) analysis to unlike category coordination could weaken semantic arguments against conjunction reduction.

Space limits and the high complexity of the analysis in Yatabe 2001, 2012, and Yatabe & Tam 2021 make a detailed investigation of this issue outside the scope of this article.[61] Here, I offer just two empirical arguments against such a putative extension of this analysis to unlike category coordination.[62] One argument is based on the fact that Yatabe and Tam (2021) assume two kinds of ellipsis: phonological, which does not affect meaning, and syntactic, which may. This way the sentence in 112 (from Yatabe & Tam 2021:27, their ex. 27) receives two interpretations: that in 113a via (the meaning-affecting variant of) syntactic ellipsis, and that in 113b via either phonological ellipsis or (the meaning-preserving variant of) syntactic ellipsis.

(112) Terry gave no man [a book on Friday or a record on Saturday].

(113) a. 'There is no man *x* such that Terry gave *x* a book on Friday or Terry gave *x* a record on Saturday.'

b. 'There is no man *x* such that Terry gave *x* a book on Friday or there is no man *y* such that Terry gave *y* a record on Saturday.'

If so, unless something special is said about unlike category coordination, sentence 114 (based on Levine 2011:141, his ex. 40a) is predicted to have the two interpretations in 115a–b, while intuitively it seems to have only the meaning indicated in 115a.

(114) [Both poor and a Republican], no one can possibly be.

(115) a. 'No one can possibly be simultaneously poor and a Republican.'

b. 'No one can possibly be poor and no one can possibly be a Republican.'

[61] Yatabe and Tam (2021:§3) argue that their analysis is not more complex than that of Kubota & Levine 2015, in the sense that it makes a similar number of assumptions. This may be so. However, where Kubota and Levine assume relatively standard mechanisms of categorial grammar, standard mechanisms of semantic composition employing lambda calculus, and standard—easily readable—semantic representations, the analysis of Yatabe 2001, 2012, and Yatabe & Tam 2021 is based on nonstandard underspecified representations of MINIMAL RECURSION SEMANTICS (Copestake et al. 2005) and assumes complex principles at the syntax-semantics interface (see Yatabe & Tam 2021:§2), whose interactions are not always transparent.

[62] Many thanks to a referee for comments that led to the current discussion of Yatabe 2001, 2012, and Yatabe & Tam 2021.

A perhaps stronger argument against ellipsis-based analyses of unlike category coordination is based on sentences such as 116 (from Abeillé & Chaves 2021:755, ex. 69a), whose hypothetical underlying input to ellipsis is ungrammatical; see 117.

(116) Isn't this [both illegal and a safety hazard]?

(117) *[Isn't this both illegal and isn't this (both) a safety hazard]?

As argued by Abeillé and Chaves (2021:755–56),

> [i]f [116] is an elliptical coordination like *isn't this both illegal and ~~isn't this~~ a safety hazard*, then the location of *both* is unexpected. Instead of occurring before the first coordinand, it is realized inside the first coordinand. … In an elliptical account, one would have to stipulate that *both* can only float in the presence of ellipsis, which is unmotivated.[63]

In summary, there is an HPSG analysis of unlike category coordination, that of Yatabe 2004, which is very closely related to the LFG analysis in §7.1, but it requires an extension of the underlying RSRL formalism. Another common HPSG analysis of unlike category coordination, implementing conjunction reduction, is refuted in Levine 2011, based on the assumption that ellipsis does not feed truth-conditional semantics. This assumption is rejected in Yatabe 2001, 2012, and Yatabe & Tam 2021, but only in an analysis of other kinds of noncanonical coordination, one that does not seem to be applicable to unlike category coordination.

7.4. MINIMALISM. Let us finally consider MINIMALISM (Chomsky 1995, 2001), the host framework of Weisser 2020. Since the early 1980s, abstract Case checking has been an important aspect of Chomskyan derivational theories, but the relation between abstract Case and morphological cases remains vague and increasingly tenuous (Bobaljik & Wurmbrand 2008:44). Also, there are competing theories of Case, none being clearly dominant, and none—as far as I can see—immediately compatible with coordination data. For example, on the basis of the existence of closest conjunct agreement in many languages and the lack of analogous 'closest conjunct case checking', Weisser (2020:62–64) convincingly argues against treating Case as a reflex of the standard Agree operation, contra Chomsky 2000, 2001. But theories relating Case to less standard approaches to Agree do not seem to fare much better. For example, when discussing so-called upward Agree (Zeijlstra 2012), Weisser (2020:67) notes that '[f]or reasons of Minimality, both [conjuncts] will inevitably find the same case assigner and thus receive the same case-feature value'. This is exactly the outcome that the data discussed in §3 contradict. An option considered in one of the few other explicit discussions of interaction between Case and Agree in coordinate structures, Bošković 2006:526–27, is that—given the frequently assumed hierarchical structure of coordinations (see e.g. Zhang 2009:Ch. 2 and references therein)—Case is checked on the first (i.e. highest) conjunct and spreads to other conjuncts via 'some kind of Case agreement'. This is, again, directly contradicted by the data discussed in this article.[64]

An alternative approach, on which Case is completely independent of Agree, is the increasingly popular DEPENDENT CASE theory (Marantz 1991, Baker 2015), which assumes that Case is assigned to NPs on the basis of their relative configurational rela-

[63] However, as noted by Shûichi Yatabe (p.c.), the placement of *both* in 116 does not pose a technical problem for the left-node raising analysis of Yatabe 2012, on which 116 would be analyzed as—underlyingly—a coordination of sentences; what prevents 116 from being analyzed this way is rather the fact that *both* cannot be used in sentential coordination. The same argument holds against an elliptical analysis of 114.

[64] Another option considered in Bošković 2006:527 relies on Hiraiwa's (2001) multiple Agree, resulting again in the same Case checked on all conjuncts.

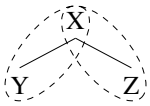
tions within a domain. For example, within the CP/TP domain, the following rules may apply (Baker 2015:74, ex. 66).

(118) a. If NP_1 c-commands NP_2 and both are in the same domain, value NP_1's case as ergative.
b. If NP_1 c-commands NP_2 and both are in the same domain, value NP_2's case as accusative.
c. If NP has no other case feature, value its case as nominative/absolutive.

If coordinate structures were to constitute independent domains, then the dependent case approach would wrongly predict that Cases of conjuncts are governed solely by a principle analogous to 118, that is, only by the relative configuration of conjuncts within coordination. This would make Cases within a coordinate structure independent of the position of the coordination in the sentence—a clearly unsatisfactory result. For this reason Weisser (2020:70) rightly rejects the independent domain assumption and instead assumes that Case assigned to the top node of a coordinate structure somehow spreads EVENLY to all conjuncts. This last assumption is crucial for Weisser's (2020) account of the apparent identity of cases in coordination.

In view of the discussion in the previous sections, what is needed instead is a mechanism to spread any constraints on coordinate structures to all conjuncts DISTRIBUTIVELY, even when such constraints are underspecified or disjunctive. Promising steps toward the implementation of this idea in minimalism are made in Neeleman et al. 2022. There, the top nodes of coordinate structures are assumed not to have any categorial features of their own, in the case of unlike category coordination. However, such nodes are segments of multisegment categories, and each such category contains the segment of a conjunct. This is schematically illustrated in 119, in which X is the top segment of the coordinate structure, Y and Z are the segments of particular conjuncts, and the full categories are the bisegmental X–Y and X–Z.

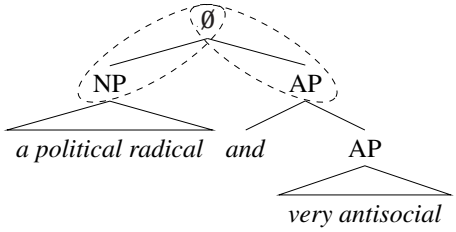
(119)



In the case of the unlike category coordination in 120 (Bruening & Al Khalaf 2020:25, ex. 85a), the two bisegmental categories in 121 are Ø–NP and Ø–AP.

(120) Danny became [[$_{NP}$ a political radical] and [$_{AP}$ very antisocial]].

(121)



While not all technical details are made explicit, Neeleman et al. (2022) assume that this multisegmental representation of coordinate structures makes it possible to—effectively—distribute categorial restrictions imposed on the coordinate structure into all conjuncts. On the assumption that case features are included in categorial features, it should be straightforward to extend the analysis of unlike category coordination in Neeleman et al. 2022 to unlike case coordination. But details and consequences of such an analysis of course need to be worked out.

8. CONCLUSION. Just as there is no universal requirement that only same categories may be coordinated, there is also no crosslinguistic requirement to the effect that all conjuncts must bear the same grammatical case. Even within a single language, it is possible to identify multiple environments that allow for the coordination of different grammatical cases. The main empirical contribution of this article is the description of seven such constructions in Polish, but the same argument could probably be made on the basis of other languages with sufficiently rich inflectional morphology, certainly on the basis of at least some of the other Slavic languages.

It seems that, instead of any universal INTERNAL restrictions on coordinate structures to the effect that conjuncts must be syntactically alike, the only universal restriction is that all conjuncts must satisfy certain EXTERNAL constraints imposed on a given syntactic position. When such external constraints are underspecified or disjunctive, conjuncts may satisfy them in different ways, resulting in different categories or different case values. The impression that internal syntactic parallelism constraints are at play stems from the fact that such external constraints are often rigid, resulting in the obligatory sameness of categories and cases in many syntactic positions.

Any linguistic framework that espouses this view must have at its disposal a mechanism for distributing external constraints imposed on the coordinate structure to all conjuncts. The main technical contribution of this article is an extension of the LFG notion of distributivity to arbitrary properties, as envisaged in Dalrymple & Kaplan 2000 but never transparently implemented. But, while the crucial notion of distributivity is made available in LFG directly, it is not the only theory that makes formalization of the DSFC principle possible. The CG analysis of Morrill 1990, 1994, and Bayer 1996 may be seen as another implementation of this view. Moreover, an account assuming distributivity of constraints to particular conjuncts has also been proposed in HPSG (Yatabe 2004), but it requires a second-order extension of the underlying formalism. Finally, it is not immediately obvious how to reconcile the data introduced in this article with standard minimalist approaches to case and coordination, but Neeleman et al. (2022) propose a new account of coordination that suggests a way of analyzing at least some instances of unlike category coordination in minimalism, and it seems that this account could be extended to coordination of different grammatical cases. Hence, the picture painted in this article may in principle be framed in any of these major linguistic frameworks.

The most important question that is left unanswered in the current article concerns the exact scope of DSFC: which external constraints necessarily distribute to all conjuncts, and which apply only to the coordinate structure as a whole or perhaps to just one of the conjuncts? The distributive constraints considered here refer to features of particular grammatical functions and grammaticalized discourse functions, that is, to features such as grammatical category, case, partitivity, WH status, and so on—hence the moniker 'functional constraints' in DSFC. But it is clear that there are also constraints that do not normally distribute to conjuncts, such as—most prominently—agreement. A general theory of why certain properties but not others are distributive is needed. Also, while there is no universal internal parallelism requirement, some constructions in some languages seem to impose such parochial restrictions, and these constructions should be investigated in more detail. So it is clear that much still remains to be done on the grammar of coordination in general, as well as on coordinate constructions in particular languages. Nevertheless, the present article seeks to remove the straitjacket of stipulations such as the LCL and SOCIC, thus broadening the empirical coverage and opening new research questions, especially about the nature of distributivity in coordination.

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