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# Nominal causal constructions: Causal chains and syncretism\*

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Nominal causal constructions can involve dedicated markers (we arrived late because of John) or syncretic markers that can also convey concrete meanings, such as source (die from alcohol), goal, path, instrument/comitative, etc. So far, these patterns of syncretism have been systematically analyzed only for a few European languages. Based on a grammar survey of a world-wide variety sample of 65 languages, I assembled an annotated dataset of 113 nominal causal constructions. My goal was to explore whether patterns of syncretism correlate with specific types of causal meanings. The dataset provides evidence showing that such correlation does exist. In particular, syncretic markers that normally denote instruments or locations favour contexts where the caused event is simultaneous with the causing event (tremble with fear), while syncretic markers that normally denote endoints of motion favour contexts where the causing event is associated with future-oriented components in the causal chain. Overall, nominal causes tend to be construed in terms of simpler cognitive schemas, and the use of respective markers iconically reflects the structure of the relevant causal chains. By contrast, dedicated causal markers favour the meaning of indirect causation that involves speaker's subjective reasoning. Typologically, dedicated markers are less frequent than syncretic markers. In individual languages, they are often of secondary origin and diachronically unstable. Thus, typologically and cognitively, dedicated causal markers are peripheral for the causal semantic domain, despite the fact that they are important for the European logic-oriented linguistic tradition.

Keywords: causal constructions, typology, case, syncretism, cognitive linguistics.

# Background and goals

# Nominal causal constructions: definition and basic facts

It is customary to assume that "[t]he causative situation is an extra-linguistic phenomenon that underlies all linguistic constructions expressing it. It is composed of a relation between two events (the causing event and the caused event) that are viewed by the speaker as causally dependent on each other" [Degand 2000: 688]<sup>1</sup>. Thus, in (1)<sup>2</sup>, the

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<sup>&</sup>lt;sup>2</sup> Examples (1)–(3) and (6) are taken from the British National Corpus.

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caused event is expressed by *I caught my breath* and the causing event, by *she just looked so lovely*; the sentence in its integrity establishes the causal relation between the two events.

(1) I caught my breath <...> because she just looked so lovely

By nominal causal constructions, I refer to constructions in which the causing event is syntactically represented by a noun phrase, as in (2) and  $(3)^3$ :

- (2) the pilot died of  $[a heart attack]_{NP}$
- (3) you were afraid to move **because of** [this man]<sub>NP</sub>

In both (2) and (3), the caused event is represented by a finite clause (*the pilot died*; *you were afraid to move*). By contrast, the causing event is represented by a noun phrase (NP), shown in square brackets. Such NPs will be referred to as **causal NPs**. The two events are syntactically linked by a marker that establishes the causal link (boldfaced in the examples). Such markers will be referred to as **nominal causal markers**. Intriguingly, the markers in (2) and (3) are different, which immediately raises the question whether this discrepancy signals a semantic difference.

On the language-specific level, the answer to the latter question is clearly in the positive. Relatively many studies address the ways in which nominal causal markers partition the semantic space in individual European languages, such as English [Radden 1985; Dirven 1995]; Russian [Iordanskaia, Mel'chuk 1996; Levontina 2003], Serbian [Ivić 1954; Kovačević 1988], Czech [Klangová 2017], Lithuanian [Valiulytė 1998], etc. There are a few recurrent ideas in these studies, for example, the idea that languages often overtly differentiate between direct causes, as in (2), and indirect causes, as in (3). However, there is a lack of broad typological investigations that explore the factors affecting the choice between specific nominal causal markers. The main goal of my study is to partially fill this gap. But before I make this goal more explicit, a short comment on the nature of causal NPs is in order.

# *Types of causal NPs and metonymy*

Events are prototypically expressed by clauses. In this respect, clausal causal constructions constitute the default syntactic type of causal constructions [Zaika 2019], see (4) for an example. By contrast, nominal causal constructions, as in (5), are, by definition, syntactically reduced and, in some approaches, can be viewed as derived from clausal causal construction (both examples are taken from [Abraham 1991]).

- (4) He has spent most of his life in Egypt because [he has always been obsessed with finding Nefertiti's tomb]<sub>S.</sub>
- (5) He has spent most of his life in Egypt **because of** [his obsession]<sub>NP.</sub>

Abraham argues that nominal structures like (5) are favoured if the causing event is **given** information [Abraham 1991]. Although this hypothesis was initially based on English data, and then explored with respect to a few European languages, e.g. Dutch [Degand 1991], it arguably holds as a typological generalisation. Semantically, nominal causal

<sup>&</sup>lt;sup>3</sup> The caused event is by default expressed by a full-fledged clause, but it can also be reduced to a non-finite structure or else a noun phrase, as in *Sara's anger with Jenny evaporated*. These variations are independent of the causal structure and will not be discussed any further.

constructions are less detailed than prototypical causal constructions. However, nominal causal constructions vary in the degree of their (non-)explicitness. In (6), for example, the causing event is almost maximally explicit.

### (6) Our departure was delayed by an hour **because of** [the plane's late arrival]<sub>NP</sub>(www)

Here, the cause is expressed by a verbal nominalisation, which is a syntactic paraphrase of a full-fledged clause (cf. *because the plane arrived late*). On the opposite pole of the continuum<sup>4</sup> are structures where the cause is syntactically represented by a concrete noun phrase, or even a personal pronoun.

(7)	Lao (< Tai-Kadai; Laos / Thailand) [Enfield 2007: 421]						
	qanø-nii4	keet5-khùn5	ñòòn4	mùng2			
	MC.INAN-DEM	happen	because	2SG.B			
	'This (thing) happened <b>because of you</b> .'						

As Enfield argues, this sentence is elliptical, because 'you' here refers to "presumably, some event or action on behalf of 'you' (i. e., 'This happened because you did/said something')" [Enfield 2007: 421]. In fact, animate causal NPs are always **metonymic**: 'because of a person X' actually means 'because of a state-of-affairs P, where the referent of X is involved'<sup>5</sup>. The relevant state-of-affairs is typically recoverable from the context. For example, depending on the situation *We arrived late because of John* can actually mean '... because John forgot the keys and we had to return', or 'because we had to feed John', or 'because we were watching news about John', etc.

In this paper, I am mainly concerned with constructions where the cause is expressed by a concrete noun phrase<sup>6</sup>. Since these constructions are implicit, it is natural to expect that languages vary in the prevalence of such structures and that some languages lack them altogether.

# Aims of the study

Language-specific studies on the distribution between nominal causal markers typically establish links between specific forms, e. g. the English prepositions *because of, of, with* or *by*, and their (causal) meanings. In a typological study, it is not possible to use specific forms as a starting point for a semantic analysis. As an alternative, I suggest to use **syncretism models** associated with specific markers as a *tertium comparationis*. For example, the English preposition *with* can be used as a causal marker, as in *tremble with fear*, but the very same preposition can also convey the meaning of accompaniment (*John is standing with Mary*), instrument (*cut with a knife*), etc. [Dirven 1995: 100]. Arguably, the pattern of syncretism associated with a specific causal marker reflects the cognitive **construal** of cause in terms of more concrete meanings. It is natural to ask if the mode of construal shapes the distribution of individual causal markers. The main empirical question explored below is the following: is there any typologically robust correlation between

<sup>&</sup>lt;sup>4</sup> Intermediate, i. e. semi-explicit, cases include constructions where the cause is expressed by an abstract noun (*because of the distance*) or an anaphoric element referring to some information in the previous discourse (*because of this*).

<sup>&</sup>lt;sup>5</sup> The same is also true of many constructions with concrete inanimate causal NPs.

<sup>&</sup>lt;sup>6</sup> One of the reasons for this decision is that it is often difficult to a draw a distinction between dependent nominalisations and some types of slightly deranked dependent clauses.

the patterns of syncretism displayed by nominal causal markers and types of causal meanings they express? If there are correlations of this kind, my ultimate goal is to propose **cognitive explanations** to them.

In order to answer the main empirical question, I rely on a typological dataset. Its design features are introduced in the next section ("Dataset"). As its name suggests, the section "Correlations between parameters" explores the correlations between the parameters of the dataset. In the final section "Conclusions", I summarise my findings and discuss them in a cognitive perspective.

### Dataset

### Procedures

This study is based on a typological dataset mainly assembled from available reference grammars (the dataset is available for download at https://github.com/serjozhka/ nominal\_causes\_in\_grammars/tree/main). In order to build this dataset, we relied on a worldwide variety sample of 65 languages, i. e. strived to maximise its genealogical and areal diversity. In particular, this sample contains languages from 45 different language families according to Glottolog (https://glottolog.org/), and no single family was represented by more than four different languages. We also tried to represent macroareas proportionally to their actual diversity and thus to avoid the notorious Eurocentricity. Finally, when compiling the sample, we tried to include languages that had detailed reference grammars.

At the next stage, we explored reference grammars of the 65 languages and extracted available information on their nominal causal constructions. We collectively prepared and discussed overviews of causal constructions in the 65 languages. When preparing the dataset, I largely relied on overviews prepared by my colleagues, to whom I am thus deep-ly indebted: S. Yu. Dmitrenko, N. Ershov, M. L. Fedotov, Emma Geniušienė, D. V. Gerasimov, V. A. Kagirova, M. A. Kholodilova, S. B. Klimenko, A. A. Kuznecov, O. V. Kuznecova, R. G. Mamedshaxov, D. F. Mishchenko, S. A. Oskolskaya, M. A. Ovsjannikova, N. M. Spatar, V. A. Stegnij, A. Yu. Urmachieva, A. P. Vydrin, E. A. Zabelina, N. M. Zaika. However, in the vast majority of cases, I also consulted the relevant grammars directly. The kind people mentioned above bear no responsibility for the potential errors in the data or their interpretation.

I fully acknowledge the well-known shortcomings of using secondary sources for a typological study. Most importantly, there is a significant risk that facts can be misinterpreted or simply lost on their way from the actual use to the grammar and then to the secondary interpretation reported here. However, in this exploratory study we strived for as wide typological coverage as possible. Given that the grammatical topic is relatively minor and that native speakers of most languages of Australia, Oceania and the Americas are not realistically accessible, there was no chance to obtain first-hand data for a sufficiently large worldwide language sample. This said, the present study is conceived as a preparatory stage for follow-up analysis that will be based on first-hand data obtained using a specifically designed questionnaire. The relevant dataset (NoCaCoDa) is already available online [Say et al. 2022–] and the results of its analysis will be published in a separate paper (currenly in preparation by Natalia Logvinova, Elizaveta Zabelina and myself). When building the current dataset based on available grammars, I initially searched for i) explicit mentions of 'cause' or 'reason' among the meanings of specific constructions, and for ii) exemplar sentences translated as causal constructions into the language of the grammar (English, etc.). However, I included in the final dataset only constructions that met the definition of a nominal causal construction adopted at the beginning of the paper<sup>7</sup>.

The first result I arrived at was that languages greatly differ in the number of available nominal causal constructions. Most grammars report one (18 languages) or two (18 more languages) nominal causal constructions, but there are deviations from the average tendency. In some 16 languages, there were 3 to 6 different nominal causal constructions reported in the grammars. Finally, for another 13 languages, reference grammars did not mention any nominal causal constructions at all, the fact that calls for a comment (see below). The total number of different constructions included in the sample is 113. The breakdown of languages and constructions by macroarea is shown in Table 1.

Macroarea	No. of languages	No. of constructions	Average no. of constructions per language
Eurasia	17	49	2.9
Australia	5	11	2.2
South America	7	15	2.1
Africa	12	17	1.4
North America	7	7	1.0
Southeast Asia & Oceania	12	11	0.9
New Guinea	5	3	0.6
Total	65	113	1.7

Table 1. Languages and constructions in the dataset by macroarea

There is a significant areal skewing in the distribution displayed in Table 1: nominal causal constructions are common in some macroareas, such as Eurasia and Australia, and rare in other macroareas. Arguably, the prevalence of nominal constructions correlates with rich nominal morphology and dependent marking, but this hypothesis needs further exploration. At any event, there are many languages where nominal causal constructions are scarce or altogether non-existent. For example, in many isolating languages of Southeast Asia causes must be expressed by full clauses and cannot be reduced to NPs (that is, one has to say literally 'because I was afraid' or 'because my son fell ill' rather than something like 'out of fear' or 'because of my son').

Even in languages that do have nominal causal constructions, these constructions are often closely related to clausal constructions and can be viewed as their derivatives. For example, in Lao, a Tai-Kadai language of Southeast Asia, nominal causal markers are identical with causal causal markers, cf. the use of  $\tilde{n}\partial \partial n4$  'because, because of' in (7) and (8).

<sup>&</sup>lt;sup>7</sup> Our methodology clearly has its downsides. It is almost inevitable that we overlooked some nominal causal constructions in the relevant languages. However, given the quality of grammars we used, it is likely that all major nominal causal construction types made their way into the database.

 (8) Lao (< Tai-Kadai; Laos/Thailand) [Enfield 2007: 421] laaw2 bòø jaak5 caaj1 ñòòn4 vaa1 laaw2 bòø mii2 ngen2 laaj3 3SG.FA NEG want pay because COMP 3SG.FA NEG have money much 'He did not want to pay because he didn't have much money.'

The main syntactic difference between constructions in (7) and (8) is that in (8), the cause is expressed by a clause, which is additionally marked by the complementiser *vaa1*. Importantly, Enfield describes causal uses of  $\tilde{n} \partial \partial n4$  as 'typical'. In a sense, then, nominal causal constructions as in (8) are just reduced variants of clausal constructions.

A different scenario is observed in Choctaw, a language spoken in North America, another macroarea where nominal causal constructions are not particularly common. In (9), the overt causal marker immediately follows the nominal stem, which makes it possible to analyze this example as a nominal causal construction (cf. also its translation).

 (9) Choctaw (<Muskogean; Mississipi) [Broadwell 2006: 86] Ofi-Ø-polla-k-ako chókfi' apa-li-tok dog-COP-because-COMP-CONT:ACC rabbit eat-1SG-PST 'Because of the dogs, I had rabbits to eat.'

However, Broadwell argues that "in general *-polla* is best treated as a suffix on a null copula, but in a few cases, the copula is overt" [Broadwell 2006: 86]. If this interpretation is correct, then example (9) is actually a clausal causal construction in disguise and can be paraphrased as 'because there were dogs…'

Whatever the exact interpretation of the borderline cases like (8) and (9), the vast majority of datset entries, i. e. nominal causal constructions, cannot be viewed as just derivatives of clausal constructions. I tagged all entries for three parameters: morpho-syntactic type, pattern of syncretism and semantic type, as described in three subsequent subsections.

# Morphosyntactic types

Each causal marker was tagged for its morphosyntactic features, viz. whether it is an independent word or an affix, whether it is attached to the causal NP or to the verb (or elsewhere), etc. The vast majority of markers are dependent markers, most notably adpositions, which cover roughly half of the dataset and are very common in Europe, see the English examples in (1)-(2). Comparable in frequency are nominal affixes, including case markers, as in (10).

(10)	)) Ik (< Kuliak; Uganda) [Schrock 2014: 265]					
	bad-úkót-a=noo	nedekeé-'				
	die-COMPL-REAL=PST3	disease-ABL				
	'He died <b>from disease</b> .'					

All other types of markers taken together cover only about 10% of the dataset. However, some nominal causal constructions involve head marking, as in (11) where the causal NP is signalled by a prefix on the verb.

 (11) Hup (< Nadahup; Brazil) [Epps 2008: 510] yũ 2ăn hi-tữ2nó-ố5
 João 1SG.OBJ FACT-laugh/smile-DYNM
 'João is laughing/smiling because of me.' Depending on their properties, such verb-attached markers can be analyzed as applicative markers or verb indices. Arguably, the asymmetry between head marking, which favours core participants [Nichols 1986: 75] and thus normally excludes causal noun phrases, and dependent marking, which can easily accommodate any number of peripheral NPs, accounts for the areal skewing in Table 1: nominal causal constructions are disfavoured in macroareas with poor dependent marking.

For the sake of calculations below, all the actual morphosyntactic types that are encountered in the dataset were lumped into two gross types: "affixes" and "words". Markers that were analyzed as clitics in the grammars were grouped together with "words".

### Patterns of syncretism

The meaning of 'cause' is an abstract meaning. Expectedly, this meaning is often acquired by markers that originally have a more concrete, e. g. a spatial, meaning. Heine and Kuteva list the following source-types for the grammaticalisation of causal markers: BACK, HERE, LOCATIVE, MATTER, PLACE, PURPOSE, SAY, SINCE (TEMPORAL) [Heine, Kuteva 2002: 328]. If a marker preserves its diachronically primary meaning alongside its newer causal meaning, then it synchronically displays **syncretism**<sup>8</sup> (see [Croft 1991: 237–239] for a list of case syncretism patterns in a 40-language sample, including the patterns that involve the meaning of cause). Conversely, any synchronic pattern of causal/ non-causal syncretsim in a given marker probably reflects its development along the concrete > abstract path.

Apart from reflecting historical origins of a marker, patterns of syncretism can reflect the cognitive **construal** of causes on the part of speakers of a language. Finally, according to the principle known as "persistence" [Hopper 1991], markers undergoing grammaticalization are expected to preserve some traces of their origin in their synchronic usage, e. g. in the form of constraints on their distribution.

Based on all these considerations, I manually tagged all nominal causal markers in the dataset for their patterns of syncretism. Obviously, the actual patterns of syncretism can be very complex [Yamaguchi 2004]. However, for the purposes of typological comparison I grouped them into five macrotypes, labelled SOURCE, GOAL, ADJACENCY, OTHER, and DEDICATED (see [Yamaguchi 2004] for a similar idea but a slightly different list of spatially-based macrotypes).

The SOURCE type encompasses markers that can also express the idea of motion from a certain location ('from', 'out of', etc.)<sup>9</sup>. This type of syncretism is very common in Slavic languages [Say 2021], but is widely attested elsewhere [Narrog 2010: 246–247], cf. the spatial (12) and the causal (13) usage of the Lezgian inelative case.

(12)	Lezgian (< Nakh-	-Daghestanian;	Russia) [H	laspelmath 1993: 103–104	]
	Xatimat.a	gičon.d- <b>aj</b>	nek	ca-zwa-j	
	Xatimat.ERG	jug-INEL	milk	pour-IPFV-PST	
	'Xatimat was pou	-			

<sup>&</sup>lt;sup>8</sup> I use the term "syncretism" in order to avoid the debate on the difference between polysemy and homonymy, which is largely pointless for a typological study based on secondary data. Note that [Yamaguchi 2004] refers to the same phenomenon as "conflation (pattern)".

<sup>&</sup>lt;sup>9</sup> Markers that cover meanings such as 'after' or 'since', which can be treated as temporal counterparts to the elative spatial schema, were also included in this macrotype.

(13)	gada.di	utanmišwil- <b>äj</b>	wiči-n	wil-er	čünüx-iz	alaq <sup>h</sup> -na
	boy.ERG	shame-INEL	self-GEN	eye-PL	hide-INF	strive-AOR
'The boy tried to hide his eyes <b>out of shame</b> .'						

The central meaning in the GOAL macrotype is motion towards a certain location (cf. 'allative-related space' in [Yamaguchi 2004]). However, this macrotype also encompasses cognitively related meanings such as recipient, addressee, beneficiary, etc. On the descriptive level, markers of this type are often referred to as 'datives'. The use of a 'dative' case in the causal meaning is exemplified in (14).

(14)	4) Telugu (< Dravidian; India) [Krishnamurti, Gwynn 1985: 320]						
	eņda- <b>ku</b>	āme	moham	nallabaḍḍa-di			
	sunshine.OBL-DAT	she.OBL	face	black.become.PPTCP-3SG.NM			
	'Her face became dark <b>due to the sun</b> .'						

Last but not least, the GOAL macrotype also covers markers that convey the meaning of purpose along with the causal meaning. The relationships between the two meanings are a matter of a long-standing debate. Some researchers claim that the meaning of cause is related to the meaning of goal (in the sense of the endpoint in the motion event) **only** via the meaning of purpose [Narrog 2010: 250–251]. Another question is whether the link between cause and purpose is typologically unidirectional. While the development from purpose to cause is widely attested and arguably constitutes **the** main source of causal markers [Yamaguchi 2004: 91], there is some evidence for the development in the opposite direction [Luraghi 2005]. Despite these disputable issues, markers that are able to convey the allative, dative or purposive meanings were all subsumed under the GOAL macrotype.

The ADJACENCY macrotype covers meanings such as essive ('being at a certain place') and its temporal counterpart (simultaneity markers), prolative (path of motion, 'moving through a certain location'), instrument, comitative, and meanings related to possession (e.g. genitive and proprietive). Obviously, this group of meanings is very large and could have been split into several macrotypes (cf. the distinction between locative-related, comitative-related and path-related spaces in [Yamaguchi 2004]). However, all these meanings are often conflated together in various configurations, so that making further distinctions could be problematic. As an alternative, I chose to lump these meanings together based on one semantic feature they share, viz. spatio-temporal adjacency. Indeed, spatial landmarks in essive constructions indicate relatively stable proximity in space (as in 'the books are on the table'), instruments are necessarily present in the scene at the time of an action (as in 'he chopped down the tree with an axe'), etc.

Some meanings from the ADJACENCY macrotype are known to be closely related to the meaning of cause, see e. g. the discussion of the link between instruments, causes, and passive agents in [Palancar 2001; Narrog 2010: 241–243]. The use of a comitative/instrument marker for conveying the meaning of cause is exemplified in (15).

(15) Koyra Chiini (< Songhay; Mali) [Heath 1999: 267]

1	nda	а	gar	baana	па	kar	bii
i	f	3SG.SBJ	happen	rain	NEG	strike	yesterday
J	ver		0	bun	nda	koron	
]	IPL.SBJ		IPFV	die	with	heat	
'If it hadn't rained yesterday, we would have died of heat.'							

As its name suggest, the residual OTHER macrotype encompasses syncretic nominal causal markers not fitting the first three macrotypes. In the dataset, there are causal markers that have such meanings as the standard of comparison, content (as in 'talk about X'), 'beyond' or replacement ('instead', 'in exchange'). Obviously, meanings tagged as OTHER are not implied to have anything in common.

Finally, the DEDICATED macrotype encompasses markers that do not have salient non-causal meanings. The English complex preposition *because of*, as in (3), or its equivalents in many European languages belong to this type. Some DEDICATED markers in the dataset are actually borrowings from the languages of colonists, see (16), where the marker is borrowed from Spanish.

(16) Yauyos Quechua (< Quechuan; Peru) [Shimelman 2017: 89]</li>
 mana-m lichi ka-n-chu pastu-kawsu
 no-EVD milk.3 be-3-NEG pasture.grass-cause
 'There is no milk. Because of the grass.'

This said, there are of course non-borrowed DEDICATED causal markers in non-European languages, including even case markers, as in (17).

(17) Wambaya (< Mirndi; Australia) [Nordlinger 1998: 92]</li>
 alangi-nmarndi ngiyi-ng-agba ngurra dawu child.I-CAUSAL 3SG. NM. A-IO-HYP 1PL. INC. ACC bite
 'She (the dog) might bite us because of the kids (who are teasing it).'

In Table 2, I show the distribution of observed patterns of syncretism by macroareas.

Macroarea	SOURCE	GOAL	ADJACENCY	(OTHER)	DEDICATED	Total
Eurasia	9	6	13	3	19	50
Australia	3	3	3	0	3	12
South America	3	4	4	2	6	19
Africa	1	7	6	3	2	19
North America	0	1	2	1	3	7
Southeast Asia & Oceania	1	3	0	0	7	11
New Guinea	0	2	0	0	1	3
Total	17	26	28	9	41	121

Table 2. Patterns of syncretism by macroarea

A few comments are in order. First, several markers in the dataset are explicitly described in the grammars as covering more than one non-causal macrotype, most typically, ADJACENCY and GOAL (e. g. by way of covering essive and allative meanings). In Table 2, such markers were taken into account in more than one column. For this reason, the totals shown in the rows are sometimes greater than the raw figures in Table 1.

Second, DEDICATED causal markers cover approximately one third of the total dataset. Thus, typologically, the nominal causal meaning tends to be construed in terms of simpler meanings, e. g. through various spatial schemas.

Third, nominal causal markers display high diversity in terms of syncretism (and, arguably, pathways of grammaticalization) not only at the universal level, but also within macroareas. Basic patterns of syncretism can be encountered in every macroarea where nominal causal constructions are common.

This said, patterns of syncretism do not seem to be evenly distributed by macroareas. The figures are scarce, and the methodology used does not allow to make a robust statistical analysis, but there emerge some skewings in the data. The observed raw frequencies that are greater than the expected value under the null hypothesis by more than one standard deviation are boldfaced and highlighted in grey; conversely, raw frequencies that are smaller than the expected value by more than one standard deviation are italicised. For example, the GOAL type seems to be favoured in Africa and disfavoured in Europe. Interestingly, the languages of Southeast Asia and Oceania seem to favour DEDICATED nominal causal markers. These observations suggest that paths of grammaticalization are not universal, at least in terms of their frequencies.

### Semantic types

It is very rarely (or never) the case that a certain marker can be used in **any** context that is typologically a nominal causal context. As discussed at the beginning of the paper, many languages partition the nominal causal area in the semantic space between several markers. Other languages only have nominal causal constructions that cover a relatively narrow functional niche. In short, most nominal causal markers display a certain functional profile **within** the causal domain.

Unfortunately, i) descripive grammars do not always do justice to these complexities and ii) there is no *a priori* established lists of semantic types in the domain of cause. And yet, a close inspection of a good reference grammar usually does make it possible to outline the semantic profile of a given marker. For the purposes of my dataset, I distinguished between five semantic types of nominal causal markers, tagged as INDIRECT, SIMULTANE-OUS, REACTION, EMOTION, and MOTIVATION, plus the residual UNKNOWN type.

I used two main sources of inspiration when compiling this tentative list. First, I relied on the detailed descriptions of several European languages (see especially [Kovačević 1988] and some other references at the beginning of the paper). Second, I took into account semantic parameters that are mentioned in the studies of causality couched within the framework of cognitive linguistics, especially in the domain of force dynamics (see [Talmy 1976; Croft 2012] *inter alia*). These parameters include the relative position of the two events on the time axis; the nature of the causal chain; semantic type of the main predicate; and the presence/absence of a sentient or agentive participant.

On the practical level, I mostly assigned markers to specific semantic types based on the examples available in the grammar. In many cases, there was enough evidence to conclude that the marker in question covers more than one causal subdomain, in which case it was assigned to two (15 entries) or even three (2 entries) semantic subdomains. However, I must admit that this methodology is stronger in its positive claims than in its negative claims: descriptive grammars very rarely rule out unattested possibilities, so **not** assigning a certain marker to a certain type is normally just a hypothesis based on the lack of evidence to the contrary.

In what follows, I briefly introduce the five semantic types, providing just one illustrative example for each of them. The INDIRECT type covers situations like 'we are late **because of** Bob / the subway accident' or 'this happened **due to** poor management', see (18) from the actual dataset.

(18) Lunda (< Bantoid < Atlantic-Congo; Angola) [Kawasha 2003]</li>
chi-kweti yena mwaka a-kwawu a-iluk-i-aña
7CL-possess 3SG REASON 2CL-friend 3PL-know-SBJ-IPFV
'It is because of him that his friends know.'

This type covers situations where the causing event temporally precedes the caused event and the causation is **indirect**, which means that there are some implicit intermediate links in the causal chain. Typically, indirect causal constructions reflect some **reasoning** on the part of the speaker and involve **metonymy** (see above for a discussion). The meaning of the main verb is irrelevant for this type (non-sentient and non-volitional subjects are possible).

The SIMULTANEOUS type covers situations where the causing event continues at the time when the caused event takes place and there is a direct connection between the two events, cf. 'she shivered with cold', '(trees) sway in the wind', 'he suffered from pain', etc. Non-sentient and non-volitional subjects are possible (and common) in these constructions. An actual example from the dataset is in (19).

(19)	Tuwali Ifugao (<	Austronesian;	Philippines) [Hohulin	, Hohulin 2014]		
	Munluluwa=ak	te	nan	ahuk		
	shed_tears=me	because	DET.MED	smoke		
'I am shedding tears because of the smoke.'						

In the situations covered by the REACTION type, the causing event triggers a response on the part of a volitional person so that the causal link is rooted in that person's attitudes. The caused event typically affects the actor of the causing event, as in 'punish someone **for** his words', 'the prize was awarded **for** the discovery of...', etc.

 (20) Lithuanian (Indo-European; Lithuania) [Emma Geniušienė, personal communication: October 2021]
 Padėko-k tetul-ei už dovan-ą

Ι μμελο κ		u~	uovun ų
thank-IMP.2SG	aunt-DAT.SG	for	present-ACC.SG
'Say thank you to an	untie for the gift!'		

The EMOTION type refers to cases where the caused event is an emotion, as in 'she is angry with X', 'he was upset about the whole thing', 'they were afraid of the noise', etc., see also an example from the dataset in (21).

(21)	1) Lezgian (< Nakh-Daghestanian; Russia) [Haspelmath 1993: 99]							
	ada-n	širin	ses.ina- <b>l</b>	bilbil	hejran	že-da		
	she-GEN	sweet	voice-SUPERESS	nightingale	surprised	be-FUT		
	'Even a nightingale will be surprised <b>at her sweet voice</b> .'							

The reason for differentiating emotive events from other causal constructions is that these events inherently have a complex causal structure where the so-called 'stimulus' has double representation in the causal chain: it functions as both the trigger of the emotion and its content [Croft 1993; Verhoeven 2007]<sup>10</sup>.

<sup>&</sup>lt;sup>10</sup> The borderline between the last two types, viz. REACTION and EMOTION, is subtle, because (generally uncontrolled) emotions usually go hand in hand with (generally controlled) manifestations, cf. pairs like 'be angry with X' (EMOTION) vs. 'punish someone for X' (REACTION).

The anonymous reviewer remarks that causal NPs in REACTION and EMOTION types can be closer to arguments (or complements, in reviewer's terminology) than to adjuncts and that this fact can have consequences for various aspects of their grammatical behaviour, including their degree of grammaticalisation. This can indeed easily be the case. However, the argument vs. adjunct distinction is far from clear-cut (see e. g. [Haspelmath 2014] for an overview) and is notoriously difficult to draw based on secondary evidence. This is one of the reasons why adjuncthood is not part of the working definition of the nominal causal construction adopted here (see the first section of this paper).

The final type, MOTIVATION, covers situations where the causing event triggers a certain pattern of behaviour on the part of a volitional actor because the actor conceives a desirable situation in the relative future, as in 'the dogs are fighting over a bone'. An actual example from the dataset is in (22).

(22) Cavineña (< Pano-Tacanan; Bolivia) [Guillaume 2017: 543]</li>
 Peru=ra=tu José confite jiteke jiyu-ya
 Pedro=ERG=3SG(-FM) José candy LOOKING.FOR be.friendly.to-IPFV
 'Pedro is friendly to José<sub>i</sub> because of his<sub>i</sub> candies.'

This semantic type constitutes a bridging category between causes and purposes.

Overall, tagging nominal causal markers for their semantic types based on reference grammars is of course preliminary. Moreover, in 27 instances, the grammars did not contain enough information for even a tentative semantic characterisation; these markers were tagged UNKNOWN in the dataset. However, the data at hand make it possible to observe some interactions between parameters, as discussed in the next section.

### Correlations between parameters

Since the entries in the dataset were tagged for three parameters, viz. morphosyntactic type, syncretism pattern, and semantic type, it was possible to explore three types of pairwise interactions between parameters.

Let's start with the interaction between the pattern of syncretism and morphosyntactic type, as summarised in the following contingency table.

	,				
Syncretism	Affix		V	Word	Total
macrotype	No.	%	No.	%	No.
DEDICATED	8	0.2	33	0.8	41
(OTHER)	3	0.3	6	0.7	9
GOAL	10	0.4	16	0.6	26
ADJACENCY	18	0.6	10	0.4	28
SOURCE	11	0.6	6	0.4	17
Total	50	0.4	71	0.6	121

Table 3. Pattern of syncretism and morphosyntactic type

The rows in Table 3 are sorted in order of increasing ratios of affixes. The main observation here is that DEDICATED causal markers gain affixhood less frequently than syncretic markers<sup>11</sup>. This finding conforms to the basic principles of the **grammaticaliza-tion** theory: the loss of autonomy, most notably the word-to-affix development, is typically accompanied by semantic bleaching, including the loss of semantic spealisation and acquisition of abstract meanings [Lehmann 1995: 122–127].

Table 4 is designed similarly to Table 3, but here, morphosyntactic types of causal markers are contrasted with their semantic types.

Semantic type	Af	fix	We	Total	
	No.	%	No.	%	No.
REACTION	2	0.2	8	0.8	10
(UNKNOWN)	6	0.2	21	0.8	27
INDIRECT	8	0.3	24	0.8	32
MOTIVATION	5	0.3	12	0.7	17
EMOTION	10	0.6	6	0.4	16
SIMULTANEOUS	20	0.7	10	0.3	30
Total	51	0.4	81	0.6	132

Table 4. Semantic type and morphosyntactic type

The data in Table 4 suggest that semantic types of nominal causal markers fall into two groups based on their likelihood to surface as affixes. Markers that belong to the RE-ACTION, INDIRECT, and MOTIVATION types are typically words, while markers of the EMOTION and SIMULATANEOUS types favour affixhood, at least relatively speaking<sup>12</sup>. Clearly, markers of the former types convey less direct causes than markers of the latter types. Indeed, REACTIONS ('punish someone for his words') and MOTIVATIONS ('the dogs are fighting over a bone') necessarily involve a volitional participant who acts as an intermediate link in the causal chain; the INDIRECT type, as it name suggests, also involves an intermediate link. By contrast, both the SIMULTANEOUS and EMOTION types normally presuppose spatiotemporal adjacency between the causing and the caused event. In this respect, the typological correlation between the meaning and form of nominal causal markers is **iconic**: tighter semantic integration favours the use of morphosyntactically coalesced markers.

Finally, the interaction between semantic types and patterns of syncretism is shown in Table 5.

It is worth stressing that whatever interactions emerge from the data presented in Table 5, they are empirical rather than logical: the two dimensions are logically independent of each other. The values of individual constructions along the two dimensions have been identified on orthogonal grounds: semantic type was identified based on the meanings observed in causal constructions, whereas the type of syncretism was always identified based on the meanings available to the same marker in its non-causal uses.

There are empirical generalisations that suggest themselves based on the data in Table 5.

<sup>&</sup>lt;sup>11</sup> Other potential topics, e. g. the possible SOURCE vs. GOAL asymmetry (where the former seems to favour affixhood), should be explored elsewhere.

<sup>&</sup>lt;sup>12</sup> Markers classified as UNKNOWN are excluded from consideration for obvious reasons.

Semantic type	DEDICATED	(OTHER)	GOAL	ADJACENCY	SOURCE	Total
REACTION	3	2	3	1	1	10
(UNKNOWN)	9	5	5	3	5	27
INDIRECT	22	0	2	5	3	32
MOTIVATION	7	0	9	2	1	19
EMOTION	3	2	6	6	2	19
SIMULTANEOUS	5	0	6	17	7	35
Total	49	9	31	34	19	142

Table 5. Semantic types and patterns of syncretism

First, even these limited data indicate that any type of a marker's pattern of syncretism ( $\approx$  original non-causal meaning) is compatible with virtually any semantic type (the only zeros in Table 5 are found for the residual OTHER type).

Second, the two parameters interact in non-trivial ways. Unfortunately, given the multitude of subcategories and the scarcity of data, this kind of interaction cannot be explored in necessary detail. However, some combinations of values are clearly favoured against the background of a null hypothesis (in this case, the null hypothesis is that there is no dependence between the pattern of syncretism and semantic type of a causal marker). The values in the corresponding cells are boldfaced. In particular: i) INDIRECT causes favour DEDICATED markers (cf. *We arrived late because of John* in English); ii) SIMUL-TANEOUS causes favour markers from the ADJACENCY category, including markers that function as instrumentals, locatives, prolatives etc. in the basic non-causal meaning (cf. *she shivered with cold* in English); iii) MOTIVATIONS favour markers that are syncretic with GOALS, including datives and beneficiary markers (cf. *the boys are fighting for a ball* in English).

All of these correlations are cognitively motivated. Indeed, INDIRECT causes are the most abstract and complex types of causes, they often reflect some reasoning on the part of the speaker. It is only natural to observe that these contexts attract the most specialised markers that lack concrete meanings. The other two correlations corroborate Hopper's principle of 'persistence' [Hopper 1991], according to which markers tend to preserve some traces of their original meanings in the course of grammaticalization. In particular, the SIMULTANEOUS semantic type covers situations in which the causing and the caused event are spatiotemporally adjacent, which is reminiscent of the non-causal meanings grouped under the rubric of ADJACENCY (e. g. the essive and the instrumental meanings). Finally, the MOTIVATION semanic type is partially future oriented, which makes it cognitively related to such non-causal roles as endpoints of motion, recipients and beneficiaries, all of which are lumped into the GOAL category.

# Conclusions

From the perspective of several well-described European languages, canonical nominal causal markers are relatively common markers that can be exemplified by prepositions like *because of* (English), *wegen* (German) or *iz-za* (Russian). However, in a wider typological perspective, nominal causal markers are not universal. In fact, some languages lack nominal causal constructions altogether or at least prefer to express causing events by full-fledged clauses rather than to derank them to the status of noun phrases.

The typological data I used in this study indicate that DEDICATED nominal causal markers are less common, at least in terms of their type frequency<sup>13</sup>, than **syncretic** causal markers. The meaning interpreted as 'cause' by linguists is typically construed in terms of more concrete cognitive schemas by speakers. DEDICATED causal markers are probably disfavoured in some macroareas (such as Africa, for example), although this hypothesis needs more robust evidence.

Thus, the patterns of syncretism are of extreme importance for the typologically oriented analysis of nominal causal constructions. My most general finding is that these patterns strongly correlate with the semantic types of causes that a given marker can express. Diachronically, these correlations correspond to the principle of **persistence**, as operative in the theory of grammaticalization. Synchronically, the link between a marker's pattern of syncretism and its semantic content **iconically** reflects the **temporal** structure of the causal chain associated with that marker (cf. the approach advocated in [Croft 1991: 183–239]). In particular, the meaning of a SIMULTANEOUS cause (as in 'to shiver with cold') is often syncretic with non-causal meanings implying spatio-temporal adjacency (instrument, essive location, path, etc., see the macrotype labelled ADJACENCY above). By contrast, the meaning of a MOTIVATION (as in 'to fight over a bone') is often syncretic with meanings that contain a future-oriented component (endpoint of motion, beneficiary, etc., see the macrotype labelled GOAL above).

In this perspective, it is not surprising that causal meanings labelled REACTIONS (as in 'to punish someone for his words') and EMOTIONS ('to be angry with someone') can be construed in many different ways and do not favour a specific type of construal. Indeed, these meanings have a very complex temporal structure, where the causer is represented twice in the causal chain [Croft 1993; Dirven 1995: 103; Verhoeven 2007: 62] and the whole scene is mediated by a sentient being's image of the world<sup>14</sup>.

Finally, the semantic type labelled INDIRECT causes (as in 'to be late because of the subway accident') are in many ways exceptional as compared to the other semantic types of causes. In particular, they are partially subjective (i. e. reflect the speaker's endeavour to interpret external reality in rational terms) and implicit (some components of the causing situation are taken for granted). These complex meanings do not easily fit basic, e. g. spatial, cognitive schemas and typologically favour DEDICATED markers. If compared to syncretic markers, DEDICATED causal markers are often unusual in several respects: i) they are often of secondary origin, which can be visible in their internal structure (cf. *because of or thanks to* in English); ii) they can be restricted in terms of register (cf. book-ish prepositions like *owing to* or *by virtue of* in English and their counterparts in many European languages); iii) they can be more easily borrowed than the primarily spatial markers that encompass the meaning of cause in their semantic network; iv) they can have very low token frequency and can easily undergo renewal in the course of history (see [Say

<sup>&</sup>lt;sup>13</sup> Type frequency corresponds to the frequency of different items, that is, to the frequency in the lexicon. It is opposed to token frequency, that is, to the frequency in the texts (which was not explored here).

<sup>&</sup>lt;sup>14</sup> For example, the meaning of *Peter punished John for his words* implies that **John** (the protagonist of the causing event) pronounced some words, so that Peter became aware of this and disapproved these words, after which he carried some action that affected **John** negatively.

2021] for a discussion based on the Slavic data). All of these observations indicate that typologically, DEDICATED causal markers are in a sense **peripheral**.

Two final comments emerged from the data above but should be elaborated elsewhere.

First, it is not necessarily the case that the meaning of 'cause', which figures prominently in philosophical and semantic literature, is a unitary phenomenon in language. In particular, the meanings that were analyzed above as semantic types of causes can turn out to be relatively independent from each other in terms of the ways in which they are treated by grammars of individual languages.

Second, on a methodological level, there is an urgent need to bridge the gap between the theory of grammaticalization, which is mainly based on (reconstructed) histories of individual languages, and quantitative typology, which mainly deals with synchronic distributions in samples of languages whose histories remain unknown. Hopefully, my study contributes to the development of methodology that is necessary for bridging this gap.

#### Abbreviations

1, 2, 3	— 2 <sup>nd</sup> , 3 <sup>rd</sup> person	HYP	— hypothetical mood
2CL, 7CL	$-2^{\rm nd}$ , 7 <sup>th</sup> class	IMP	— imperative
А	<ul> <li>transitive subject</li> </ul>	INC	— inclusive
ABL	— ablative	INEL	— inelative
ACC	— accusative	INF	— infinitive
AOR	— aorist	IO	— indirect object
В	— bare	IPFV	— imperfective
CAUSAL	— causal case	MC.INAN	- modifier-classifier (inanimate)
COMP	— complementiser	MED	— medial
COMPL	— completive	NEG	— negation
CONT	- contrastive	NM	— non-masculine
COP	— copula	OBJ	— object
DAT	— dative	OBL	— oblique
DEM	— demonstrative	PL	— plural
DYNM	— dynamic	PPTCP	— past participle
ERG	— ergative	PST	— past
EVD	— evidential	PST3	— remote past
FA	— familiar	REAL	— realis
FACT	— factitive	REASON	— reason marker
FM	— formative	SBJ	— subject
FUT	— future	SG	— singular
GEN	— genitive	SUPERESS	- superessive

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#### Именные причинные конструкции: каузальные цепочки и синкретизм\*

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Именные причинные конструкции могут содержать специализированные показатели (we arrived late because of John) или синкретичные показатели, которые также способны выражать такие конкретные значения, как, например, начальная точка движения (die from alcohol), конечная точка движения, путь, место покоя или инструмент/ спутник. До сих пор такие модели синкретизма систематически изучались только для нескольких европейских языков. На основе обзора грамматик общемировой выборки из 65 языков я создал размеченный набор данных, включающий 113 именных причинных конструкций. Цель состояла в том, чтобы выяснить, коррелирует ли тип синкретизма причинного показателя с тем, какие конкретные причинные значения он выражает. Данные подтвердили наличие такой корреляции. В частности, синкретичные показатели, которые в базовом употреблении обозначают инструмент или место покоя, предпочитают контексты, в которых каузируемое событие происходит одновременно с каузирующим (tremble with fear), а синкретичные маркеры, которые в базовом употреблении обозначают конечную точку движения, предпочитают контексты, в которых каузирующее событие ассоциируется с компонентами в каузальной цепочке, ориентированными на будущее. Именные причины обычно осмысляются через более простые когнитивные схемы, а использование соответствующих причинных показателей иконически отражает структуру каузальных цепочек. Специализированные причинные показатели коррелируют с выражением опосредованных причин, а такие причины отражают субъективную попытку говорящего объяснить наблюдаемые явления. Специализированные причинные показатели типологически менее частотны,

<sup>\*</sup> Исследование выполнено при поддержке гранта РНФ «Причинные конструкции в языках мира: семантика и типология» (руководитель В. С. Храковский, грант № 18-18-00472).

чем синкретичные. Они часто имеют вторичное происхождение и оказываются диахронически нестабильны. Таким образом, с типологической и когнитивной точек зрения специализированные причинные показатели оказываются периферийными для семантической зоны каузальности, несмотря на то что они занимают существенное место в европейской лингвистической традиции, ориентированной на логические структуры.

*Ключевые слова*: причинные конструкции, типология, падеж, синкретизм, когнитивная лингвистика.

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