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Accounting for causation by omission: Indifference in *laisser*-causatives

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This article reexamines the long-standing debate on the existence of causation by omission by offering a novel formal model that distinguishes LET-causatives from canonical ENABLE-type causatives. I argue that causation by omission is a genuine phenomenon, supported not only by speakers' intuitions but also by its grammatical encoding in natural language. Drawing on data from French causative constructions involving *laisser*, I show that omissions can be formally modelled as causes within a structured causal framework. This distinction clarifies the semantic and syntactic behaviour of *laisser*, while in turn highlighting that LET should be treated as its own causal notion, one that is distinct from ENABLE.

1 Introduction

Much of the early philosophical and linguistic work on causation has focused on event-based, counterfactual accounts, in which causation is treated as a relation between events: if one event had not occurred, another would not have either (notably Lewis (1974); Dowty (1979), a.o.). A classic example is found in Lewis's (1974: 635) formulation: "if *c* and *e* are (distinct) actual events, […] then *e* causally depends on *c* iff, if *c* had not been, *e* never had existed". He then goes on to explain that causal dependence entails causation, in the sense that, if *e* would not have happened if it was not for *c*, then *c* is a **cause** for *e*. This view implies that causation necessarily involves an active, positive relation between two actual events—an assumption that has shaped much of the literature. However, this framework faces difficulties when confronted with intuitively causal situations that involve omissions rather than events. Consider the case where I ask a friend to watch over a roast while I run to the store. My friend agrees, but becomes distracted and does not take it out, resulting in the roast burning. Although he did nothing to directly cause the roast to burn, it feels entirely natural to say that his failure to act (in other words, his omission) caused the outcome. This paper takes this kind of example as a starting point to explore a fundamental question: can causation arise from indifference or failure to act, and if so, how is this reflected in natural language? More precisely, the goal is to investigate the phenomenon of causation by omission, and to show that it is not merely a conceptual or moral attribution, but a linguistically and cognitively real form of causation that hinges on the notion of indifference. I propose that such indifference, far from being a passive lack of intention, can be understood as an *intention not to intervene*, and thus as an active force in the causal structure of events. This recharacterisation allows me to extend the force-theoretical framework of causation to account for omissions.

To make this case, I focus on linguistic evidence from *laisser*-causatives in French, which, unlike their English counterparts, offer a more transparent semantic window into the structure of causation by omission. Let us consider the following sentence, which could very well be used by a French speaker to refer to the roast-burning scenario above:

(1) Mon ami a laissé mon rôti brûler !
My friend has let my roast burn.INF
'My friend left my roast to burn!'

The sentence in (1) can be used regardless of whether I assume that my friend was willfully negligent or simply unaware. In both interpretations, he failed to prevent the burning; this lack of an act still licenses a causal reading. I propose that such uses of *laisser* encode a specific type of causation, distinct from that expressed by ENABLE-type verbs such as *permettre* 'to allow'. Where ENABLE suggests facilitation through active contribution, *laisser* (and therefore its conceptual counterpart LET) captures causation through non-intervention, rooted in an attitude

of **indifference**. Drawing on Carnes & Janoff-Bulman (2012), I conceptualise indifference not as a non-intention, but as an intentional stance towards not acting, whether motivated by neglect, apathy, or deliberate choice. Thus defined, the notion of indifference can be treated as a kind of force within the broader force-dynamic models of causation (Wolff 2007; 2008; 2012; Wolff et al. 2010; Copley & Wolff & Shepard 2016), though existing frameworks have thus far been limited to modeling "positive" intentional forces (that is, either intentions towards p or $\neg p$). Incorporating indifference into the force-theoretical landscape allows us to account for a wider range of causative constructions that are otherwise marginalized in event-based theories.

Section 2 introduces *laisser*-causatives and their properties, which allows us to capture the conceptual representation of LET-relations; its aim is to highlight why *laisser*-causatives make good candidates for situations of causation by omission. The role of the Causer in *laisser*-causatives is examined in section 3, by looking at previous approaches to causation in order to try and capture the notion non-interference in more formal terms. The combination of these theoretical approaches with the empirical data of *laisser*-causatives allows for the introduction of the notion of *indifference*. Section 4 introduces causal modelling according to Pearl (2000) and discusses its potential application for LET, while section 5 proposes a formal representation for the causal notion of LET and its subnotions of *authorise* and *not-intervene*. That section ends with a theoretical discussion of the notion of causation by omission. Lastly, Section 6 concludes.

2 *Laisser*: a causative verb encoding non-canonical causation

2.1 In syntactic causative constructions

The French verb *laisser*, much like its English counterpart *let*, can realise syntactic causative constructions, i.e. constructions in which both the causing event (e_1) and the caused event (e_2) are projected syntactically. In Romance syntactic causatives, e_1 is canonically expressed through a light verb, while e_2 is encoded by a non-finite clause embedded under said light verb. Those constructions have received a lot of attention in the literature for their idiosyncratic properties; however, much of that work focuses on the light verb *faire* and its Italian cognate *fare*, both 'to make' (Kayne 1975; Guasti 1996; Folli & Harley 2007; Ciutescu 2019). In Faire-Infinitive constructions (FIs), the light verb combines with the non-finite verb, hence creating a *complex predicate*. Complex predication occurs when two simplex predicates — one of them a light verb — combine in order to form a single complex one with a single argument structure (Butt 1995; 2010).[1] The complex predicate *faire chanter* has two arguments: a Causer (the subject of the complex predicate) and a Causee (its object). This differs from their English counterpart, in which the Causee is the subject of the embedded verb.

[1] The embedded predicate may be a VP, like with FIs, but it can be an NP or a DP as well. Notably, *faire* + NP constructions are fairly common for emotion-triggering constructions, see Damourette & Pichon (1911); Knittel (2017).

(2) Le professeur a fait chanter les enfants.
the teacher has made sing.INF the children
'The teacher made the children sing.'

Surprisingly, *let*-verbs across Romance have received less attention for their syntactic properties, despite realising (at least) two distinct syntactic causative constructions: one of them of type FI, as in (3a), the other realising an Exceptional Case Marking construction (ECM hereafter).

(3) a. Le professeur a laissé chanter les enfants.
the teacher has let sing.INF the children
b. Le professeur a laissé les enfants chanter.
the teacher has let the children sing
'The teacher let the children sing.'

The existence of these two constructions led authors such as Borel (1972); Kayne (1975); Silva (2012); Enghels & Roegiest (2012; 2014) to assume that each construction possesses distinct semantic properties, potentially related to their (also distinct) morphosyntactic properties. Notably, Kayne (1975: 222) uses the contrast between the pair of sentences below in (4) to propose that the FI construction is unmarked, while the ECM construction would carry an intentional flavour (hence a situation in which the guard acted with 'complicity, or deliberate neglect').

(4) a. Le gardien a laissé s'échapper les prisonniers.
the guard has let escape.INF the prisoners
b. Le gardien a laissé les prisonniers s'échapper.
the guard has let the prisoners escape
'The guard let the prisoners escape.'

On the other hand, Silva (2012), and Enghels & Roegiest (2012; 2014) propose a more fine-grained analysis, in which French *laisser*, Spanish *dejar*, and Portuguese *deixar* can accommodate three main readings: (i) permitting, (ii) not opposing, and (iii) releasing.[2] As noted by Raffy & Donazzan & von Heusinger (2024), the release reading is not relevant for French *laisser*, as French possesses another verb, *lâcher*, with which *laisser* shares the Latin root verb *laxare*. Therefore, I will be using the terminology of Raffy (2021): (i) authorise, and (ii) not-intervene, which I discuss in section 2.2.2. These readings need not be tied to a specific structure, but Enghels & Roegiest (2012) do observe that the FI construction is more common than the ECM in the French corpus FRANTEXT. Yet, it appears that the FI is dispreferred with animate Causees. Consequently, if we assume that authorising requires two volitional (hence animate) entities in order to be felicitous,

[2] These readings are rough translations of the Spanish ones in Enghels & Roegiest (2012): (i) *permitir*, (ii) *no oponerse*, and (iii) *soltar*.

then the *authorise* reading is likely to be encoded by an ECM construction rather than an FI. While this does not seem to suggest as strong a mapping as that proposed by Borel (1972) or Kayne (1975), it still seems to hint at some degree of preference for one construction over the other for each given reading. I propose that these two readings are both non-interference readings, only with distinct aspectual properties which are due to the properties ascribed to the Causer. These differences are developed in the next section.

2.2 Letting it happen: *laisser* and causation by omission

2.2.1 Introducing would-be prevention

It has been observed that *laisser*-causatives make perfect candidates for expressing causation by omission (Donazzan & Raffy & von Heusinger 2020; Raffy 2021). This proposal arises from the observation that *laisser* has only one strict requirement on the selection of its Causer: the Causer ought to be a **would-be preventer** for result. That is, it must be an entity that holds the relevant properties to prevent the caused event from occurring. The term notion of would-be preventer is directly borrowed from McGrath (2005), who states that would-be preventers are entities for which it would be *normal* to prevent an event from occurring. She defines normality as follows: "it is normal for x too φ iff x is *supposed* to φ (2005: 138). This holds whether the Causer is animate or inanimate: cases in which the Causer does not hold the relevant properties to prevent the result from occuring are infelicitous. In (5b), my mother does not have the ability to authorise or prevent me from going to the Moon (unless she works at NASA, and I am not an astronaut, in which case the sentence becomes felicitous). In (6b), vents are expected to let air through, therefore 'the vent' is not a would-be preventer for letting air through and as such cannot be a Causer of a *laisser*-causative.[3]

(5) a. Ma mère m'a laissée aller au cinéma.
my mother me-has let go.INF to-the cinema
'My mother let me go to the cinema.'

b. #Ma mère m'a laissée aller sur la Lune.
my mother me-has let go.INF on the moon
'My mother let me fly to the Moon.'

(6) a. La vitre fissurée laisse filtrer de l'air.
the window cracked lets filter.INF of the-air
'The cracked window lets air in.'

[3] *Laisser*-relations with inanimate Causer-Causee pairs are discussed in Raffy (2021), under the name 'dispositional letting'. While they behave similarly with respect to the strict would-be prevention requirement on the Causer, they also display additional constraints as well as extra semantic effects. As such, they would deserve their own article and will only be mentioned again in the discussion in section 5.3.

b. #La grille d'aération laisse filtrer de l'air.
the grille of-ventilation lets filter.INF of the-air
'The vent lets air through.'

The relevance of this notion becomes especially clear when we consider the broader philosophical challenge posed by causation by omission, which complicates canonical, event-based approaches to causation. Traditionally, causation is conceived as a counterfactual relation between two events, where the first event (e_1) brings about the second (e_2). For Lewis (1974), this is formalized as: e_1 causes e_2 iff $e_1 \rightarrow e_2$ and $\neg e_1 \rightarrow \neg e_2$. In other words, e_1 must be followed by e_2, and e_2 would not occur without e_1. In neo-Davidsonian semantics, such causation is modelled with syntactic causatives. For instance, the sentence in (7) can be decomposed as in (8), where the Causer initiates e_1 (the "making") and the Causee is responsible for e_2 (the "speaking"):

(7) Dan made Alex speak.

(8) Causer(D, e_1) & CAUSE(e_1, e_2) & Causee(A, e_2) & SPEAK(e_2)

While this decomposition works well for lexical and *make*-causatives like (7), it encounters serious limitations when applied to cases of omission. If causation is strictly taken to be a relation between events initiated by agents, omissions become problematic: how can the absence of an action function as an initiating event? If no action occurs, it seems there is no e_1 to speak of. Consider the classic case from McGrath (2005), repeated in (9):

(9) Barry's not watering the plant caused its death.

(from McGrath 2005: 126)

Here, the scenario is intuitively plausible: I asked my neighbour Barry to water my plants while I was away, but he failed to do so, and the plant died. Although many people did not water the plant (neither King Charles nor Dolly Parton did, for instance) we do not attribute causation to their omissions. According to McGrath, this is because Barry is a would-be preventer: someone for whom it is normal, in the given context, to act in a way that would prevent the plant's death. He was explicitly asked and agreed to water the plant, so the expectation of his intervention was strong. No such expectation existed for the King or Dolly Parton, who were under no such obligation. The distinction between Barry and these other non-waterers illustrates how causal responsibility in omissions hinges on norm-based expectations. This concept is at the heart of the semantics of *laisser*-causatives, and is developed in the next section.

2.2.2 A scale of non-interference?

I have mentioned above that *laisser* has been analysed by as having two readings: (i) authorise, and (ii) not-intervene. The notion of non-interference introduced in the section 2.1 raises the issue of the Causer's causal influence in the causal relations encoded by *laisser*-causatives, particularly in so-called *authorise*-relations, as an authorisation intuitively stands for a form of interference.

The issue is tackled in Donazzan et al. (2023): the authors make use of the notions of causation by omission and would-be prevention and propose that, in *authorise* LET, the Causer must be understood as being able to restrict the Causee's set of alternatives[4] (marked ALT_{SET}) without ever actually doing so, which is what we get from (10) below.

(10) La juge a laissé l'accusé parler.
The judge has let the-defendant speak
'The judge let the defendant speak.'
a. laisser [$_{VoiceP}$the defendant [$_{vP}$ speak]]
b. $ALT_{defendant}$:= {*speak, not speak*}
c. Judge sets the value of $ALT_{defendant}$:= {*speak, not speak*}
(from Donazzan et al. 2023: 10)

This ought to be understood as meaning that, before the judge's influence applied, the defendant could either choose to speak or not to speak. With her letting, the judge reinforces the availability of the two alternatives (seeing that, having authority in the courtroom, she could have decided to restrict the set by removing the *speak* alternative). It could be argued that she pushes the *speak* alternative, considering it is the one she chooses to let happen, but not speaking nevertheless remains available to the Causee, as is examplified by (11) below. The judge does not care whether the defendant speaks or not; it appears to mean that the occurrence of the result is trivial in *laisser*-relations.

(11) La juge a laissé l'accusé parler, mais il est resté silencieux.
The judge has let the-defendant speak but he is remained silent
'The judge let the defendant speak but in the end he remained silent.'

On the other hand, for *not-intervene* LET, the authors propose that no set of alternatives is actually introduced, as the result-event is already ongoing.[5] Nevertheless, the constraint on the selection of the Causer remains the same: it ought to be an entity that holds preventing properties but does not act on them. What is made salient is (i) the existence of a possibility for the Causer to prevent the result, and (ii) the sheer absence of desire of the Causer to prevent said result.

While I will keep the *authorise* and *not-intervene* terminology throughout the paper to refer to the set of inferences associated with each reading, I propose contra Donazzan et al. (2023) that the two readings are actually both non-interference readings, and should be understood respectively as *nontrivial-non-interference* and *trivial-non-interference*. The results of the experiments led by Raffy

[4] The ALT_{SET} is a set of alternative propositions available to an Agent at *t*. Free Agents can pick any alternative that is available to them. In causal relations, some of those sets of alternatives may be restricted by the Causer (see PREVENT relations for instance).

[5] The authors explain that this is mirrored by the morphosyntactic properties of the FI construction, which does not introduce a VoiceP but a mere VP, therefore the Causee cannot be a "chooser" because it is not an Agent.

& Donazzan & von Heusinger (2024) highlight that French speakers typically favour a *not-intervene* reading for *laisser* across the board. The authors note that the *authorise* reading almost exclusively arose when (i) the Causer had authority over the Causee, and (ii) the Causer strayed too far from the norm by letting the caused event happen. Both conditions seem to be necessary to get the *authorise* reading. I take this to mean that French speakers deem the Causer more causally *responsible* for not-interfering when there is a strong expectation that the Causer should prevent the caused event from occurring. Let us make this clearer with some examples.

(12) Le policier a laissé les émeutiers détruire les installations.
the policeman has let the rioters destroy.INF the facilities
'The policeman let the rioters destroy the facilities.'

(13) Le policier a laissé les bénévoles ramasser les détritus.
the policeman has let the volunteers pick-up.INF the rubbish
'The policeman let the volunteers pick up rubbish.'

The contrast between (12) and (13) is quite straightforward: in the scenario depicted by the former, there is a strong expectation that the policeman should prevent the rioters from destroying the facilities. As such, his non-intervention is perceived as being nontrivial and he is deemed highly responsible; this mirrors Kayne's proposal regarding (4) above. There is no such expectation in the second scenario, as there is no reason to stop someone from picking up rubbish. This perception of the causal relations at hand impacts in turn the aspectual meaning of the sentence. Since *authorise*-relations are seen as relations in which the caused event should have been prevented, the letting is seen as the starting point for the caused event. Conversely, *not-intervene* scenarios generally have a letting that co-occurs with the result[6]: generally, the result is already ongoing at the time of the letting.

Lastly, it must be noted that lettings (as non-interferences) should be understood as 'inhibited eventualities' (Fábregas & González Rodríguez 2020). Following Stockwell & Schachter & Partee (1973), for whom negative verbal phrases are a type of events, Fábregas & González Rodríguez show that these negative verbal phrases should in fact be treated as inhibited eventualities, i.e. eventualities that have both stative and eventive properties. Notably, Davidson's 'this happens' test, which was introduced to support the claim that action sentences include an event variable, (1969) works perfectly fine with *laisser*-relations:

(14) La juge a laissé l'accusé parler. C'est arrivé lorsque j'étais hors de
the judge has let the-defendant speak.INF this-is happened while I-was out of
la salle d'audience.
the room of-audience
'The judge let the accused speak. It happened while I was out of the courtroom.'

[6] Similarly, see the difference between *launching* and *entrainment* in Copley & Harley (2015; 2019).

Yet, *laisser*-relations, being inhibited eventualities, pattern with states with respect to the strict interval property, which states processes require a minimum length for their subintervals to count as instances of the same type, whereas states impose no such constraint (Maienborn 2005).

Let us briefly take stock. I have now shown that the causative verb *laisser* encodes hybrid relations (both in terms of dynamicity and agentivity) in which the Causer's potential (but unrealised) intervention is construed as a causal factor. These are situations where a prevention is expected but does not occur. Accordingly, the key to understanding *laisser* and the related causal notion of LET lies in precisely characterising the Causer's role within these causal relations.

3 The Causer's influence: (re)defining non-interference

3.1 Not an ENABLE verb

While counterfactual approaches to causation view it as a necessary relation between events, force-theoretical approaches to causation view it as a relation between (two or more) entities having intrinsic tendencies; how these entities interact with one another is what defines the causal relation (Talmy 1988). In force theories, *letting* (as well as related notions such as *helping* and *enabling*) is generally defined by opposition with *causing*. *Causing* refers to situations in which there is (a) opposition between Causer (Affector) and Causee (Patient) as (b) the Causer has a tendency for p while the Causee has a tendency either for $\neg p$ or for neither p nor $\neg p$. That tendency of the Causee is then overcome by the Causer's, hence leading to (c) the occurrence of a result. *Letting*, on the other hand, is analysed by Talmy (1988) as encoding reverse force interactions in which the Causee has a tendency for p, which is blocked by the Causer's, who has an tendency towards $\neg p$. The opposition exerted by the Causer is then removed, hence allowing the result to occur. In a later approach, Wolff & Song (2003); Wolff & Thorstad (2017) propose that the notion of opposition is actually not necessary to the understanding of the notion of ENABLE (under which Talmy's *letting* is expected to fall). The characteristics for each causal notions as described in Wolff & Song (2003) are replicated in **Table 1** below:

	Tendency of Patient for the result	**Opposition Affector and Patient**	**Occurrence of result**
CAUSE	×	✓	✓
ENABLE	✓	×	✓
PREVENT	✓	✓	×

Table 1: The three causal notions of Wolff & Song (2003).

The English verb *let*, when it enters syntactic causative constructions, is generally understood as encoding relations belonging to the causal notion of ENABLE. For this reason, it is often interchangeable with other ENABLE-verbs like *allow*.[7]

(15) a. The art teacher let Peter paint his own portrait.
b. The art teacher allowed Peter to paint his own portrait.

At first glance, the criteria appear to align well with *let*: it is reasonable to infer that the art teacher allowed the action because (i) Peter had the intention to paint his own portrait, and (ii) the teacher had no objection to it. Given that both the Causer and the Causee displayed tendencies favourable to the result, the occurrence of the result is a predictable. If *laisser*-causatives were to be interpreted as ENABLE situations, the three inferences in (17) would be true if (16) were true.

(16) Mar a laissé David chanter.
Mar has let David sing
'Mar let David sing.'

(17) a. David has a tendency towards singing (an intention)
b. Mar has a tendency towards David's singing
c. David sings (p)

But, in fact, this is not quite the picture that we get from the interpretation of *laisser*-causatives. Instead, a sentence like (16) yields two possible sets of inferences: if it is read as an *authorise* scenario, then it triggers the inferences in (18), and if it is interpreted as a *not-intervene* situation, we get the inferences in (19).

(18) a. David has a tendency towards singing (an intention)
b. Mar does not prevent him from singing
c. David may sing and may not sing ($p \wedge \neg p$)

(19) a. David has a tendency towards singing (an intention)
b. Mar does not prevent him from singing.
c. David is (already) singing.

When comparing (17) with (18) and (19), we can see that the first inference remains the same, therefore ENABLE and LET share one core principle. However, the second one already differs: while (17b) indicates that Mar intends for David to sing, (18b) and (19b) make no such claims. Instead, Mar is indifferent to David's singing; in other words, she does not care whether he sings

[7] This interchangeability holds with both animate and inanimate Causers, as English speakers are able to say 'this mirror lets Peter paint his own portait', in the sense that it *allows* him to do so. Speakers of both British and American English note that that structure is perfectly acceptable although much less formal than its *allow*-counterpart.

or not. The non-opposition component remains, but Mar's influence over David's singing is to be understood as neither stimulatory nor inhibitory. This means she does not push him (force or encourage) him to sing, and neither does she prevent him from singing. The last point ought to be discussed, as this is where *authorise* and *not-intervene* diverge; while (18c) highlights that the result does not necessarily occur in *authorise*-relations, (19c) shows that the so-called result is already ongoing in *not-intervene* relations (which seems like it goes without saying, but must be pointed out nonetheless). Thus, the way the would-be prevention is exerted slightly differs. In *authorise*-contexts, David's choice to sing or not remains open, because his singing is not influenced by any external force (e.g Mar's intention). He can either choose to sing or not to sing, depending on his intention at *t*. On the other hand, the would-be prevention is more subtle in *not-intervene* relations, as the singing is already occurring. Nevertheless, the fact that the situation is expressed through a *laisser*-causative in which Mar receives the role of Causer is taken to mean that Mar is perceived as being able to prevent the singing if she were to choose to. Canonical force-theoretical theories such as that of Wolff & Song (2003) do not seem to provide us with an guide for understanding the negation of a concept; and yet, this is what we are interested in here – what does it mean to not prevent? Is it the same as authorising? Apparently not, at least not when lexicalised through a *laisser*-causative. And since those theories fail to account for situations in which the Causer's tendency cannot be defined in terms of being *for* or *against* the result, then they are too restrictive to include concepts such as LET.

The claim that *laisser* does not encode ENABLE-relations is further supported by the fact that it does not pattern with *permettre* 'to allow' the way their English counterparts do. The contrast is particularly salient when the enabling relation is made explicit, as in (20a):

(20) a. ???En lui donnant la permission, Mar a laissé David chanter.
by him giving the permission, Mar has let David sing.INF
'By giving him permission to, Mar let David sing.'

This inability to encode ENABLE-relations indicates that *laisser* must have a semantics distinct from that of *let*. It thus remains challenging to determine precisely what *laisser* contributes to our ontology of causation. The next section examines the limited involvement of the Causer in *laisser*-causatives and emphasises the importance of viewing causative constructions as linguistic representations of perceived causal relations, rather than as direct reflections of objective or 'true' causation.

3.2 Would-be prevention and causal insufficiency

Although it has now been established that *laisser* is not quite an ENABLE verb, the question of its definition remains. The previous section introduces the idea that the Causer's involvement is too minimal to qualify for ENABLE; the logical next step is to define the Causer's participation

to the causal relation. In normality approaches to causation, participants in a causal chain are classified as either causes or enabling conditions, depending on whether they meet criteria of *necessity* or *sufficiency* (Mackie 1965; 1974; Hart & Honoré 1985; Cheng & Novick 1991; 1992; Wolff & Song & Driscoll 2002; Nadathur & Lauer 2020). As defined by Verschueren et al. (2004), a necessary condition is one without which the outcome cannot occur, while a sufficient condition guarantees the outcome. Let us consider our example with Mar and David above in (16), repeated below in (21).

(21) Mar a laissé David chanter.
Mar has let David sing
'Mar let David sing.'

If *laisser*-causatives stood for ENABLE-relations, they would be able to select *enabling conditions* as Causers. Enabling conditions are causal factors that are insufficient but necessary for the result, they are also considered to be both normal and stable (Cheng & Novick 1991). Is Mar's letting necessary for David's singing? When no letting is performed, the result may still occur, as is exemplified by (22), which ought to be interpreted as meaning 'even though Mar did not explicitly state her agreement for David's singing, David still sung'.

(22) Mar n'a pas laissé David chanter, mais il a chanté quand même.
Mar NEG-has NEG let David sing.INF but he has sung when even
'Mar has not let David sing, but he sung nonetheless.'

Additionally, the discussion on causation by omission in section 2.2 highlights that the Causer, being a would-be preventer, fails to act *normally*. However, Mar's letting is not sufficient either for the occurrence of the result; in *authorise*-relations, the Causee is not bound to sing by the letting and she can still choose not to sing if it agrees with her tendency (see discussion about (10) in section 2.2.2). For this reason, LET-relations allow for a non-culminating reading of the caused event, as in (23):

(23) Mar a laissé David chanter, mais il a préféré danser.
Mar has let David sing.INF but he has preferred dance.INF
'Mar let David sing, but he danced instead.'

In this light, the would-be preventer in cases of omission, such as Mar in the LET readings, is minimally involved and appears to satisfy neither necessity nor sufficiency, further complicating its classification within standard causal frameworks. If the Causer of *laisser*-causatives is both **insufficient** and **unnecessary** for the result, how come they can enter causal relations at all? If they had no causal relevance, one could expect (24a) and (24b) to have the same meaning:

(24) a. Mar a laissé David chanter.
Mar has let David sing.INF
Mar has let David sing.'
b. David a chanté.
David has sung
'David sung.'

The reason why they differ is because the speaker attributes the role of would-be preventer to Mar, because she believes Mar could or should have prevented David from singing, but simply does not because she does not care for the outcome. This raises an issue that cannot be made visible by approaches that do not treat causation by omission: the speaker's knowledge or evaluation of the properties (or assumed properties) of the Causer and the Causee is relevant in understanding the expression of causal relations in natural languages. In other words, linguistic expressions of causal relations are often more of a reflection of the speaker's knowledge and beliefs rather than a true representation of actual causes and effects following the laws of physics. One famous example of the way our belief system and moral compass influences our judgment of causal relations is the Knobe effect, or side-effect effect (Knobe 2003; 2004). The Knobe effect shows that the bringing about of side effects of actions considered to be morally bad tend to be perceived as intentional, while the bringing about of side effects of actions considered morally good, or neutral, is generally taken to be unintentional. This appears to be particularly true in cases in which there is a moral judgment as well as a causal one: Knobe & Fraser (2008) show that moral judgments of an event may impact the causal judgment on said event. In the example above, say that David sings every night and wakes up his neighbours every time he does, and Mar is David's mother. One could thus expect Mar to prevent him from singing at night. But we have seen in section 3.1 Mar does not care whether David sings or not, in other words she is indifferent to the outcome. Since the occurrence of the singing (and its side effect of waking everybody up) is borne out of indifference, people will be likely to judge that what she did was morally reprehensible, considering that she breaks rules of politeness and community. While not being entirely similar to McGrath's normality, it appears to rely on similar mechanisms: if the speaker has any form of expectation (be it moral or not) with respect to the Causer's behaviour, and those expectations are not met, she is more likely to judge that the Causer is causally responsible for the result.

Because conceptual indifference shapes how we frame and articulate causal relations, it must be recognised and integrated into existing frameworks. Therefore, indifference must be defined as a causal force that warrants modelling in its own right.

3.3 Indifference: an attitude with causal properties

Intuitively, indifference can be understood as an attitude that is *neutral* towards a certain result. Put simply, the holder of said attitude has a tendency (in the form of an intention) that is neither

for nor against the result. Let us take an example. Say that some people want to set up a small yard sale in their neighbourhood. The mayor could prevent them from doing it: he has authority over what is happening in his town. But it is a small town, and everyone knows everyone, so this should not pose any problem. The mayor will not get anything out of it himself, therefore, he has nothing to gain by allowing it nor by preventing it. In short, he simply does not care whether the yard sale takes place or not. By virtue of being a mayor, he has authority over (i) his constituents and (ii) whether the yard sale occurs or not. This is why his intention towards the yard sale matters: if he is in favour of it, it will take place. If he opposes it, it will not. If he is indifferent to it, the occurrence of the yard sale will depend on some other factor (e.g whether the inhabitants of the neighbourhood intend for it to occur or not). The indifference relation is summed up in **Table 2** below:[8]

I_p	E		$I_{\neg p}$	E
1	1		1	0
0	{0,1}		0	{0,1}

Table 2: The indifference "influence".
I_p = whether the mayor has an intention towards p
$I_{\neg p}$ = whether the mayor has an intention towards $\neg p$
E = whether the yard sale takes place

In short, the two bottom rows can be expressed through a *laisser*-causative such as the following one:

(25) Le maire a laissé ses administrés organiser un vide-grenier.
The mayor has let his constituents organise a yard-sale
'The mayor let his constituents organise a yard sale.'

At first glance, it is unclear why a volitional entity who is indifferent (hence does not position themselves for or against a given result) would be fit to receive the role of Causer in a syntactic causative such as (25). Indeed, Causers of syntactic causatives are taken to have control over both causing and caused event. Therefore, we expect the Causer of a *laisser*-causative to **influence** the result, even when she is not directly responsible for it. What is highlighted by the data in **Table 2**, however, is that entities that are indifferent to the result fail to influence it. This mirrors the discussion in section 3.2 above: the (non-)intervention of the Causer seems to be neither necessary nor sufficient, or, in more trivial terms, "useless".

What makes the mayor able to receive the role of Causer is his being the holder of preventing properties: he possesses authority over his constituents through his position as mayor. As such, he could prevent the yard sale from occurring, yet he does not. In sum, he acts as a would-be

[8] The curly bracket notation indicates that both values can be available, depending on which of the two influence "wins".

preventer for the occurrence of the yard sale. This example is not an isolated one, and the would-be prevention requirement is not forced by this specific scenario in which there is an authority asymmetry between the mayor and its constituents. In fact, Donazzan & Raffy & von Heusinger (2020); Raffy (2021); Donazzan et al. (2023) all point out that the French verb *laisser* in syntactic causatives requires for its Causer to be would-be preventer for the event encoded by the embedded verb. Any entity that does not have the relevant preventing properties is infelicitous as a subject of a *laisser*-causative. Obviously, the notion of would-be preventer can be applied more loosely to volitional entities, as they have free will and can choose to prevent events from occurring or interrupt ongoing events. Therefore, what makes the would-be prevention component salient is indifference: there is an expectation that those entities should act, or could act, to prevent the result, and yet they do not. In the following section, I show that indifference is crucial in order to (i) understand *laisser*-relations and (ii) define LET as a causal notion that is distinct from ENABLE: adding indifference to our causal modelling allows for a more fine-grained categorisation of "permissive verbs".

4 A causal-model representation for LET

4.1 Causal models: some basic notions

Unlike the theories discussed above, causal models are not part of a particular approach to causation; rather, they are formal representations of causal relations. Causal models, in the framework developed by Judea Pearl (Pearl 2000; Pearl & Mackenzie 2018), consist of *structural causal models* (SCMs), which combine graphical and functional components to represent how variables influence each other. These models are typically represented as directed acyclic graphs (DAGs) depicting causal influences. The DAG structure is made up of nodes representing variables (each corresponding to a proposition) and edges (or arrows) that express direct causal dependence between variables. In this framework, variables are classified as exogenous or endogenous. Exogenous variables, which have no incoming arrows, are determined by background factors outside the model and are treated as independent. In contrast, the value of endogenous variables depends on the values of other variables: each such variable is associated with a function that determines its value based on those of its parent variables (i.e., the variables with arrows pointing to it, see Halpern & Pearl (2005)). This functional structure captures the underlying causal mechanisms and enables the model to evaluate how the system responds under different conditions. Thus, the values of the nodes are not static but can vary depending on the specific configuration of the model, allowing one to reason about interventions and counterfactual scenarios. Let us take a real-life example to make this clearer. When it is sunny outside, one generally puts their clothes out to dry them faster, because the warmth from the sun causes the moisture from the wash to evaporate. Therefore, if it is sunny (S), my clothes will get dry (C), hence $S \rightarrow C$. This causal relation is represented in **Figure 1**.

Figure 1: A model for *sun drying*.
S = whether it is sunny
C = whether my clothes get dry

In the model above, the node S is exogenous, since it is not influenced by another variable. Although it is clear that there are causes for sunny weather, these causes are not causally relevant to the situation depicted in the model. Conversely, node C is endogenous: its value is set by that of S, because whether it is sunny or not matters for whether my clothes will get dry. In other words, if $S = 1$, then $C = 1$, and if $S = 0$, then $C = 0$.

Now that the models have been clearer, and since they are perfect for representing causal concepts, let us apply them to a typical ENABLE situation. Say that I want to represent the sentence in (26) below, which encodes a situation in which users would simply not be able to share their opinions on the platform if this was not an available feature of the website. In order to represent this situation accurately, we need at least three nodes: (i) whether the platform possesses an option to let users post comments, (ii) whether users intend to share their opinions, and (iii) whether users do share their opinions. What we are interested in here is how these nodes interact with each other.

(26) Cette plateforme permet aux utilisateurs de partager leurs opinions.'
this platform allows to-the users to share their opinions
'This platform allows users to share their opinions.'

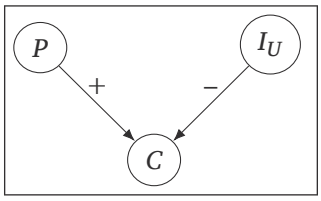

Figure 2: Representing (26).
P = whether platform enables comments
I_U = whether users intend to comment
C = whether users comment

The model in **Figure 2** is a *collider*: the result node C acts as a collider in that it is influenced by at least two other nodes, here P and I_U. In this model, both P and I_U have a stimulatory influence, and both are **necessary** for the occurrence of the result. If the platform enables comments but users do not intend to comment, then they will not be commenting. Similarly, if users intend to comment but this is not an available option on the platform they are using, then they will not be

able to share their opinions on that very platform. As we have seen above, this means that the value of C should depend on that of both P and I_U. This is summed up in the truth-table below in **Table 10**.

P	I_U	C
1	1	1
1	0	0
0	1	0
0	0	0

Table 3: Truth-table for the model in **Figure 2**.

The data in **Table 3** actually supports the observations previously made in section 3.1: in ENABLE relations, the intervention of the Causer is necessary for the result. If $P = 0$, then $C = 0$, regardless of the value of I_U. This means that, if P is set to 1, it "wins" by setting the value of C to 1. This means that P is **efficacious** for C (Copley 2005; Copley & Harley 2015). Copley (2021) defines efficacy as follows: "*efficacious*(A, E) iff A $\rightarrow$ E is in the model, and the value of $f_{\overrightarrow{AE}}$(A) in the model is the value of E in the world". Therefore, the notion of efficacy can be used to describe the participation of the Causer to the causal relation in ENABLE situations.

Now that the functioning of causal models has been made clearer, and that the different types of influences have been addressed, these devices can be put to work to provide an accurate representation for LET.

4.2 Addressing the LET issue

4.2.1 Criteria for LET

This section builds on the preceding discussions of causation by omission and *laisser*-causatives to identify a set of criteria for modeling the semantics of LET. Before introducing these criteria, it is important to clarify the limits of existing causal modeling frameworks. Pearl's graphs, while powerful tools for representing patterns of influence (comparable to artificial neural networks) are not designed to capture the psychological or conceptual dimensions of causation. I have argued above that the felicity *laisser*-causatives relied on perceived, or assumed, properties ascribed to the Causer. Therefore, this limitation is significant, as such models struggle to accommodate distinctions between agents and causers, or to represent temporal structures, which are features that are fundamental to our intuitive understanding of causal relations. The criteria, and the ensuing model, seek to fix these shortcomings.

Firstly, *laisser* requires a would-be preventer as its subject, i.e, an entity (animate or not) that possesses properties that are relevant to prevent the result from occurring. This means that the notion of (possible) prevention must appear somewhere in our model for *laisser*-relations:

let us call this the **Prevention criterion**. The second factor that must be taken into account is that the Causee of *laisser*-relations is able to bring about the result on her own; while the two forces are needed in ENABLE-relations, the Causee can be responsible for it on her own in *laisser*-relations. We can go even further and say that the Causee can go **against** the Causer's tendency and still bring about the result. This shows that the Causer's tendency does not influence that of the Causee's, which must be shown by the model: this is the **No-Influence criterion**. The last factor concerns the structure of *laisser*-causatives. Despite the apparent "uselessness" of the Causer, which does not appear to have as much control on the result as she does in other types of causal relations, it would be counterproductive to remove the node representing the Causer's force from our model. Firstly, removing the Causer's node would not be faithful to the morphosyntax of *laisser*-causatives. Secondly, it would remove part of the core meaning of *laisser*-relations; it is clear that uttering (27b) does not carry the same weight as uttering (27a).

(27) a. Sidonie a laissé Marc regarder *Gossip Girl*.
Sidonie has let Marc watch *Gossip Girl*
'Sidonie let Marc watch *Gossip Girl*.'
b. Marc a regardé *Gossip Girl*.
Marc has watched *Gossip Girl*
'Marc watched *Gossip Girl*.'

The very reason behind that is that getting rid of the Causer removes two key components of *laisser*-relations: would-be prevention and indifference. Therefore, an accurate model for a given *laisser*-relation ought to remain as faithful as possible to the syntax of the corresponding *laisser*-sentence. This is the **Fidelity criterion**.

(28) Criteria for representing *laisser*-relations

- **Fidelity criterion**: the model should remain faithful to the syntax, as far as possible: it ought to contain *at least* three nodes: one for the Causer's force, another for the Causee's, and one for the result.
- **Prevention criterion**: the notion of (would-be) prevention must be included and visible in the model.
- **No-influence criterion**: the model must represent the lack of influence the Causer has on both the Causee and on the result, in order to represent **indifference**.

The whole issue of the representation of *laisser*-relations lies within the two criteria: how do we represent an influence that (i) could be inhibitory but is not, and (ii) is not stimulatory either? We have seen above that this is what went wrong with the various previous approaches. The proposed model for LET must therefore stray from current, existing frameworks.

4.2.2 Building the model

In this section, I propose a general model for LET as a causal notion. In other words, I will not be treating here the subnotions of *authorise* and *not-intervene*, considering it has already been established in sections 2.2 and 3.3 that the two construals shared the same core combination of would-be prevention with indifference. Let us use the sentence in (16) (repeated as (29) below) as a basis for the model:

(29) Mar a laissé David chanter.
Mar has let David sing
'Mar let David sing.'

Recall that there is an apparent clash between the Prevention criterion and the No-influence criterion: current causal models like Pearl's cannot represent possible influences. We circle back to our initial conundrum: how do we account for the mismatch between "true" causation and "perceived" (hence expressed) causation? Besides, causal models also lack the tools to represent influences that are neither stimulatory nor inhibitory. Representing the Causer's "influence" (or lack thereof) is thus going to be the challenge to be tackled.

Here, three possible routes can be taken. The first route, represented below in **Table 4**, is to treat the variable of the Causer's tendency as having three possible values: +1 if Mar has a strong intention for David to dance, 0 if she is indifferent, and –1 if she really strongly opposes David's singing.

I_M	I_D	S
+1	1	1
+1	0	0
0	0	0
–1	1	{0,1}
–1	0	0

Table 4: Three-valued logic for Causer's intention in (16).
I_J = whether Mar intends for David to sing
I_M = whether David intends to sing
R = whether David sings

Creating a third value that is different from +1 for ENABLE and –1 for PREVENT allows the integration of the notion of indifference, encoded by LET. However, this does not provide any help with how this node, when set to 0, interacts with the other nodes (which is shown by the similarity between the three sets of rows). Additionally, it does not allow us to represent would-be prevention: the variable being set to 0 does not by default entail that the Causer possesses preventing properties. This route is therefore ruled out.

The second route arises from the observation that the Causee *can* still pick a different course of action in *laisser*-relations, even when the Causer appears to be exerting a prevention, as examplified in (30) below. Conversely, such an option does not seem to be available for the relation(s) encoded by the causative verb *empêcher* 'to prevent', as in (31). This could be taken as a hint that the negation of *laisser* encodes some form of weaker prevention.

(30) Jean ne laisse pas Marie danser, alors elle le fait en cachette.
Jean NEG lets NEG Marie dance so she it does in hiding
'Jean does not let Mary dance, so she does it on the sly.'

(31) ??Jean empêche Marie de danser, alors elle le fait en cachette.
Jean prevents Marie to dance so she it does in hiding
'Jean prevents Marie from dancing, so she does it on the sly.'

If Jean decides to reward Marie by giving him permission to dance at t_0, then the permission must still be standing at t_1 when Marie starts dancing, else she will be misbehaving (which, as a reminder, she can still choose to do). If we assume that Marie is generally honest and will respect Jean's decision either way, then Marie dancing is more likely to happen with Jean's permission than it is *without* it.

As seen in section 3.2 above, some previous approaches to causation have attempted to categorise causes in terms of *sufficiency* and *necessity* (Mackie 1965; Lauer & Nadathur 2018; Baglini & Siegal 2020; 2021). As a reminder, these terms fail to describe accurately the Causer's force in *laisser*-relations, as it would be categorised as both insufficient and unnecessary. Fischer (2005: 284) proposes that "an unnecessary and insufficient force or condition is a cause of an injury if it joins with other forces or conditions to cause an injury." While he is talking about law and the justice system, perhaps his proposal can be adapted to our *laisser* cases. The approach taken by Baglini & Siegal (2020; 2021) is to treat periphrastic causatives using Mackie's (1965) INUS condition: Insufficient but Necessary part of an Unnecessary but Sufficient set. They propose that causal sufficiency is a property of sets conditions rather than of individual conditions. If we assume a joint set that contains Marie's intention to read and Jean's lack of a prevention (intention not to prevent?), then this set is sufficient for the occurrence of the reading event. I will not be pursuing this approach here, as I do not think it will fully allow us (or at least, not as far as I know) to represent the notion of indifference that, I believe, is crucial to letting.

The last route is inspired by Talmy's representation of *onset letting* (Talmy 1988), which he defines as a situation of *cessation of impingement*, or, in other words, removal of a blocking. In such a situation, the Causer's (or Antagonist's) force is removed, which allows the Causee (Agonist) to proceed with her tendency. Talmy illustrates it with the following sentence, which is pictured in the diagram in **Figure 3**.

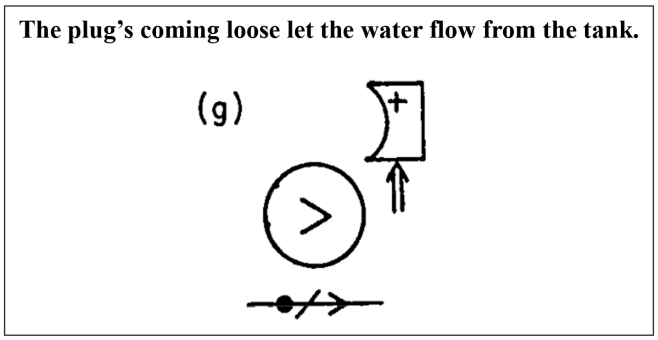

Figure 3: Onset letting for Talmy (1988: 57).

When examplifying his diagrams, Talmy (1988) did not use sentient entities, as they are presumably harder to deal with. However, many of his diagrams can be used with a few small amendments to describe causal relations between Agents. Based on Talmy's insight for *cessation of impingement*, we can now represent LET. In his diagram, Talmy shows that the blocking (what I have referred to as a prevention) is being removed. The blocking and the removal can be operated by the same entity (in cases of intra-psychological causation, for instance) or by two separate entities, it does not matter for Talmy. In our *laisser*-cases, the removal of the blocking is done by the Causer. The prevention, however, might be a pre-existing one (e.g the law) or can have been exerted by the Causer himself up until the letting started (mostly true in *authorise* cases). Therefore, one node representing the standing prevention must be added, in order to account for cases in which they are embodied by two distinct entities. The Causer removes the standing prevention, which erases the arrow from the node representing the prevention to the Causee's node. This means that the Causee's node is now independent, and the result node depends only on the value of the Causee's node.

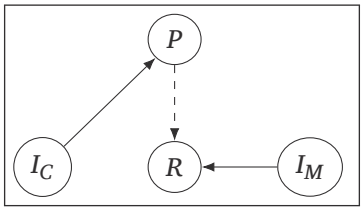

Figure 4: Representing (16) – take 1.
P = whether a standing prevention is exerted
I_C = whether Mar removes the prevention
I_e = whether David intends to sing
E = whether David sings

This appears to be the right thing to do: (i) all the nodes are present, and I_C influences R through P (in an indirect way, since the arrow is erased), which satisfies the Fidelity criterion, (ii) the prevention is represented by the node P, so the Prevention criterion is met, and (iii) I_M is

independent, R is freed from the direct influence of I_C, which both solves the influence asymmetry issue and fulfills the No-Influence criterion.

But if we were to do this, we would be rushing into things and forgetting the basic rules of causal modelling. Indeed, in a situation in which Mar lets David sing, the model in **Figure 4** could potentially work. As there is no law in France against singing, it is clear that the "standing prevention" would be a rule in Mar's household, hence created and enforced by Mar herself. Therefore, one could argue that Mar being indifferent to whether David sings or not is her cancelling her standing rule. But it is not quite so. Instead, she is *overruling* it through her letting, not discarding it. In order to make this clearer, let us take a look at an example from Raffy (2021), in which the prevention and the Causer are two separate entities:

(32) Le patron a laissé ses employés fumer à l'intérieur du batiment.
The boss has let his employees smoke at the-inside of-the building
'The boss let his employees smoke inside the building.'

Here, it is common knowledge that there is a law in the European Union that prevents people from smoking inside in public spaces. Therefore, the prevention is this European law. The Causer, on the other hand, is the boss. Say that the boss is indifferent to his employees smoking or not, and, as such, he suspends the standing prevention. His letting his employees smoke will not make the law against smoking disappear. Therefore, there cannot be an arrow from the Causer's node to the prevention node, because the value of the Causer's node simply cannot set that of the prevention node. The Causer's action is to be understood as removing (or at least strongly lessening) the influence the prevention has on the whether the result occurs or not. Therefore, the Causer's influence is not on the prevention, but on the **influence** the prevention has on the result. The resulting model, which I adopt in this paper, is the following in **Figure 5**:

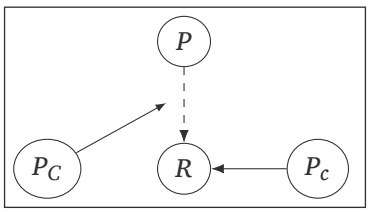

Figure 5: Causal model for *x laisse y p*.
P_C = whether Causer holds preventing properties
P = whether a standing prevention is exerted
P_c = whether Causee holds properties to bring about result
R = whether the result occurs

The indifference of the Causer is highly relevant in such situations: by being the holder of such an attitude, she frees the Causee from any existing inhibitory influence. She is able to

perform this removal of influences through her own preventing properties. As noted by Donazzan et al. (2023), this is particularly evident when the Causer is an authority figure and there is an authority imbalance between Causer and Causee. The term *would-be preventer* ought to be understood in two ways: not only can the Causer prevent the result from occurring by upholding the standing prevention (which is done through authority or abilities for an Agent, through preventing properties like dispositions in an inanimate object), but she can also prevent the standing prevention from applying. What this means for our model is that if the value of P_C is 0 (meaning that she is indifferent), then the arrow from P to R will be erased. If the value of P_C is set to 1 (i.e the Causer exerts a prevention), then the arrow remains, setting the values of R to 0, given that the Causee behaves. **Table 5** shows that all three criteria are satisfied.

	Fidelity	**Prevention**	**No-Influence**
Figure 4	✓	✓	✓

Table 5: Testing **Figure 4** against the three criteria.

These functions (or the ensuing relation) do not exist in traditional causal modelling, edges cannot generally point at other edges. We proceed somewhat in the spirit of Pearl (1993; 2009: 70–73) by treating "influencing an influence" as altering the *function* that corresponds to the arrow between P (the prevention node) and R (the result node). As a reminder, each arrow between two nodes is associated with a corresponding function. For instance, the arrow from P to R is associated with the function $f_{\overrightarrow{PR}}$, which is (without the intervention of P_C, the node representing the Causer's preventing properties) an inhibitory function, marked f–, and defined in **Table 6** below. In turn, this means that the arrow from P_C is a function that takes as arguments the value of P_C and the function $f_{\overrightarrow{PR}}$. Instead of giving out a value, it yields a relation, marked R_{indep}.

f–	
P	***R***
1	0
0	1

Table 6: Influence of P on R in the absence of P_C.

Recall that the brackets in the second table mean that the two values are still available for R, they are used as an abbreviation for OR. The relation R_{indep} should remind the reader of the "indifference influence" in **Table 2**. In short, what the data in **Table 7** tells us is that P does not influence the value of R anymore because R is made independent from P by the intervention of P_C. As such, the value of R does not depend on that of P anymore, which explains the curly-bracket

R_{indep}	
P	***R***
1	{0,1}
0	{0,1}

Table 7: Influence of P on R in the presence of P_C.

notation: both values might be available for R, depending on the value of the other variables it depends on (in **Figure 5**, that would be P_c). While it is likely that P would be efficacious for R in the absence of P_C, the influence of P_C has made P **unable to prevent**. Because the two variables are now independent from one another (and there is no remaining arrow between them), the relation between them cannot be treated as a function anymore. Even though it it still a relation, I will refer to the relation between P and R (noted PR) in the presence of P_C as R_{indep}: the **independence relation**. I make this explicit below in **Table 8**:

P_C	PR
1	R_{indep}
0	f–

Table 8: The independence relation.

What we have in **Table 8** is the function that *laisser* encodes. The inhibitory function from the node representing the properties of the Causer to that representing the event description is **erased** through the influence of a third variable.

5 Adapting the model to natural language data

As shown above in section 2.2.2, LET comes in two distinct flavours: *authorise* and *not-intervene*. In this section, I will attempt to provide proper definitions for *authorise* and *not-intervene*, accompanied by an adapted model for each reading, based on the model for general LET in **Figure 5**.

5.1 *Authorise*

My approach to *authorise* is based around the analysis made for authorise-*laisser* in Donazzan et al. (2023), discussed above in section 2.2. As a brief reminder, the authors propose that the Causer in authorise-*laisser* has authority over the Causee's set of alternatives; she could restrict that set but does not. I have argued above that the reason that she does not act on that set is because she is indifferent to the outcome. Nevertheless, what this entails is that the Causee has **free choice**

over her alternatives: she is not made to pick one or the other and can act according to her own tendencies (desires, beliefs, intentions, abilities). Therefore, an additional criterion must be added in order to represent authorise-*laisser*: the **Choice criterion**.

(33) Criteria for authorise-*laisser*

- **Fidelity criterion**: the model should remain faithful to the syntax, as far as possible: it ought to contain *at least* three nodes: one for the Causer's force, another for the Causee's, and one for the result.
- **Prevention criterion**: the notion of prevention (or possible prevention) must be included and visible in the model.
- **No-influence criterion**: the model must represent the lack of influence the Causer has on both the Causee and on the result, in order to represent indifference.
- **Choice criterion**: free choice and free will must be represented in the model for authorise.

We find that the model above in **Figure 5** perfectly fits these requirements without any need for further modification (see **Table 9**): the Causee's node, I_D, is completely exogenous, which means it is independent from any influence. Therefore, the Choice criterion is met. The authority of the Causer is represented by (i) the arrow coming out of P_J and pointing at the edge from P to S and (ii) the edge being made dashed by the Causer's indifference (i.e. P_J being set at 1). The (amended) Prevention criterion is therefore met as well.

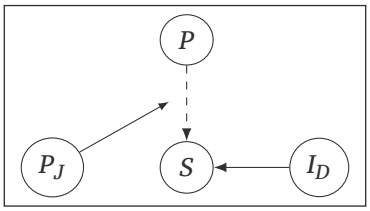

Figure 6: Causal model for authorise-*laisser*.
P_J = whether the judge holds **authority**
P = whether a prevention is actually exerted
I_D = whether the defendant intends to speak
S = whether the defendant speaks

Fidelity	Prevention	No-Influence	Free Choice
✓	✓	✓	✓

Table 9: Testing **Figure 6** against the three criteria.

5.2 Not-intervene

Let us turn to *not-intervene*. Recall that *not-intervene* refers to situations in which there is an ongoing event performed by the Causee that is not being interrupted by the Causer; in those cases, no alternative set is introduced, as the event is ongoing. This means that, while the question of free choice is not relevant for *not-intervene* (Donazzan et al. 2023), the issue here is that of the ongoingness of the caused event. Say that I utter the sentence in (34) with a *not-intervene* reading – the sentence can be paraphrased as (35), in which we find the periphrastic construction *en train de*, which encodes the progressive aspect.

(34) J'ai laissé ma cousine récolter des fruits dans mon jardin.
I-have let my cousin pick some fruits in my garden
'I let my cousin pick the fruits of my garden.'

(35) Ma cousine était en train de récolter des fruits dans mon jardin, et je ne
My cousin was in train of pick some fruits in my garden and I NEG
l'ai pas arrêtée.
it-have NEG stopped
'My cousin was picking some fruits in my garden and I did not stop her.'

The event encoded by the embedded predicate is already ongoing at *t* when the letting starts: they appear to be co-temporal rather than successive, unlike in *authorise* relations. In turn, this entails that the event cannot be prevented from happening but can be prevented from reaching its endpoint or culmination. Therefore, ongoingness must be added to the model.

(36) Criteria for not-intervene-*laisser*

- **Fidelity criterion**: the model should remain faithful to the syntax, as far as possible: it ought to contain *at least* three nodes: one for the Causer's force, another for the Causee's, and one for the result.
- **Prevention criterion**: the notion of prevention (or possible prevention) must be included and visible in the model.
- **No-influence criterion**: the model must represent the lack of influence the Causer has on both the Causee and on the result, in order to represent indifference.
- **Ongoingness criterion**: the model must represent the result node as encoding an ongoing event.

Applying the model for LET from **Figure 5** above to our configuration in **Figure 7** causes us to run into a problem with respect to the Ongoingness criterion. This problem arises because the most basic causal models we have been using do not represent time; therefore causal modelling

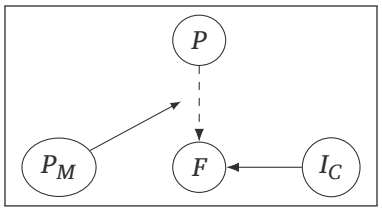

Figure 7: Tentative causal model for not-intervene-*laisser*.
P_M = whether I hold preventing properties
P = whether a prevention is actually exerted
I_C = whether my cousin intends to pick fruits
F = whether my cousin picks fruits in my garden

cannot represent aspect. For that reason, they can simply never satisfy the Ongoingness criterion. The most obvious way to go about representing scenario like that of (34) and (35) is to actually represent it as in **Figure 8** below, by treating the node as a constituent that is large enough to include aspect. In short, F is simply to be treated as F = whether my cousin is picking fruits.

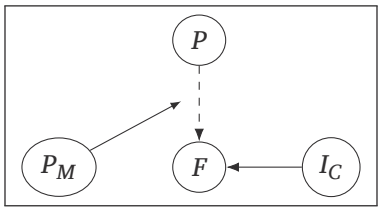

Figure 8: Final causal model for not-intervene-*laisser*.
P_M = whether I hold preventing properties
P = whether a prevention is actually exerted
I_C = whether my cousin intends to pick fruits in my garden
F = whether my cousin is picking fruits in my garden

This slight modification immediately repairs the model, which is now well-fitted for *not-intervene*.

5.3 Discussion

Such an approach allows us to account for any type of situation involving a would-be preventer. While I have exclusively spoken of volitional entities in this article, they are not the only ones that can enter *laisser*-causatives as Causers. Non-volitional, non-force-generating Causers are perfectly felicitous (exclusively) when the Causee is also non-volitional and non-force-generating.[9] Since the notion of indifference is restricted to agentive entities who can **choose** to act or not, it is obviously impossible to make it apply to constructions in which the Causer is not an Agent. The two questions that arise from this minor obstacle are the following: (i) do these constructions

[9] See Donazzan & Raffy & von Heusinger (2020): the Causee cannot be more agentive than the Causer.

behave in the same way as their agentive counterparts, and (ii) if they do, how can we account for them without using the notion of indifference?

Let us consider the relation encoded by the sentence in (37) below, taken from Donazzan et al. (2020: 67).

(37) Les rideaux laissent entrer la lumière.
the curtains let enter the light
'The curtains let light through.'

The involvement of Causers of non-agentive *laisser*-relations is the same as that of agentive ones. The curtains are not necessary for the light to enter the room, a window with no curtain would have yielded the exact same result. They are also not sufficient for the light to enter the room, as the light would have failed to filter through if the window was tinted, for instance. Therefore, we observe the same "uselessness" of the Causer in non-agentive *laisser*-causatives.[10] This fact leads us to expect that this apparent uselessness is actually a case of would-be prevention: the Causer possesses properties (that are not actualised) that are relevant for preventing the result. This leads us to our second question: what is encoded by the sentence in (37) is not that these curtains have the property to let light through. Instead, what is implied is that those curtains should **not** let light through, and yet they do. This is possible strictly because curtains are artefacts, and there are given expectations on artefact kinds. According to Thomasson (2003), artefacts, being man-made, come with built-in intentions. In other words, all objects of the same kind are expected to serve the same purpose since they were produced with the same intention in mind. In order to serve this purpose, they are created with a given set of properties relevant to their kind, which Thomasson calls 'K-relevant properties' (2003: 600). Curtains may typically serve two purposes: they may be decorative, or they can be used to block light. If the curtains are designed with the built-in intention for them to be decorative, then the only K-relevant properties that they may have are for them to be pretty or trendy (which is overall fairly subjective). On the other hand, if they are

[10] One reviewer very justly pointed out that these examples slightly differ from their counterparts with animate Causer-Causee pairs, because inanimate entities do not have free will and cannot choose any other course of action than what they are disposed to do. As such, the occurrence of the result is not defeasible *unless* a third entity gets involved, as in the following pair of sentences:

(i) a. #Les rideaux laissent passer la lumière, mais elle ne passe pas.
'The curtains let light through but it does not go through.'
b. Les rideaux laissent passer la lumière mais elle ne passe pas car la vitre est teintée.
'The curtains let light through but it does not pass through because the glass is tinted.'

While this is a very important point that will require further research, I do not believe this is an issue *per se* for the current analysis: regarding (ia), the correlation between agenthood and non-culmination for causatives has been observed in the literature before (see Martin 2015 for a clear overview), *laisser* simply seems to follow the pattern. As for (ib), representing it would require the addition of an extra force in the existing model, presumably one that would cancel out R_{indep}.

meant to block light, then the main property that they should possess is that of being opaque. It is clear that the curtains in (37) are not the decorative kind, as there is no sort of connection between being pretty and letting light through. Conversely, their opacity (or lack thereof) is what is at stake here: there is an expectation that they ought to block light, and yet they fail to do so.

What is being expressed here through the *laisser*-construction is a mismatch between an ideal world in which artefacts are perfect instances of the kind that they belong to and the real world in which artefacts can be defective. The expectation of the speaker with respect to the Causer is just not met; as such, Causers of non-agentive *laisser*-causatives are not would-be preventers, they are **should-be preventers**. They nevertheless fit the definition for normality in McGrath (2005), as one can consider that it would be normal for curtains to block light (since it is a K-relevant property of the kind curtain), and this specific curtain acts abnormally.

Therefore, I believe this model can be used to represent **any** situation of causation by omission. Let us conclude by revisiting our roast example from the introduction in (1), repeated below in (38):

(38) Mon ami a laissé mon rôti brûler !
my friend has let my roast burn.INF
'My friend let my roast burn.'

I have treated LET as encoding situations introducing a comparison between the actual world and an ideal world in which entities behaved according to the speaker's expectations. What *laisser* does is underline the mismatch between these two worlds. This mirrors the notion of normality as defined by McGrath (2005): there are expectations for entities to behave a given way, which is what she calls *normally*. If they stray from such expectations, they become Causers because they are abnormal.

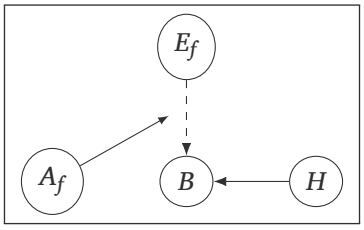

Figure 9: A general model for causation by omission.
A_f = whether my friend prevents the roast from burning
E_f = whether it is normal for my friend to turn the oven off
I_C = whether heat is applied to the roast
B = whether the roast burns

The function from A_f to the (non-)function from E_f to B represents this mismatch between the ideal world and the actual world. By making B independent from E_f, A_f sets it to be influenced

solely by *H*. In other words, the only "real" reason why my food is burning is because heat is being applied to it even though it is already cooked. If heat was no longer applied to it (say, because my oven broke in the middle of cooking it), then my friend's forgetting would not matter anymore because there would be no result.

A_f	E_f	B
1	1	{0,1}
1	0	×
0	1	0
0	0	×

Table 10: Truth-table for the model in **Figure 9**.

Let us take a closer look at **Table 10**: the two rows in which *B* is receives no value (marked ×) are rows in which there is no expectation for on my friend to turn off the oven: a sentence like (38) simply cannot be true if such an expectation did not exist. The results for the two remaining rows are explained easily using the data for the influence relation from **Table 8**. When my friend does not forget to turn the oven off ($A_f = 0$), then the inhibitory function *f*– from E_f to *B* applies: my friend turns the oven off as expected and the roast does not burn. On the other hand, when my friend does forget to turn the oven off even though it would be normal for him to do so, then the independence relation R_{indep} applies; whether the burning of the roast occurs or not is now solely dependent on an outside factor (here, whether heat is applied to my roast or not). This means that causation by omission and LET as a causal notion are actually one and the same.

6 Conclusion

This discussion about *laisser*-causatives and LET brings out two main points. Firstly, it allows us to state that causation by omission actually exist (at the very least, if anything, in the perception of speakers of natural languages such as French). Secondly, the type of causation by omission encoded by LET-relations differs from the canonical ENABLE type that has been previously depicted in force-theoretical approaches to the topic; while ENABLE-relations *may* be cases of causation by omission, LET-relation **must** be. Either this means that causation by omission comes in different flavours, or this means that is has been misunderstood and, perhaps, misrepresented. Either way, it seems to be is more complex than initially expected.

What we are dealing with in LET-relations and, by the same token, with situations of causation by omission, is not the cancellation of an actual prevention; instead, we have the speaker's expression of her perception of a relation in which there is a possible prevention that is simply never actualised. This is where indifference comes into play: the Causer never actually acts and

yet she is still deemed responsible for the causal relation under discussion. This means that, when dealing with the linguistic expression of causal construals, **perception matters**, potentially more than actual laws of physics. This entails that the speaker possesses some knowledge about both Causer and Causee that allows her to make such inferences. Either it is her knowledge of the world and of social conventions that plays a role in her understanding (e.g. with obvious authority relations such as judge vs. defendant), or she makes assumptions based on expectations over some specific entities. The only reason the Causer does not use her preventing properties on the caused event is because she is **indifferent** to whether it actually occurs or not. Therefore, the Causer of *laisser*-relations never actually influences the event encoded by the embedded verb; by being indifferent and setting her node to 1, she prevents any possible or existing prevention from applying on the caused event.

To conclude, I have shown that using *laisser*-causatives as a basis for building the new model was a way to uncover a gap in knowledge when it comes to our understanding of causation by omission. While one could have expected the notion of double prevention in the sense of Wolff & Thorstad (2017) to be fit to account for all types of causation by omission, it highlights instead that causation by omission can in no way be taken to be similar to ENABLE. Therefore, the creation of a distinct causal notion, that of LET, is required to accurately describe relations that are deemed causal by speakers of natural languages.

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Competing interests

The author has no competing interests to declare.

References

Baglini, Rebekah & Siegal, Elitzur Bar-Asher. 2020. Direct causation: A new approach to an old question. *University of Pennsylvania Working Papers in Linguistics* 26(1). 4.

Baglini, Rebekah & Siegal, Elitzur Bar-Asher. 2021. Modelling linguistic causation. *Manuscript, Aarhus University and Hebrew University of Jerusalem*.

Borel, Maurice. 1972. *Sémantique des factitives en français*. Paris 8 MA thesis.

Butt, Miriam. 1995. *The structure of complex predicates in Urdu*. Center for the Study of Language.

Butt, Miriam. 2010. The light verb jungle: Still hacking away. *Complex Predicates in Cross-Linguistic Perspective*, 48–78. DOI: https://doi.org/10.1017/CBO9780511712234.004

Carnes, Nate & Janoff-Bulman, Ronnie. 2012. Harm, help, and the native of (im)moral (in)action. *Psychological Inquiry* 23(2). 137–142. DOI: https://doi.org/10.1080/1047840X.2012.667768

Cheng, Patricia & Novick, Laura. 1991. Causes versus enabling conditions. *Cognition* 40(1–2). 83–120. DOI: https://doi.org/10.1016/0010-0277(91)90047-8

Cheng, Patricia & Novick, Laura. 1992. Covariation in natural causal induction. *Psychological Review* 99(2). 365. DOI: https://doi.org/10.1037/0033-295X.99.2.365

Ciutescu, Elena. 2019. *Defective causative and perception verb constructions in Romance: a minimalist approach to infinitival and subjunctive clauses*.

Copley, Bridget. 2005. When the actual world isn't inertial: Tohono O'odham cem. *Proceedings of SULA* 3. 1–18.

Copley, Bridget. 2021. Tools for non-triviality. Paper presented at *COCOA online workshop*, 10 June 2021.

Copley, Bridget & Harley, Heidi. 2015. A force-theoretic framework for event structure. *Linguistics and Philosophy* 38(2). 103–158. DOI: https://doi.org/10.1007/s10988-015-9168-x

Copley, Bridget & Harley, Heidi. 2019. What would it take to tame the verbal hydra? In *University of Toronto Syntax Group*.

Copley, Bridget & Wolff, Phillip & Shepard, Jason. 2016. Force interaction in the expression of causation. In *Semantics and linguistic theory*, vol. 25, 433–451. DOI: https://doi.org/10.3765/salt.v25i0.3482

Damourette, Jacques & Pichon, Edouard. 1911. *Des mots à la pensée*. CNRS, Éditions d'Artrey.

Davidson, Donald. 1969. The individuation of events. In *Essays in honor of Carl G. Hempel: A tribute on the occasion of his sixty-fifth birthday*, 216–234. Springer. DOI: https://doi.org/10.1007/978-94-017-1466-2_11

Donazzan, Marta & Raffy, Clémentine & Copley, Bridget & von Heusinger, Klaus. 2023. Letting structure speak with authority: Constraining agents' choices with French laisser. In *Agency and Intentions in Language*, 88–111. Brill. DOI: https://doi.org/10.1163/9789004679818_006

Donazzan, Marta & Raffy, Clémentine & von Heusinger, Klaus. 2020. Causation and Dispositions: Towards a semantic characterisation for the French causative verb "laisser". *Bucharest Working Papers in Linguistics*. DOI: https://doi.org/10.31178/BWPL.22.2.3

Dowty, David. 1979. *Word meaning and Montague grammar: The semantics of verbs and times in generative semantics and in Montague's PTQ*. Vol. 7. Springer Science & Business Media. DOI: https://doi.org/10.1007/978-94-009-9473-7

Enghels, Renata & Roegiest, Eugeen. 2012. Los verbos de causaciòn negativa dejar y laisser: sintaxis y polisemia. In *Aspectualidad, transitividad y referencialidad: las lenguas románicas en contraste*, vol. 36. Peter Lang.

Enghels, Renata & Roegiest, Eugeen. 2014. Contrasting the syntax and semantics of negative causation: The apparent similarity of Spanish and Portuguese. *Languages in Contrast* 14(2). 278–305. DOI: https://doi.org/10.1075/lic.14.2.05eng

Fábregas, Antonio & González Rodríguez, Raquel. 2020. On inhibited eventualities. *Natural Language & Linguistic Theory* 38. 729–773. DOI: https://doi.org/10.1007/s11049-019-09461-y

Fischer, David A. 2005. Insufficient causes. *Kentucky Law Journal* 94. 277.

Folli, Raffaella & Harley, Heidi. 2007. Causation, obligation, and argument structure: On the nature of little v. *Linguistic Inquiry* 38(2). 197–238. DOI: https://doi.org/10.1162/ling.2007.38.2.197

Guasti, Maria Teresa. 1996. Semantic restrictions in Romance causatives and the incorporation approach. *Linguistic Inquiry*, 294–313.

Halpern, Joseph Yehuda & Pearl, Judea. 2005. Causes and explanations: A structural-model approach. Part I: Causes. *The British Journal for the Philosophy of Science*. https://doi.org/10.48550/arXiv.1301.2275

Hart, Herbert Lionel Adolphus & Honoré, Tony. 1985. *Causation in the law*. Oxford Univerty Press. DOI: https://doi.org/10.1093/acprof:oso/9780198254744.001.0001

Kayne, Richard S. 1975. *French syntax: The transformational cycle*. Vol. 30. MIT Press Cambridge, MA.

Knittel, Marie-Laurence. 2017. *Les noms nus dans une typologie des objets déficients du français*.

Knobe, Joshua. 2003. Intentional action in folk psychology: An experimental investigation. *Philosophical Psychology* 16(2). 309–324. DOI: https://doi.org/10.1080/09515080307771

Knobe, Joshua. 2004. Intention, intentional action and moral considerations. *Analysis* 64(2). 181–187. DOI: https://doi.org/10.1111/j.1467-8284.2004.00481.x

Knobe, Joshua & Fraser, Ben. 2008. Causal judgment and moral judgment: Two experiments. *Moral Psychology* 2. 441–447.

Lauer, Sven & Nadathur, Prerna. 2018. Sufficiency causatives. *Manuscript, University of Konstanz and Stanford University*.

Lewis, David. 1974. Causation. *The journal of Philosophy* 70(17). 556–567. DOI: https://doi.org/10.2307/2025310

Mackie, John Leslie. 1965. Causes and conditions. *American Philosophical Quarterly* 2(4). 245–264.

Mackie, John Leslie. 1974. *The cement of the universe: A study of causation*. Oxford: Clarendon Press. DOI: https://doi.org/10.1093/0198246420.001.0001

Maienborn, Claudia. 2005. On the limits of the Davidsonian approach: The case of copula sentences. *Theoretical Linguistics* 31(3). 275–316. DOI: https://doi.org/10.1515/thli.2005.31.3.275

Martin, Fabienne. 2015. Explaining the link between agentivity and non-culminating causation. In *Semantics and linguistic theory*, 246–266. DOI: https://doi.org/10.3765/salt.v25i0.3060

McGrath, Sarah. 2005. Causation by omission: A dilemma. *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition* 123(1/2). 125–148. DOI: https://doi.org/10.1007/s11098-004-5216-z

Nadathur, Prerna & Lauer, Sven. 2020. Causal necessity, causal sufficiency, and the implications of causative verbs. *Glossa* 5(1). DOI: https://doi.org/10.5334/gjgl.497

Pearl, Judea. 1993. [Bayesian analysis in expert systems]: Comment: Graphical models, causality and intervention. *Statistical Science* 8(3). 266–269. DOI: https://doi.org/10.1214/ss/1177010891

Pearl, Judea. 2000. *Models, reasoning and inference*. Vol. 19. Cambridge University Press.

Pearl, Judea. 2009. *Causality*. Cambridge University Press.

Pearl, Judea & Mackenzie, Dana. 2018. *The book of why: The new science of cause and effect*. Penguin Science.

Raffy, Clémentine. 2021. *Letting in Romance*. Université Paris 8; Universität zu Köln dissertation.

Raffy, Clémentine & Donazzan, Marta & von Heusinger, Klaus. 2024. The syntax and semantics of laisser in causative constructions: An experimental investigation. *Isogloss. Open Journal of Romance Linguistics* 10(4). 1–39. DOI: https://doi.org/10.5565/rev/isogloss.320

Silva, Augusto Soares da. 2012. Stages of grammaticalization of causative verbs and constructions in Portuguese, Spanish, French and Italian. *Folia Linguistica* 46(2). 513–552. DOI: https://doi.org/10.1515/flin.2012.018

Stockwell, Robert P. & Schachter, Paul & Partee, Barbara Hall. 1973. *The major syntactic structures of English*. Holt, Rinehart & Winston.

Talmy, Leonard. 1988. Force dynamics in language and cognition. *Cognitive Science* 12(1). 49–100. DOI: https://doi.org/10.1016/0364-0213(88)90008-0

Thomasson, Amie L. 2003. Realism and human kinds. *Philosophy and Phenomenological Research* 67(3). 580–609. DOI: https://doi.org/10.1111/j.1933-1592.2003.tb00309.x

Verschueren, Niki & Schroyens, Walter & Schaeken, Walter & d'Ydewalle, Gery. 2004. The interpretation of the concepts 'necessity'and 'sufficiency'in forward unicausal relations. *Current Psychology Letters* 3(14). DOI: https://doi.org/10.4000/cpl.433

Wolff, Phillip. 2007. Representing causation. *Journal of Experimental Psychology: General* 136(1). 82. DOI: https://doi.org/10.1037/0096-3445.136.1.82

Wolff, Phillip. 2008. Dynamics and the perception of causal events. DOI: https://doi.org/10.1093/acprof:oso/9780195188370.003.0023

Wolff, Phillip. 2012. Representing verbs with force vectors. *Theoretical Linguistics* 38(3–4). 237–248. DOI: https://doi.org/10.1515/tl-2012-0015

Wolff, Phillip & Jeon, Ga-hyun & Klettke, Bianca & Li, Yu. 2010. Force creation and possible causers across languages. In *Oxford University Press Oxford. Chap. Force creation and possible causers across languages*, 93–110. DOI: https://doi.org/10.1093/acprof:oso/9780195311129.003.0006

Wolff, Phillip & Song, Grace. 2003. Models of causation and the semantics of causal verbs. *Cognitive Psychology* 47(3). 276–332. DOI: https://doi.org/10.1016/S0010-0285(03)00036-7

Wolff, Phillip & Song, Grace & Driscoll, David. 2002. Models of causation and causal verbs. In *Papers from the 37th meeting of the Chicago Linguistics Society, Main session*, vol. 1, 607–622.

Wolff, Phillip & Thorstad, Robert. 2017. Force dynamics. *The Oxford handbook of causal reasoning*. 147–167. DOI: https://doi.org/10.1093/oxfordhb/9780199399550.001.0001