The incausality of *dennoch* and *trotzdem*: Generic Contrast

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Abstract. In this paper, I suggest an adaptation of the incausality implicature ascribed to 'concessive' contrast with discourse connectives such as German *dennoch* ('however') and *trotzdem* ('nevertheless'). Based on both, theoretical considerations and empirical data, I will argue that this contrast involves a generalization: a generic operator GEN (cf. Krifka et al., 1995) in the conventional implicature generalizes over variables in the asserted conjuncts. The introduction of the generic operator in the inference does not only provide insights on the close relation between properties of generic sentences and the concessive interpretation, it also allows for a consolidation of prevalent approaches to contrast with *dennoch* and *trotzdem* in the previous literature.

Keywords: contrast, concessive, discourse connectives, incausality, genericity, German.

1. Introduction

The German discourse connectives *dennoch* ('however') and *trotzdem* ('nevertheless') elicit a very particular kind of contrast. While the asyndetic connection in (1a) does not provide a contrast between the raining-situation and us going for a walk, the use of either connective in (1b) does. The particularity of this contrast is that it involves a background assumption, i.e. inference, that the rain would have been a reason for us not to go for a walk. This inference, which is also induced by other contrastive connectives – cf. one use of German *aber* ('but') as in (1c) or the subordinating *obwohl* ('although') in (1d) –, has kept linguists busy for at least five decades now. The core issues of this research concern the distinction of different kinds of contrast as with *but* and *aber* (e.g. Lakoff, 1971; Rudolph, 1996; Malchukov, 2004) in general, and the nature of the inference involved with contrast such as in (1b-d) in particular.

(1) a. Es regnet. Wir gehen spazieren.
('It is raining. We're going for a walk.')
b. Es regnet. Wir gehen **dennoch**/**trotzdem** spazieren.
c. Es regnet, **aber** wir gehen spazieren.
d. **Obwohl** es regnet, gehen wir spazieren.

The aim of this paper is to contribute to the latter issue: How can we capture the very specific nature of the inference invoked by *dennoch* and *trotzdem*?[1] While prevalent approaches in the literature can account for the intuition that there is an underlying expectation ('denial-of-expectation' approach; e.g. Rudolph, 1996; Lang, 2004) and the observation that this inferred contrastive relation shares formal features with causality ('incausality' approach; e.g. König, 1991; Umbach, 2005), something seems to be missing. Both approaches fail to account for observations such as in (2): If *dennoch* and *trotzdem* elicit the inference that an expectation is denied (i.e. that Peter normally should work efficiently in (2)) or that there is an incausality

[1] While this work focusses on *dennoch* and *trotzdem*, I consider the findings relevant for other 'concessive' connectives as well, such as equivalent uses of *but* or *aber* and *obwohl*/*although* shown in (1).

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(i.e. that it is not the case that Peter being nice is a reason for him to work efficiently in (2)), speaker B should be able to reject those inferences with his response in (2a). However, such a direct rejection seems completely inappropriate. Instead, an appropriate rejection is the version in (2b) that involves a generalization.

(2) A: Peter ist ein netter Kerl. Er arbeitet **dennoch/trotzdem** nicht effizient.
('Peter is a nice guy. He doesn't CONN work efficiently.')
B: a. # (Der nette) Peter arbeitet ja auch nicht automatisch effizient.
('(The nice) Peter doesn't automatically work efficiently.')
b. Nette Menschen arbeiten ja auch nicht automatisch effizient.
('Nice people don't automatically work efficiently.')

In what follows, I will argue that such a generalization has to be included in an approach to contrast with *dennoch* and *trotzdem*. While this idea is not entirely new (cf. König and Siemund, 2000, discussed below), the implementation suggested here is: I will introduce a generic operator GEN (cf. Krifka et al., 1995) in the inference that generalizes over a(t least one) variable in the asserted conjuncts. In this approach, contrast with *dennoch* and *trotzdem* is a two-step process: the connectives conventionally implicate a generic rule (cf. (3i)); the assertion of the two conjuncts *p* and *q* represents the exception to that rule (cf. (3ii)). I will argue that such an analysis can not only reconcile the denial-of-expectation and incausality approaches and account for the perks of both, but also provide an explanation for data as shown in (2).

(3) **p *dennoch/trotzdem* q**
(i) implicature: $\text{GEN}(\dots\ v)\ [P_p(\dots)(v);\ \neg Q_q(\dots)(v)]$ (generic rule)
(ii) assertion: $p \wedge q$ (exception to generic rule)

The article is structured as follows: first, I will briefly sketch the *grandes lignes* of the two most prevalent approaches to contrast as with *dennoch* and *trotzdem*, the denial-of-expectation and incausality approaches. The need to include genericity in the analysis is further argued for by findings of a study in Zieleke (forthcoming), which are summarized in Section 3. In the last section, I will introduce the genericity approach shown in (3) and reassess how the approaches and findings presented in Sections 2 and 3 fit into the picture of generic incausality.

2. Prevalent approaches to contrast with *dennoch* and *trotzdem*

As mentioned above, the majority of research on contrast is rooted in the goal to distinguish different uses of underspecified contrastive connectives such as English *but* (starting with Lakoff's 1971 distinction of a 'semantic opposition *but'* and a 'denial of expectation *but*') or German *aber* (e.g. Breindl et al., 2014). Over time, this research delivered different accounts of contrast that vary not only in terms of the number of different kinds of contrast postulated, but also in terms of the terminology applied to refer to them. For the contrast we're interested in in this paper (cf. examples (1b-d), above), labels employed include 'concessive'[2], 'denial-

[2] The term 'concessive', which is particularly wide-spread in the German literature on contrast, is sometimes used to cover two different kinds of contrast, a "direct-rejection concessive" and an "indirect-rejection (argumentative)

of-expectation', and 'incausality'. While the term 'concessive' is sometimes used synonymously to either 'denial-of-expectation' (e.g. in Malchukov, 2004) or 'incausality' (e.g. in König, 1991), these two latter terms represent different perspectives on the inference[3] involved in this kind of contrast.

According to the **denial-of-expectation** approach, the use of a concessive marker such as *dennoch* or *trotzdem* elicits the inference that what is expressed in the two conjuncts contradicts an underlying expectation: "two states of affairs are combined which in our real world normally exclude each other" (Rudolph, 1996: 180). This corresponds to the wording of the inference as "If *p*, then normally not *q*" (e.g. Malchukov, 2004: 180). For our example of departure in (1b), repeated in (4), this can be paraphrased as in (5):

(4) Es regnet. Wir gehen **dennoch**/**trotzdem** spazieren.

(5) *'Normally, if it rains, we're not going for a walk, but (now) we are.'*
(denial-of-expectation)

The expectation central to this approach is usually based on a 'normalcy assumption' thereby linking this kind of contrast to world knowledge (cf. Lang, 2004) or default knowledge. That this is theoretically challenging has been pointed out by various authors. Breindl (2004), for example, provides the example with *obwohl* in (6), where the concessive meaning can be inferred despite the fact that the nonsense-words in the conjuncts should not allow the hearer to resort to world knowledge of any kind. Karagjosova (2012: 46) argues that "[…] it is not plausible to assume that the concessive interpretation relies on world knowledge axioms, but that it is rather the other way around, i.e., the derivation of such axioms is a bi-product of the concessive interpretation". This goes in hand with examples as in (7) provided i.a. by Stede (2004), where the use of the concessive *obwohl* informs the hearer that loosestrife (a fungus species) are to be found in July, rather than requiring them to know that already (as most readers probably don't).

(6) **Obwohl** der Knüll geprempelt hat, hat das Fipi nicht geurzt. (Breindl, 2004: 6)
('Althought the Knüll prempelled, the Fipi did not urz.')

(7) Es war Juli, **aber** wir haben keine Safranschirmlinge gefunden. (Stede 2004: 278)
('Although it was July, we did not find any loosestrife.')

It is important to emphasize, at this point, that it is not the mere link to world knowledge itself that is problematic in the denial-of-expectation approach; it is the conception of world knowledge as a source of origin for the inference provided by concessive connectives. Concessive relations are not based on world knowledge, they create it.

concessive" (cf. Azar, 1997). Since I consider argumentative contrast to belong to a different dimension of contrast altogether (cf. Zieleke, forthcoming), such uses shall be neglected in this paper.

[3] Note that there is also considerable variation on whether the inference is a presupposition (e.g. König, 1991; Malchukov, 2004) or an implicature (e.g. Breindl, 2004; Umbach, 2005). Although this consideration is far from trivial, I will, for now, put this discussion aside and concentrate on the "content" of the inference as discussed in the literature. I will briefly return to this question in Section 4.

For Umbach (2005), the expectation triggered by *but*-sentences is "the result of the general implicature of negation instead of default knowledge […]" (2005: 14). Note that this applies to any use of *but*, not just the one discussed here. This is due to the fact that according to her analysis "any *but*-sentence involves a negation. Therefore, just like simple negated sentences, *but*-sentences trigger the expectation that the corresponding affirmative holds" (ibid.). The specific ('concessive') kind of expectation involved with the use of *but* equivalent to *dennoch* and *trotzdem*, then, is ascribed to a "causal over-interpretation" that results in **incausality**.

With this, she follows e.g. König (1991) where "it is convincingly argued that a concession constitutes "incausality", i.e. a concessive statement is the dual of a causal statement" (Umbach, 2005: 16). According to the incausality approach, connectives such as *dennoch* and *trotzdem* elicit an inference of a causal relation between the proposition in the external conjunct *p* and the opposite of the internal conjunct *q* ($p \rightarrow \neg q$). The assertion of both propositions ($p \wedge q$) rejects this relation, thereby making it *in*causal. For the contrast in (4) this translates as follows:

(8) *'It is not the case that we aren't going for a walk because it rains.'* (incausality)

The incausality approach thus focusses on the close relation between causal and concessive meanings as "two equivalent but formally different constructions" (König and Siemund, 2000: 346).[4] This is reflected in the observation that, truth-conditionally, the assertion of the conjuncts $p \wedge q$ is equivalent to the negation of the causal relation, i.e. $\neg(p \rightarrow \neg q)$. Example (9) shows how, according to Umbach (2005), the combination of the negation inherent to contrast (cf. (9b)) with the causal over-interpretation (cf. (9c)) leads to a concessive, i.e. incausal, interpretation (cf. 9d)) of sentences such as in (9a):

(9) a. It is raining **but** Mary is happy. (Umbach, 2005: 17)
b. It is raining but it is not the case that Mary is not happy.
c. It is raining but it is not the case that Mary is not happy because of that.
d. It is raining but Mary is happy in spite of that.

While this analysis provides a much more satisfying explanation for the inference involved with concessive contrast as with *but*, *obwohl*, *dennoch* and *trotzdem*, there still seems to be something missing. As much as we want a theory of this contrast to refrain from being based on world knowledge, we cannot help but admit that a paraphrase of the inference involved in (9a) along the lines of the denial-of-expectation approach such as in (10) seems to be fitting.

(10) Usually, if it rains, people aren't happy.

Why is that? Why does, to use Karagjosova's words again, "the derivation of such axioms" seem to be "a bi-product of the concessive interpretation"? Where do these axioms come from?

[4] Apart from the normalcy assumption, the formalization 'normally, if *p* then $\neg q$' of the denial-of-expectation approach basically expresses the same idea (cf. Dancygier and Sweetser, 2000, for a discussion on similarities between causality and conditionality) without, however, making these connections explicit. Also, it has to be pointed out that not all proponents of the incausality approach refrain from the idea of world knowledge. Di Meola (1998), for example, defines concessivity as "hidden causality" involving an inner causality between the states of affairs expressed in the conjuncts ("Vorhandensein eines inneren Kausalzusammenhangs zwischen den betreffenden Sachverhalten", Di Meola, 1998: 293).

The same question has occupied König and Siemund who concluded that "[t]he background assumption against which the two clauses of a concessive construction are asserted seems to involve some kind of generalisation over the two specific situations asserted" (König and Siemund, 2000: 353).

The approach to contrast with *dennoch* and *trotzdem* suggested in this paper builds on the same conclusion and draws a connection between generalization and genericity: since "a generic sentence states a lawlike regularity" (Krifka et al., 1995: 45), the incorporation of a generic operator GEN in the inference that generalizes over variables in the conjuncts (cf. (3) above) would allow to conflate Umbach's derivation of a concessive reading in (9) with the generalized paraphrase in (10), and thus with the denial-of-expectation approach.

Before I will present my attempt at an implementation of this idea of 'generic incausality' in Section 4, I will summarize the findings of a study in Zieleke (forthcoming) in the next section that further prompt the need to account for generalization when investigating contrast with *dennoch* and *trotzdem*.

3. Empirical support for genericity

Empirical support that the inference involved in contrast with *dennoch* and *trotzdem* should be modified to account for a generalization over what is expressed in the conjuncts comes from a forced choice study designed in Zieleke (forthcoming) comparing *dagegen* ('in contrast') with *trotzdem*. The intent of the study was to empirically investigate the constraints of use for two groups of German contrastive connectives. While the results for *dagegen* met the expectations, the results for *trotzdem* inadvertently pointed out that incausality as described above does not suffice to prompt participants to produce a 'concessive' connective.

In the forced choice study, participants were asked to fill a gap such as in (11) with either *dagegen* or *trotzdem*. The choice for *dagegen* was expected to be motivated by a(n information) structural parallelism in the conjuncts (neutral condition), whereas the choice for *trotzdem* was expected to be motivated by ('classic') incausality (incausal condition). This choice was manipulated by a "trigger sentence" preceding the conjuncts: a sentence indicating no specific relation between the conjuncts in the 'neutral' condition (cf. (12a)), or a sentence indicating an incausal relation between the conjuncts in the incausal condition (cf. (12b)).[5]

(11) Paul mag Spinat. Peter mag Spinat _____ (*dagegen/trotzdem*) nicht.
('Paul likes spinach. Peter does _____ not like spinach.')

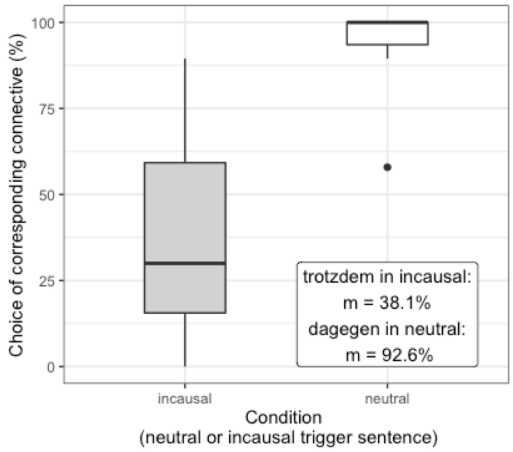
(12) a. Paul und Peter haben einen ganz unterschiedlichen Geschmack. (neutral)
('Paul and Peter have a very different taste.')
b. Peter verehrt seinen großen Bruder Paul und macht ihm deswegen alles nach. (incausal)
('Peter admires his big brother Paul and therefore copies him in everything.')

[5] For minimal variation between the conditions, and since the information structure of the conjuncts does not affect connectives such as *dennoch* and *trotzdem*, all items were conducted with a parallel information structure involving contrastive topics and foci.

44 participants (German native speakers) saw 16 such items in either condition distributed over two lists, as well as 20 fillers with a forced choice between other (temporal, causal, etc.) connectives. Half of these fillers, such as the one shown in (13) clearly indicated a choice between the connectives and thus served as control items, others did not involve a clear preference (e.g. the causal pair *daher/deswegen* ('therefore/for this reason')).

(13) Alle Kinder der Familie Müller gehen inzwischen zur Schule. Otto geht in die erste Klasse. Ursula geht _____ (*erst/schon*) in die dritte.
('All children in family Müller go to school by now. Otto is in the first grade. Ursula is _____ (only/already) in third grade.')

Figure 1 shows the results in the two conditions according to the expectations: as expected, participants chose *dagegen* in the neutral condition by an average of 92.6% (white box). However, with an average of only 38.1%, the choice for *trotzdem* in the incausal condition (grey box) was not only much lower than expected; as the whiskers of the boxplot indicate, there was also a considerable spread (in contrast to the neutral condition).



A closer look at the data in the incausal condition showed that this spread can be traced back to variation among the 16 items: for items such as in (14), participants chose *trotzdem* less than half of the time (35% in the case of (14)); items such as in (11) above scored a choice of *trotzdem* above the 50% mark (75% in this case).

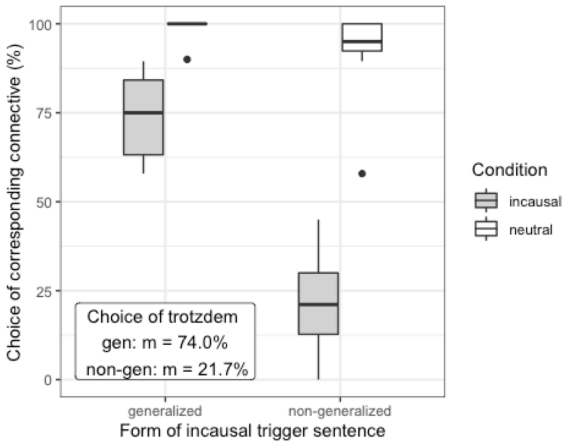
(14) Freunde haben Sophie vorgeschwärmt, wenn sie sich Prag ansieht, muss sie auch in Bratislava Halt machen. Prag wird Sophie sich ansehen. Bratislava wird sie sich _____ (*dagegen/trotzdem*) nicht ansehen.
('Friends told her, if she visits Prague, she also has to visit Bratislava. Sophie will visit Prague. She will _____ not visit Bratislava.')

A comparison of these two groups of items revealed what König and Siemund (2000) knew all along: as I concluded in Zieleke (forthcoming), "the choice of *trotzdem* over *dagegen* only seems to be adequately motivated if the trigger sentence involves an abstraction of, or rather: a generalization over, the content expressed in the two conjuncts". The incausal trigger sentence for the item shown in (11) (cf. (12b)), for example, generalizes over the boys' behavior: Peter (generally) copies Paul in everything, but when the behavior to copy is liking spinach as expressed in the conjuncts, the 'generic rule' does not apply.

Note that the item shown in (14) also provides a marker for generalization, the modal verb *müssen* ('to have to'). This complies with the fact that 35% of the participants did, after all, choose *trotzdem* over *dagegen* –for these participants, some sort of generic rule is thus inferable. This raises the question whether we should consider the possibility of varying

degrees of generalization that play a role: why is (12b) a 'better' generalization than the context sentence in (14)?[6]

In Figure 2 on the right, the results are plotted again, this time according to whether or not the incausal trigger sentence involved such a generalization. In the neutral condition, this distinction does not (significantly) affect the choice for *dagegen*, which suggests that it is not the overall quality of the different items. In the incausal condition, on the other hand, the choice for *trotzdem* reaches an average 74% if the incausal trigger represents a 'generic rule' such as in (12b), while non- (or 'less obvious') generic cases such as in (14) only come out with an average choice for *trotzdem* of 21.7%.



In the original work in Zieleke (forthcoming), I deliberately did not specify how the 'rejected generic rule' that represents the inference involved in contrast with *dennoch* and *trotzdem* might be implemented. I will therefore revisit the items of the original study only after presenting the refined approach to generic incausality involving a generic operator in the next section.

4. *Dennoch* and *trotzdem*: generic contrast

In this section, I will introduce the genericity approach shown in (3) above and reassess how an implementation of contrast with *dennoch* and *trotzdem* in terms of a generic operator in the inference fits into the picture of the approaches and findings presented in Sections 2 and 3.

As briefly mentioned above (see footnote 3), there is considerable variation in the literature on whether the inference is a presupposition (e.g. König, 1991; Malchukov, 2004) or an implicature (e.g. Breindl, 2004; Umbach, 2005). While a detailed debate on that point would go beyond the scope of the present discussion, I want to briefly point out that I assume the inference in question to be a **conventional implicature**.

With this, I follow i.a. Breindl (2004), according to whom the inference elicited in contrast with *dennoch*, *trotzdem* or *obwohl*, is a 'conventionalized conversational implicature' ("Konventionalisierung einer konversationellen Implikatur", Breindl, 2004: 22). Mauri and van der Auwera argue that connectives such as English *although* (and, conversely, also its German equivalent *obwohl*) diachronically undergo semantic change "with pragmatic inferences becoming part of the semantics of the connective" (2012: 380). This observation fits well with Breindl's 'conventionalization', on the one hand, but also with considerations regarding presuppositions, on the other hand.

[6] Thanks to Sebastian Bücking for pointing that out. I will leave this question for future research.

Problematic for the assumption that the inference is a presupposition are, in my view, observations concerning a possible reinforcement of the concessive relation. The experimental items discussed in Section 3 above, such as (11) repeated below as (15), always contained an explicit formulation of the inferred relation itself. Uttering the inferred relation in (15a) can precede the utterance containing *trotzdem* as a 'trigger' for this inference in (15b). For 'classic' presuppositions such as in (16), on the other hand, a similar reinforcement seems to be inadequate: the utterance in (16a) cannot be followed by (16b), where the factive verb *bedauern* ('to regret') triggers the presupposition in (16a).

(15) a. Peter verehrt seinen großen Bruder Paul und macht ihm deswegen alles nach.
b. Paul mag Spinat. Peter mag Spinat **trotzdem** nicht.

(16) a. Hans hat (so spät noch) einen Kaffee getrunken.
('Hans drank a coffeee this late.')
b. Er_{Hans} bedauert es, so spät noch einen Kaffee getrunken zu haben.
('He regrets that he drank a coffee this late.')

However, the line between conventional implicatures and presuppositions is a fine one. Crucially, both kinds of inference have in common that there is projected content that has to be accommodated. This fits well with the discussion in Section 2, where the Knüll-example in (6) has shown that hearers accommodate the relation expressed by concessive connectives even in contexts with nonsense words.

4.1. Generic incausality

The introduction of a generic operator in the inference involved in contrast with *dennoch* and *trotzdem* leads to the result that the inference is to be understood as a generic sentence. I follow Krifka et al. (1995) in their seminal work on genericity in that generic sentences are propositions that "report a regularity which summarizes groups of particular episodes or facts" (Krifka et al., 1995: 2) and thus "abstract away from particular events and facts" (p. 4).

In the approach as shown in (3) above, repeated here as (17), this is implemented as follows: first, in a conjunction of the propositions *p* and *q* by the connectives *dennoch* or *trotzdem*, the connectives implicate a generic rule, where the generic operator GEN generalizes over at least one variable *v*. If this variable applies to a property *P* of proposition *p*, then it does not apply to a property *Q* of proposition *q*. Second, the assertion of the propositions in the conjuncts is a non-generic or '(more) specific' instantiation of the variable that builds the exception to this rule – a characteristic ascribed to generic sentences that "in general, allow for exceptions" (Krifka et al., 1995: 4).

(17) **p *dennoch/trotzdem* q**
(i) implicature: $GEN(\dots v)\ [P_p(\dots)(v);\ \neg Q_q(\dots)(v)]$ (generic rule)
(ii) assertion: $p \wedge q$ (exception to generic rule)

The variable *v* can apply to situations, entities and/or predications. As indicated by the placeholder "…", it is possible that more than one variable is generalized over, as e.g. the next

example shows. A discussion on how to determine which variable and which properties to generalize over will follow shortly.

Let us take a look at how (17) applies to our example of departure, repeated in (18). In this case, the property P_p is RAINING which, in the assertion, applies to an instantiation of a situation s_i (e.g. *now* in most contexts), cf. the assertion in (18ii). The generic operator generalizes over situations *s*, so that the raining-situations in the implicature in (18i) comprise raining-situations in general. Similarly, the generalized entity *x* applies to Q_q GOING.FOR.A.WALK in *s* translating to the indefinite pronoun *one* in the implicature as compared to the instantiation of this entity in the assertion (e.g. *we* in our example, cf. (18ii)).

(18) Es regnet. Wir gehen **dennoch/trotzdem** spazieren.
(i) +> If it rains (in general), one does not go for a walk.
+> GEN (x, s) [RAINING (s); ¬(GOING.FOR.A.WALK (x) (s))]
(ii) It is raining (now) and we're going for a walk.
(RAINING (s_i)) ∧ (GOING.FOR.A.WALK (we) (s_i))

Example (19) delineates the derivation of a conjunction with *dennoch* or *trotzdem* to a generic sentence in more detail: (19a) summarizes the propositions with P_p being LION and Q_q being ¬(FUNNY)[7]. Based on these properties, the implicature elicited by the connectives is the one shown in (19c), i.e. that for a generalized entity *x*, if being a lion applies to *x*, then not being funny does not apply to *x*. By cancelling the double negative, this translates to the generic sentence in (19d). Note that the implicature in (19b) is not valid since the rule implicated by *dennoch* or *trotzdem* really isn't about Herbert specifically, but about generic entities of which Herbert is but an instantiation. Herbert, in fact, is the exception to the generic sentence in (19d), which is why 'Lions are funny, except for Herbert' would be an appropriate conclusion from (19).

(19) Herbert ist ein Löwe. **Dennoch/Trotzdem** ist er nicht witzig.
('Herbert is a lion. CONN he is not funny.')
a. p = LION (Herbert)
q = ¬(FUNNY (Herbert))
b. ~~+>~~ (LION (Herbert)) → ¬(¬(FUNNY (Herbert)))
c. +> GEN (x) [LION (x); ¬(¬(FUNNY (x))]
d. (= (19c) +> *Lions are funny*.

Let us now revisit some of the examples we have encountered in the previous sections and reassess how generic incausality applies to them. First, the example in (9) that caused amazement as to why, in spite of Umbach's (2005) very plausible derivation of the concessive meaning, a paraphrase as in (10) was still so fitting. If we assume that the example involves the generalized implicature in (20b), Krifka et al. tell us the rest: "Adverbs such as *usually*, *typically*, and *in general* are closest in meaning to the generic operator" (Krifka et al., 1995: 25). The introduction of a generic operator in the inference involved in contrast with *dennoch* and *trotzdem* (and equivalent uses of *but* or *aber* and *obwohl*, for that matter) can thus account

[7] These properties were chosen with the intent to guide through the process without potential world knowledge getting in the way – I assume that, like me, most readers do not have intuitions on whether or not lions are supposed to be funny.

for the inference, i.e. generic sentence, resembling a "lawlike regularity" (p. 45) corresponding with adverbs such as *usually* or *normally*, on the one hand, and the asserted conjuncts representing the exception to this regularity, on the other.

(20) It is raining, **but** Mary is happy.
a. p = RAINING (s_i); q = HAPPY (Mary)
b. +> GEN (x, s) [RAINING (s); ¬(HAPPY (x) (s))]
c. Usually, if it rains, people aren't happy.

Second, the examples in (6) and (7) demonstrating how world knowledge is an insufficient source of origin for this kind of contrast can also be accounted for by the assumption of genericity in the implicature. The major restriction of the application of a generic operator is simply that generic sentences "must have at least one variable to generalize over. That is there must be at least one variable which is not explicitly tied to some particular object" (Krifka et al., 1995: 32). In the case of the loosestrife-example, repeated in (21), this is already provided for by the "kind-referring NP" *Safranschirmlinge*. This might also explain why even conjuncts that consist of nonsense words like the Knüll-example in (6) can provide the generic incausality implicature (how could we assess that no potential variable is explicitly tied to a particular object?).

(21) **Obwohl** es Juli war, haben wir keine Safranschirmlinge gefunden.

Another observation concerns the fact that examples where concessive markers such as *obwohl*, *dennoch* or *trotzdem* are inacceptable are hard to come by. If the connectives conventionally implicate a generic rule that does not rely on world knowledge, but creates new world knowledge instead, they can connect almost any two propositions (cf. also example (19) above). There is one exception demonstrated in (22): although (22a) provides several potential variables to generalize over (someone swimming, someone trying) and no world knowledge should prevent us from accommodating (22b), the connectives *dennoch* and *trotzdem* are infelicitous. Here, semantic properties are responsible, as the implicative verb *versuchen* ('to try') explicitly blocks the accommodation of the generic rule in (22b).

(22) a. Schwimmen ist total einfach. Ich werde es **#dennoch**/**#trotzdem** versuchen.
('Swimming is easy as pie. I will CONN try it.')
b. # +> Usually, if things are easy as pie, one cannot try them.

Finally, let's revisit the empirical data presented in Section 3 to see whether the implementation of the inference involved in contrast with *dennoch* and *trotzdem* in terms of a generic operator can account for them. The two examples representing items that either failed to sufficiently force the choice of *trotzdem* over *dagegen* (cf. (24), choice of *trotzdem*: m = 35%, cf. Zieleke, forthcoming) or succeeded to do so (cf. (23), choice of *trotzdem*: m = 75%) are repeated below. The paraphrase of the propositions in the conjuncts and the 'incausal trigger' sentence are given in (a) and (b), respectively. For the successful item in (23), the trigger sentence can be paraphrased as a generic rule, to which liking spinach in the asserted conjuncts is the specific instantiation of the variable *y* that is an exception to the rule (Peter does everything Paul does,

except liking spinach).[8] The paraphrase of the unsuccessful item in (24) shows that there is no generalization in the incausal trigger – in fact, the content is identical to the conjuncts.[9]

(23) 'Peter admires his big brother Paul and therefore copies him in everything. Paul likes spinach. Peter does _____ not like spinach.' *trotzdem* m = 75%
   a. Conjuncts: p = LIKE (Paul, spinach$_{indef}$); q = ¬(LIKE (Peter, spinach$_{indef}$)
   b. Incausal trigger: GEN (x, y, z) [x = Paul ∧ z = Peter ∧ LIKE (x, y); LIKE (z, y)]

(24) 'Friends told her, if she visits Prague, she also has to visit Bratislava. Sophie will visit Prague. She will ____ not visit Bratislava.' *trotzdem* m = 35%
   a. Conjuncts: p = VISIT (Sophie, Prague); q = ¬(VISIT (Sophie, Bratislava))
   b. Incausal trigger : (VISIT (Sophie, Prague) → VISIT (Sophie, Bratislava))

From the examples discussed so far it seems that there are no restrictions as to which part of the asserted propositions is generalized over – it can be entities, predications, and/or situations. Moreover, examples such as (18) and (20) show that it does not even necessarily have to be the same variable used to generalize over the two conjuncts, i.e. a generalization over situations in the external conjunct and over entities and situations in the internal one. While the lack of such restrictions potentially allows this approach to contrast with *dennoch* and *trotzdem* to account for a maximum amount of cases, it also points out a desideratum of the current approach: how do we know which variable to generalize over?

Examples such as (18) and (20) suggest there might be structural components in the conjuncts that play a role. After all, the thetic sentence *Es regnet* in the external conjunct of both examples, simply doesn't have an entity to generalize over. This goes in hand with Krifka et al.'s account of the generic sentences in (25) according to which "explicit restrictions" as the temporal phrase in (25a) would lead to a quantification over simple situations, while "implicit restrictions" as in (25b) "leave open the "size" of the situations that are quantified over" (Krifka et al., 1995: 39/40). However, there are also cases such as (26), where the authors conclude that "the restrictor must be derived pragmatically" (p. 31).

(25) a. Mary smokes (a cigarette) / (cigarettes) after dinner.
   b. Mary smokes cigarettes / a cigarette.

(26) Mary smokes.

The following example supports the assumption that pragmatic factors play a role for the specific formulation of the generic inference elicited by *dennoch* and *trotzdem*. Structurally – and in analogy to the Herbert-example in (19) –, the continuous topic suggests a generalization over entities, and the absence of "explicit restrictors" in terms of temporal adverbials in the two conjuncts suggests to generalize over situations as well. This would result in the version

[8] Instead of using LIKE as the relevant *Pp* in the generic abstraction, I could also have chosen something like DO or BEHAVE.LIKE, which entail the first.

[9] Considering the modal verb *müssen* ('to have to') – which is ignored in (24b) together with the recommendation-status altogether – as an anchor for a generalization, as briefly mentioned in Section 3, a formalization with GEN would be possible. However, a friend's recommendation as a 'rule' might simply allow for too many exceptions. (Thanks again to Sebastian Bücking for pointing that out.)

in (27b) which seems appropriate. However, one could also imagine a 'What's the matter with Peter today?' context, where the speaker identifies the causal relation underlying the generic implicature as a specific trait of Peter. In this case, the generalization should include Peter which would result in something like (27c). Finally, one could imagine a context where flatmates discuss the execution of different household chores and observe that Peter didn't adhere to the apartment rules, in which case even (27d) might be an appropriate generalization.

(27) Peter saugt Staub. **Dennoch**/**Trotzdem** wäscht er nicht ab.
('Peter is vacuum cleaning. CONN he is not doing the dishes.')
a. p = (VACUUM (Peter) (s_i)); q = ¬(DO.THE.DISHES (Peter) (s_i))
b. +> GEN (x, s) [VACUUM (x) (s); DO.THE.DISHES (x) (s)]
'Someone who is vacuuming is also doing the dishes.'
c. +> GEN (x, s) [x = Peter ∧ VACUUM (x) (s); DO.THE.DISHES (x) (s)]
'Whenever Peter is vacuuming, he's also doing the dishes.'
d. +> GEN (x, s) [FLATMATE (x) ∧ VACUUM (x) (s); DO.THE.DISHES (x) (s)]
'Whenever a flatmate is vacuuming, they're also doing the dishes.'

Seen as all of the versions in (27) depend on manipulations of the preceding context, and discourse connectives are also referred to as 'pragmatic markers', the consideration to add pragmatic concepts such as Common Ground to the picture of contrast with *dennoch* and *trotzdem* immediately suggests itself. How exactly this would have to be implemented, however, is something I would like to put up for future research for now.

4.2. A reconciliation of approaches to contrast with *dennoch* and *trotzdem*?

How does the current 'generic' approach to contrast with *dennoch* and *trotzdem* comply with the previous research on this kind of contrast? As I hope to have shown in the discussion of the previous sub-section, the properties attributed to the generic operator GEN match with properties attributed to the inference involved with this particular contrast.

First, the advantages of the incausality approach can be maintained: the close relation between 'concessivity' and causality (cf. König and Siemund, 2000) as well as the correlation between contrast and negation (cf. Umbach, 2005) still constitute the base of the inference evoked by a conjunction *p dennoch/trotzdem q*. Including a generic operator in the formalization of the inference does not alter the underlying principle that the assertion is truth-conditionally equivalent to the base structure of the incausal implicature.

Second, the assumption of genericity in the implicature matches with the intuitive advantage of the denial-of-expectation approach. As the discussion of examples (9) and (10) in Section 2 has shown, the denial-of-expectation-paraphrase '*normally p → q, but ¬q*' matches well with our intuitions. When we exclude default or world knowledge as a possible explanation – as we did, cf. examples (6) and (7) – we still have to account for why "the derivation of such axioms is a bi-product of the concessive interpretation" (Karagjosova, 2012: 46). In the approach to contrast with *dennoch* and *trotzdem* suggested in this paper, the explanation is the generic operator itself: if the inference evoked by *dennoch* and *trotzdem* is understood as a generic

sentence, it follows that it can be paraphrased by adverbs such as *usually* or *normally* that, according to Krifka et al. (1995, see above), are closely connected to the operator's meaning.

Another advantage of the incorporation of a generic operator is that its bound variable(s) offer a formal clue where to find those axioms. Although there are no restrictions as to which part of the asserted propositions is generalized over – it can be entities, predications, and/or situations –, there are structural components such as topic continuity or thetic sentences and pragmatic aspects such as the preceding context and Common Ground that seem to play a role.

Finally, a generic approach to contrast with *dennoch* and *trotzdem* provides the missing link for observations such as in (2), repeated below as (28). As I brought up in the introduction, the two prevalent approaches account for major intuitions concerning the conjunction *p dennoch/trotzdem q*, i.e. that there was an expectation for Peter to work efficiently and that the causal relation of him being a nice guy and him working efficiently is rejected. The missing link concerns a possible dismissal of the implicature evoked by the conjunction: B's dismissal in (28a) applies directly to the asserted content, cf. (29a), and is therefore inappropriate. An appropriate rejection of the implicature has to involve a generalization as in (28b), cf. its formalization in (29b).

(28) A: Peter ist ein netter Kerl. Er arbeitet **dennoch/trotzdem** nicht effizient.
('Peter is a nice guy. He doesn't CONN work efficiently.')
B: a. # (Der nette) Peter arbeitet ja auch nicht automatisch effizient.
('(The nice) Peter doesn't automatically work efficiently.')
b. Nette Menschen arbeiten ja auch nicht automatisch effizient.
('Nice people don't automatically work efficiently.')

(29) a. p = (NICE (Peter) (s_i)); q = ¬(WORK.EFFICIENTLY (Peter) (s_i))
b. +> GEN (x, s) [NICE (x) (s); WORK.EFFICIENTLY (x) (s)]

The current proposal of generic incausality thus offers a way to consolidate the advantages of prevalent approaches to concessivity with further observations considering the close relation between the properties of the conventional concessive implicature and the generic operator implemented to describe it.

5. Conclusion

The aim of this paper has been to contribute to the question of how we can capture the very specific nature of the inference invoked by *dennoch* and *trotzdem*. The discussion of previous research on this 'concessive' contrast in Section 2 has shown that such an approach has to be able to account for (i) the intuition that there is an underlying expectation ('denial-of-expectation' approach), (ii) the close relation between this inferred contrastive relation and causality ('incausality' approach), and (iii) the observation that it involves a generalization.

This last point has also been supported by empirical data from a forced choice study by Zieleke (forthcoming) discussed in Section 3. Whether or not participants filled a gap with *trotzdem* instead of the 'neutral' contrastive connective *dagegen* ('in contrast') depended on

generalization: in contexts where the relation to reject by *trotzdem* was between the asserted propositions themselves, less than half of the participants chose *trotzdem* over *dagegen*. In contexts where the relation to reject was between generic abstractions of the conjuncts instead, participants chose *trotzdem* by an average of 74%.

The proposal of this paper, then, has been to implement such generalizations in terms of a generic operator GEN by Krifka et al.'s (1995) definition. In a conjunction *p dennoch*/*trotzdem q*, the connectives conventionally implicate a generic rule, where GEN generalizes over at least one variable *v*. If *v* applies to a property *P* of proposition *p*, then it does not apply to a property *Q* of proposition *q*, cf. (30i). The assertion of the propositions in the conjuncts is a non-generic or '(more) specific' instantiation of the variable that builds the exception to this rule, cf. (30ii).

(30) **p *dennoch/trotzdem* q**

(i) implicature:	$\text{GEN}(\ldots\ v)\ [P_p(\ldots)(v);\ \neg Q_q(\ldots)(v)]$	(generic rule)
(ii) assertion:	$p \wedge q$	(exception to generic rule)

As a consequence of the introduction of a generic operator, the inference involved in contrast with *dennoch* and *trotzdem* is to be understood as a generic sentence. This turns out to be very convenient for an approach to this kind of contrast, since generic sentences and the concessive implicature share important properties. According to Krifka et al. (1995), generic sentences state regularities and allow for exceptions. This reflects the relation between implicature and assertion in conjunctions with *dennoch* or *trotzdem*, where the generic situations, properties and/or entities in the implicature are the regularity and their (non-generic) instantiations in the asserted conjuncts represent the exception to that regularity. Moreover, the generic operator is close in meaning to adverbs such as *usually* or *in general*. This conflates the generic approach with the denial-of-expectation one and offers an explanation for the origin of the normalcy assumption that is theoretically less challenging than world knowledge – the generic rule does not rely on world knowledge, it creates it. Finally, the implementation of genericity in terms of a generic operator allows us to maintain important findings on concessive contrast, such as the close relation between concessivity and causality (cf. König and Siemund, 2000) and the correlation between contrast and negation (cf. Umbach, 2005).

While open questions regarding the selection of the specific variable(s) to generalize over such as the status of structural properties of the conjuncts (e.g. topic continuity) and pragmatic factors (e.g. Common Ground) do remain, I hope to have shown that genericity and concessivity go hand in hand and that this 'generic' approach to contrast with *dennoch* and *trotzdem* proves to be a useful source for future research.

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