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On the directionality from temporal to conditional

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Abstract: This paper examines the purportedly unidirectional process from temporal connective to conditional connective. As conditionals developed into temporals and vice versa in Chadic languages, Japanese and Mandarin, unidirectionality in the strict sense is unlikely, even though conditionals are more grammatical than temporals. As the bidirectional changes likely originated in contexts where formal and functional equivalence held between temporals and conditionals and their morphosyntactic distinction was vague, it is proposed that the changes are regular processes mediated by morphosyntactic vagueness. The proposal thus suggests that grammatical change may be regularly bidirectional. Grammaticalization, if defined in terms of regularity rather than unidirectionality, may be bidirectional, too.

Keywords: counterdirectionality; degrammaticalization; equivalence; grammaticalization; vagueness; unidirectionality

1 Introduction

A grammatical item ('gram') tends to become more grammatical ('grammaticalize'), but does not tend to become less grammatical ('degrammaticalize'). This is known as unidirectionality, which has been upheld as a strong tendency (Heine et al. 2017; Kuteva et al. 2019), despite clear evidence for counterdirectional grammatical change, or 'degrammaticalization' (Norde 2009), whereby a gram becomes less grammatical. One of the purportedly unidirectional processes is the development from temporal connective to conditional connective (Heine and Kuteva 2002: 293; Hopper and Traugott 2003: 186; Kuteva et al. 2019: 426–427). Such connectives are typically glossed as 'when' or 'if'. However, in at least three unrelated families, Chadic, Japonic and Sinitic, the opposite direction of development has happened, whereby conditional connectives develop into temporal ones. This paper examines the status of unidirectionality with respect to temporal and conditional connectives.

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Is it to be upheld despite data from the three families? That is, is there anything special about such data that would suggest that the development from conditional to temporal connective (paraphrased as Conditional > Temporal) is exceptional and the one from temporal to conditional connective (Temporal > Conditional) is thus the norm? If there is nothing special about them, does that mean we should reject the existence of unidirectionality from temporal to conditional connective?

Before proceeding, temporal and conditional connectives are defined here. Following Mauri and van der Auwera (2012), they are defined functionally rather than formally, as they have a wide variety of formal realizations across languages. They typically signal some relation between two clauses, the protasis (the ‘antecedent’ or ‘subordinate clause’) and the apodosis (the ‘consequent’ or ‘main clause’). While either or both clauses may be marked, only protasis connectives are considered here, e.g. *if* and *when*, rather than *then*. Henceforth, ‘conditionals’ and ‘temporals’ exclusively refer to conditional and temporal protasis connectives, respectively, while the protases that they mark will be specified as ‘conditional protases’ and ‘temporal protases’, where relevant. Note also that temporals and conditionals mark protases and are not contained with them. A conditional marks the protasis as the condition under which the situation described by the apodosis holds true (e.g. Dancygier and Sweetser 2005; Longacre 2007; Thompson et al. 2007). A temporal signals that the situation described by the protasis constitutes a temporal frame of reference for the situation described by the apodosis. Two general types may be distinguished: one marks the temporal reference as “unspecific” (Guerrero 2021; e.g. *when*) and the other marks it as specifically sequential (e.g. *before*).¹ This paper focuses on the unspecific type. Well-known extensions from temporals and conditionals are not considered here, such as causation markers (e.g. *since* ‘from the time that; because’; Traugott and König 1991) and concessives (e.g. *if* ‘even if’; König 1986) and complementizer uses (e.g. *if* in *I wonder if...*). Temporals and conditionals are defined relatively narrowly here because the literature on Temporal > Conditional pertains to only such narrowly defined connectives.

This paper is structured as follows. Section 2 reviews the literature on Temporal > Conditional and proposes why unidirectionality should be expected, given that conditionals are more grammatical than temporals. Section 3 presents data from Chadic languages, Japanese and Mandarin, respectively. Section 4 discusses how to interpret such data and unidirectionality. Section 5 concludes.

¹ The literature typically characterizes temporals like *when* as markers of temporal overlap or simultaneity (e.g. Longacre 2007), but Guerrero (2021: 35) remarks that “if there is a *when*-clause in a language, it can locate the event of the adverbial clause earlier, later, or around the same time as the main clause” and proposes that they are “unspecific”.

2 Temporal > Conditional

Section 2.1 reviews Traugott (1985) on historical sources of conditionals and subsequent research. Section 2.2 establishes conditionals as more grammatical than temporals.

2.1 Sources of conditionals

Traugott (1985: 295) proposes that conditionals may originate from five sources: modals, copulas, interrogatives, markers of givenness and “the fifth, and apparently commonest”, temporals. Traugott cites 14 languages where conditionals with temporal origins can be found, including English *as/so long as*, Hittite *mān* ‘when; if’ and Tagalog (*ka*)*pag*(*ka*), *kung* ‘if; then; while’.

To account for how temporals develop into conditionals, Traugott (1985: 295) suggests that they are functionally similar in certain contexts. Following Traugott and Dasher (2002) on *as/so long as* ‘during the time that; provided that’ and Mauri and Sansò (2014) on *sempre che* ‘always that; provided that’ in Italian, genericity (defined generally to include habituality; cf. Langacker 1997) is a major factor in the development. This is because there is functional equivalence between temporal and conditional interpretations in generic contexts. Generics are relatively time-stable in that in a given timeframe (including future and past contexts), the occurrence of the situation described by the protasis is accompanied (not necessarily simultaneously) by the one described by the apodosis. Therefore, the situations can also be understood as conditionally related: the occurrence of one satisfies the condition for that of the other. Consider (1):

- (1) *When Bill came home, John left.*
(Traugott 1985: 295)

Traugott (1985: 295) notes that *when* in (1) approximates a conditional if the interpretation is “on all those occasions when Bill came home”, rather than “on a specific occasion when Bill came home”. The former interpretation is generic with past time reference and a context where a temporal may begin to develop into a conditional. The latter interpretation is not generic, as it describes a one-off occurrence. In short, if the connection between two situations is generic, temporal relations may be understood conditionally and a temporal may be interpreted as a conditional.

Another factor in the development from temporal to conditional is futurity (Frajzyngier 1996: 376; Traugott and Dasher 2002: 37). In future contexts “the difference between ‘when’ and ‘if’ clauses lies only in the degree of certainty that the event will be realized” (Lichtenberk 1991: 494), e.g. *When/if Bill comes home, John will leave*.

Even though Traugott does not explicitly hypothesize unidirectionality, her proposed semantic map (1985: 229), with a trajectory from temporal to conditional, implies it. Subsequent publications have also strongly implied that the development is unidirectional or presented it as such, including Traugott and Dasher (2002: 26), the two editions of the textbook on grammaticalization (Hopper and Traugott 1993, 2003) and the two editions of *World Lexicon of Grammaticalization* (Heine and Kuteva 2002: 293; Kuteva et al. 2019: 426–427). Generally, no strong justification for the postulation of unidirectionality is given and most data presented as evidence are synchronic or comparative, not diachronic. Two exceptions, cited above, are Traugott and Dasher (2002) and Mauri and Sansò (2014). The following passage, found in both editions of *World Lexicon of Grammaticalization*, suggests that unidirectionality from temporal to conditional could be proposed on the basis that temporal markers frequently serve as sources of grams: “This [change from temporal to conditional] appears to be an instance of a widespread process whereby spatial and temporal markers are grammaticalized in specific contexts to markers of ‘logical’ grammatical relations, such as adversative, causal, concern, concessive, and conditional relations” (Kuteva et al. 2019: 427).

Unidirectionality should be a hypothesis to test. It is not ideal to propose unidirectionality from temporal to conditional on the basis of other grams not necessarily related to conditionals. This supposed unidirectionality could be tested in two ways. First, as unidirectionality is typically associated with ‘increased grammaticality’ (e.g. Kuteva et al. 2019; Lehmann 1995), if we can show conditionals to be more grammatical than temporals, Temporal > Conditional is more likely to be unidirectional (Section 2.2). Second, we can see if unidirectionality holds up in data (Section 3). The first test is a heuristic and not as robust as the second: it assumes a one-to-one mapping between unidirectionality and increased grammaticality, which should be a notion to test, too. But if the conclusions produced by the tests differ, it raises interesting questions about grammaticalization (Section 4).

2.2 Conditionals are more grammatical than temporals

We have reason to believe that conditionals are more grammatical than temporals, if we make three assumptions. First, the notion of ‘schematicity’ in Cognitive Linguistics (e.g. Langacker 2009a) corresponds to ‘grammaticality’. Second, Fillmore’s (1990) ‘epistemic stance’, which characterizes temporals and conditionals, is a gradient notion that can be decomposed into subtypes with different degrees of schematicity. Third, Traugott’s ‘(inter)subjectivity’ (Traugott and Dasher 2002; Traugott 2010) may be a diagnostic for grammaticality. Alternative frameworks such as Lehmann’s (1995) parameters and hierarchical models of syntax will also be considered.

A semantic category is more schematic (or abstract) if it generalizes over more subtypes. *Cat*, for example, is semantically more schematic than *British Shorthair*, as the former generalizes over not only the latter but also other subtypes of *cat*. Of course, no one would say *cat* is more grammatical than *British Shorthair*, as both are lexical items. But the principle also applies to grams: Some grams are more schematic as they generalize over more functional subtypes. A schematic gram may also be said to have a more ‘bleached’ meaning, as its meaning is an abstraction over more specific meanings. Bleaching (Sweetser 1988), or desemanticization, is frequently proposed as one of the most typical processes in grammaticalization (Kuteva et al. 2019).

Fillmore (1986, 1990) proposes that *when*-clauses express ‘positive epistemic stance’, while *if*-clauses express ‘neutral epistemic stance’ by default. In using *when*-clauses, the speaker commits themselves to what the protasis says, while with *if*-clauses, they are non-committal. This notion of epistemic stance is also used by Akatsuka (1985) to explain the contrast between conditionals and temporals and applied to Japanese (Fujii 2018), Korean (Lee 1996), German (Auer 2008) and many other languages. The contrast between positive and neutral stance corresponds to what has been labelled as (un)certain, (non)factual, (ir)realis or (un)real (Lichtenberk 1991; Podlesskaya 2001; Thompson et al. 2007). The following examples show that the *if*-clause expresses its default neutral epistemic stance in (2) and the *when*-clause signals positive epistemic stance in (3).

- (2) *If he decides to file the suit, the hospital’s lawyers will be allowed to interview him for discovery.*
(Paretsky 1999: 316)
- (3) *When he decides to file the suit, the hospital’s lawyers will be allowed to interview him for discovery.*
(Dancygier and Sweetser 2005: 48)

In (2) the speaker is neutral with respect to whether ‘he decides to...’ is likely or not. In (3), the speaker is confident that ‘he will decide to...’.

Positive epistemic stance is less schematic. In expressing a positive stance through a temporal protasis, a speaker by definition commits themselves. Neutral epistemic stance is more schematic. In expressing a neutral stance through a conditional protasis, a speaker is non-committal, but may commit themselves positively or negatively elsewhere. That is, a neutral stance allows for more ‘rhetorical wiggle room’. There are two phenomena that reflect this greater flexibility of conditional protases than temporal ones.

First, conditional protases, but not temporal protases, may signal more specifically the speaker’s stance by licensing a range of tense, aspect, mood and modality

(TAM) combinations; see Podlesskaya (2001) for a typological survey. Dancygier and Sweetser (2005) call such TAM markers (modally) ‘distanced verb forms’ in English, as they signal the speaker’s epistemic (di)stance. Specifically, what is an otherwise past verb form may be used in conditional protases to express epistemic (di)stance, rather than past reference in English. For example, in (4), which should be read with future reference to illustrate the contrast between (2) and (4), the past form *decided* distances the default stance in (2), making the *if*-clause in (4) more negative epistemically than the one in (2).

- (4) *If he decided to file the suit, the hospital’s lawyers would be allowed to interview him for discovery.*
(Dancygier and Sweetser 2005: 48)

Notably, a modal reading of temporally distanced verb forms is generally not available in temporal protases; when a past verb form occurs there, it has past reference (Verstraete 2007: 194), but does not signal epistemic distance; compare (4). This is because temporals specify positive epistemic stance that cannot be distanced (i.e. rhetorically manipulated). Noting that conditional protases have “more possibilities of manipulating time reference”, Comrie (1982: 144) remarks such possibilities “do not carry over to temporal clauses”. Auer (2008: 175–177) also notes that clauses marked by German *wenn* ‘when; if’ “oscillate between a temporal and conditional reading in the indicative mood”, but are conditional in the subjunctive. That is, conditional *wenn* sanctions more TAM markers and functions.

Second, the neutral epistemic stance marked by conditional protases by default may be specified as nearly fully positive by something beyond the protasis proper. To exemplify this flexibility, which temporal protases do not exhibit, Dancygier and Sweetser (2005) use (5), where *which he will*... renders the stance conveyed by the *if*-clause more positive.

- (5) *And if this guy figures out the relationship between us, which he will if he puts any energy into the matter, then he’ll know it was you with me at the Coolis hospital...*
(Dancygier and Sweetser 2005: 53; Paretzky 1999: 311)

Dancygier and Sweetser (2005: 53) thus remark: “*if* is indeterminate between a range of stances including almost everything except complete positive stance.”²

2 The literature, including Dancygier and Sweetser (2005: 53), sometimes discusses the function of a connective without referencing its protasis. I assume what they mean is that we may generalize over a connective and its protasis and assign functions such as epistemic stance to the connective at a schematic level.

We may construe epistemic (di)stance in terms of a gradient scale with two opposite ends, similar to Akatsuka's (1985) epistemic scale. Temporal protases occupy only the positive end, while conditional ones take up more of the scale. As temporal and conditional protases are licensed by temporals and conditionals, respectively, conditionals are more schematic than temporals in that conditionals generalize over more subtypes of epistemic stance. Conditionals are thus more grammatical. As noted above, this theoretical postulation is supported by the fact that crosslinguistically conditionals license more TAM markers in their protases than temporals (Podlesskaya 2001). In English, Gabrielatos' (2019) corpus investigation into 15 connectives shows that *when*-clauses have the least modal-marking and *if*-clauses has the most. Equating insubordination (main-clause use of what is an otherwise subordinate clause) with grammaticalization, Couper-Kuhlen and Thompson (2023: 185) also show that while conditional protases can be insubordinate in English, temporal ones cannot, because the latter does not meet all of their criteria for insubordination. For them, an insubordinate clause "implements a discrete social action in its sequential context" (i.e. it performs a speech act) and "has an independent interpretation, that is, is interpretable and actionable in the absence of a main clause" (Couper-Kuhlen and Thompson 2023: 164).

Furthermore, conditionals may also be described as more '(inter)subjective' than temporals, following Traugott's approach to (inter)subjectivity. Grammaticality and (inter)subjectivity are separate notions (Traugott 2010): the former can also be construed as a formal notion, while (inter)subjectivity is predominantly a functional one. Nevertheless, they frequently overlap. So do their associated diachronic processes, grammaticalization and subjectification. As connectives such as conditionals and temporals are typically considered grammatical (e.g. Traugott 2010: 40) or 'procedural' (Traugott 2022), we may use (inter)subjectivity to determine their degrees of grammaticality. An expression is (inter)subjective if it indexes "speaker attitude or viewpoint (subjectivity) and speaker's attention to addressee self-image (intersubjectivity)" (Traugott 2010: 32). Conditionals are more subjective because, as previously described, they license protases that express a wider range of epistemic stances, which can be understood as 'speaker attitude'. See also De Smet and Verstraete (2006) for how 'rhetorical manipulation' (such as manipulating the default neutral epistemic stance through modally distanced verb forms or additional clauses) is a kind of subjectivity. Some conditionals are intersubjective, as they license interactive or illocutionary uses, such as politeness e.g. *if you don't mind* and *if you please*. As noted above, unlike conditional protases, temporal ones do not consistently "[implement] a discrete social action" (Couper-Kuhlen and Thompson 2023: 165).

Finally, Lehmann's (1995) parameters might be useful in establishing degrees of grammaticality. However, temporals and conditionals as defined here are connectives, which Lehmann's parameters do not satisfactorily account for, as noted by

Fischer (2008: 356) and Norde (2009: 26), who excludes clause-combining from her work on degrammaticalization. Hierarchical models of clause structure have been fruitfully applied to diachronic data (e.g. Hengeveld 2017; Narrog 2012; Roberts 2010), particularly with respect to how grammaticalization is modelled as unidirectional, upward movement in the clause. That is, when an item grammaticalizes, it moves up to a higher, more grammatical position with a wider scope from a lower, less grammatical one. Such models that posit an ‘interpersonal’, ‘intersubjective’ or ‘(illocutionary) force’ level of representation (e.g. Hengeveld and Mackenzie 2008; Rizzi 1997) would likely assign conditionals to such a level and temporals to a lower one, as intersubjective or illocutionary functions are typically postulated at a higher level, if not the highest (see also Haegeman 2003).

In sum, conditionals are more grammatical than temporals because they are more schematic and (inter)subjective. Diachronically, we would expect unidirectionality from temporal to conditional, as grammatical change typically leads to an increase in grammaticality.

3 From conditional to temporal and back again

This section reviews the literature on Conditional > Temporal and Temporal > Conditional in Chadic languages (Western and Central Africa), Japanese and Mandarin and presents corpus data on Mandarin.

3.1 Chadic languages

Frajzyngier (1996: Ch. 9.5.4) reconstructs a marker **mV* on the basis of members of the Chadic family. Reflexes of **mV* are temporals and/or conditionals, but Frajzyngier (1996: 386) argues that, as per the comparative method, **mV* must be a conditional rather than a temporal since **mV* is more frequently a conditional in the descendant languages than a temporal. This is predicated on the assumption of economy in reconstruction (Campbell 2020: Ch. 7): all else being equal, the most frequent kind of reflexes is proposed as inherited from the proto-language, as doing so would imply fewer instances of innovation, which is hypothetically less likely than retention. The following example is from Kapsiki (Cameroon and Nigeria).

- (6) *má kédziyi genaké Yenú.*
when go.over tell John
 ‘When you are there tell John ...’ (Smith 1969:122)

Furthermore, while there are five descendant languages where **mV* is a conditional but not a temporal, there is only one where **mV* is a temporal but not a conditional (Frajzyngier 1996: 327). This wider distribution of conditional reflexes of **mV* again reinforces the reconstruction of **mV* as a conditional.

To argue that the reconstructed pathway of **mV*, Conditional > Temporal, is not a peculiarity, Frajzyngier (1996: 328–329) proposes that *ángǎ* in Mina (Cameroon) underwent the same development. Additionally, Frajzyngier (1996: 376) proposes that Temporal > Conditional is also possible in Chadic languages, noting that evidence for it is robust because the ultimate source is known to be the lexeme for ‘time’.

As both Conditional > Temporal and Temporal > Conditional are not isolated occurrences, but reconstructible in multiple Chadic languages, Frajzyngier argues that grammaticalization, as far as temporals and conditionals are considered, may be bidirectional. While acknowledging that temporals and conditionals may have different coding constraints (i.e. formal properties) and implying that conditionals are more abstract (or ‘schematic’) than temporals, Frajzyngier (1996: 412–413) nonetheless suggests that temporals and conditionals may share formal and functional equivalence in particular conditions, under which conditionals may begin developing into temporals and vice versa. Such conditions may be interpreted as bridging contexts, where the original and innovative analyses co-exist (Heine 2002). As described in Section 2.1, such conditions may be generic and/or future contexts. In generic contexts, two situations may be construed as temporally or conditionally related, so a temporal may be interpreted as a conditional and vice versa. As the future can never be fully known, future contexts allow for more variable epistemic stance interpretations: the epistemic stance signaled by a conditional protasis may be used and interpreted more positively, or if signaled by a temporal protasis, more neutrally.

Frajzyngier’s reconstructions of **mV* in Proto-Chadic and *ángǎ* in Mina are not strong evidence for Conditional > Temporal because they rely on synchronic data exclusively. It is also possible that Temporal > Conditional happened in Proto-Chadic, but the descendant languages underwent further changes that have skewed the synchronic distribution of **mV*. For more evidence, we will turn to Japanese and Mandarin.

3.2 Japanese

Modern Japanese *-tara* ‘if, when’ originates from *-tar-aba* (< *tari* ‘PRF’ + *aba* ‘if’) in Old Japanese (Ohori 1992: 95; Sakakura 1993, as cited in Shinzato 2015; Takano-Hayes and Shinzato 2000). *-Tar-aba* is part of the Old Japanese paradigm where *-aba* marks the conditional protasis, which contrasts with *-eba*, which marks temporal and causal

protases ‘when; since’ (Hasada 1997: 279; Frellesvig 2010). (7) contains one of the earliest examples of *-tar-aba*, which, given the contrast with *-tar-eba*, has a conditional interpretation, but not a temporal one.³

- (7) *okitsumo-no-hana saki-tar-aba ware ni tsuge koso.*
 duckweed-GEN-flower bloom-PRF-if me to tell.IMP SFP
 ‘If the duckweed flowers have bloomed (in the ocean), please let me know.’
 (*Manyooshuu*, 8th century; Shinzato 2015: 162)

By Modern Japanese *-tar-aba* ‘PRF-if’ has lost its perfect meaning, becoming *-taraba* ‘if’. Shinzato (2015: 161) remarks that *-taraba* “initially expressed conditionality ‘if’ but later came to express temporality ‘when’ as well, depending on the certainty the speaker feels about the content of the proposition” (i.e. epistemic stance) and that *-tara* arose through reduction (*-taraba* > *-taryaa* > *-tara*), citing Sakakura (1993: 111–113). Similarly, Frellesvig (2010: 327) proposes *-taraba* > *-tara*.⁴

Interestingly, Modern Japanese *-eba* ‘when, if’, which originated from *-eba* in Old Japanese, introduced above, has the opposite history. In Old Japanese *-eba* is a temporal. (8) is one of the earliest examples, where, given the contrast with *-aba*, has only a temporal interpretation.

- (8) (...) *kaheri misur-eba tsuki katabuki-nu.*
 (...) turn.around see-when moon setting-PRF
 ‘(...) When I turned around, I saw the setting moon.’ (*Manyooshuu*, 8th century; Shinzato 2015: 162)

Citing Matsumura (1971: 670), Shinzato (2015: 162) suggests that the conditional meaning of *-eba* emerged due to the collapse of the contrast between conditional *-aba* and temporal *-eba*. This collapse is well-known; see Hasada (1997: 279) and Hara (2019: 302) for a summary.

In addition to the collapse, future and generic contexts also likely account for how *-tara* ‘if’ and *-eba* ‘when’ began developing into a temporal and a conditional, respectively. As noted in Section 3.1, such contexts are bridging contexts where temporals and conditionals share functional equivalence. Fujii (2018: 562) also notes that generic contexts are “where conditionals and temporals are neutralized in Japanese”. Additionally, Martin (1975: 554) assigns to *-tara* the future meaning of

³ *-Aba* and *-eba* are sometimes segmented into *-a-ba* and *-e-ba*, where *-a* and *-e* are respectively ‘irrealis’ and ‘realis’ and *ba* is a particle, likely a topic marker etymologically, according to Ohori (1992) and Ohno (1982), cited in Hara (2019: 317). Following Martin (1975), Frellesvig (2010) and Bentley (2012), this segmentation is not adopted.

⁴ I leave aside the possibility that *-tara* originates from both *-tar-aba* ‘PRF-if’ and *-tar-eba* ‘PRF-when’ (Frellesvig 2010: 327; Shinzato 2015: 161; Unger 2011: 914), as *-tar-aba* ultimately becomes *-tara* ‘if; when’. See Section 4.1 for the loss of *-aba* and *-eba*.

“when (in the future)” and to *-eba*, the generic meaning of “whenever”, which likely reflect uses in their respective bridging contexts. Furthermore, *-tara* and *-eba* are formally equivalent in those contexts and beyond, as far as verbal morphology is concerned: they require that the protasis be tenseless and have “a fixed verb form” (Fujii 2018: 569), which prevents morphological differentiation between temporal and conditional protases that is otherwise available (Fujii 2018: 572). For example, (9) and (10) are bridging contexts where *-tara* may be interpreted as ‘if’ or as a future marker ‘when (in the future)’ and *-eba* as ‘when’ or as a generic marker ‘whenever’. The protases contain no markers specific to temporal or conditional protases.

- (9) *nihon e it-tara denwa shimasu.*
 Japan to go-**tara** call do
 ‘If/when (I) go to Japan, (I will) call (you).’ (Fujii 2018: 570)
- (10) *asa denki ga tsuk-eba niwa no inu ga*
 morning light NOM turn.on-**eba** backyard GEN dog NOM
isseini hoe-hajimeta.
 at.once bark-started
 ‘When(ever)/if the lights were turned on in the morning, the dog(s) in the backyard would start to bark all at once.’ (Fujii 2018: 562)

As *-tara* and *-eba* do not encode the distinction between positive and neutral stance (unlike *when* and *if*) and epistemic stance is frequently not explicitly signalled by their protases, it is sometimes not easy to determine whether *-tara* or *-eba* marks a temporal or conditional protasis in Modern Japanese (Fujii 2018: 570). The distinction between temporal and conditional, once clear in Old Japanese, is thus described as “blurred” (Hasade 1997: 279) and “neutralized” (Fujii 2018: 558) to some extent in Modern Japanese. Nevertheless, we do find clear examples of temporal *-tara* and conditional *-eba*.

In (11), the narrative about a one-off sequence of past events indicates that *-tara* is a temporal. (11) represents a switch context (Heine 2002), where, the original analysis (*-tara* as a conditional) is no longer plausible and the innovative analysis comes to the fore.

- (11) (...) *senaka wo nagashite-kudasee to it-tara... babaame ga*
 back ACC wash-give.IMP QUOT say-**when** hag NOM
tawashi wo motte kiyagatte o-senaka wo
 (pot)scrubbing.brush ACC bring came HOR-back ACC
araimashoo ka to nukashiyagaru.
 wash Q QUOT say
 ‘(...) When I said, “Please wash my back,” an old hag came with a (pot) scrubbing brush and said, “May I scrub your back?”’
 (Shinzato 2015: 163)

(12), also a switch context, shows that *-eba* is a conditional, as it marks a counterfactual conditional protasis (with a morphologically regular *-r-*).

- (12) *sōki ni shujutsu wo shitei-eba tabun yoku*
 early at surgery ACC do.ASP-if perhaps well
natteita darō.
 become.ASP.PST SFP
 ‘If (she) had had an operation at an early stage, she would have perhaps recovered.’
 (Fujii 2018: 561).

In summary, Old Japanese distinguishes between conditional *-aba* and temporal *-eba*. Their modern descendants, *-tara* and *-eba*, have blurred the distinction, both having temporal and conditional uses. Nevertheless, there are instances where *-tara* is clearly a temporal and *-eba* is a conditional, e.g. (11) and (12). Their histories thus represent Conditional > Temporal and Temporal > Conditional.

3.3 Mandarin

Protases in Mandarin may be single-marked by a clause-initial or clause-final connective, or double-marked by both clause-initial and clause-final connectives. This paper focuses on clause-final ones. Section 3.3.1 summarizes the literature on *shí* ‘when’ and its development from temporal to conditional. Section 3.3.2 reviews the literature on conditional *dehuà* ‘if’. Section 3.3.3 draws on corpus data to show that *dehuà* is developing into a temporal.

3.3.1 *Shí* ‘when; if’

Shí as a noun means ‘time’, but may be a clause-final temporal ‘when’. It developed into a clause-final conditional in Early Mandarin (Eifring 1995; Jiang 2002; Ōta 1958; Zhang 1990). According to Eifring (1995: 350), protases double-marked by a clause-initial conditional and clause-final *shí*, such as *ruò... shí* ‘if... when’, “are complex clauses expressing both time and condition simultaneously”, as in (13).

- (13) 若來時，如何祇對他？
ruò lái shí rúhé zhǐduì tā.
 if come **when** how answer him
 ‘If/when he comes, how should we answer him?’
 (*Zǔtángjǐ*, 10th century; Eifring 1995: 361)

Double-marked protases such as *ruò... shí* are likely bridging contexts. On the original analysis, *shí* functions as a temporal and co-marks the protasis with conditional *ruò* to indicate that the protasis refers to a future or generic event. On the innovative analysis, *shí* functions as a conditional and co-marks the protasis as a conditional protasis with *ruò*. The protasis, when referring to a future or generic event, may be marked simultaneously by a temporal and a conditional, because, as noted above, temporals and conditionals are functionally equivalent in future and generic contexts. Eifring (1995: 352, 365) also suggests that *shí* developed into a conditional from protases “referring to future situations... or general circumstances”. Note that protases marked by *ruò... shí* contain no markers specific to Chinese temporal or conditional protases.

The literature is not consistent in its description of double-marked protases. While protases marked by *ruò... shí* ‘if... when’ are described as bridging contexts here, the same protases have also been considered as pure conditional protases, where *shí* is decidedly a conditional (Jiang 2002: 293–294). Eifring is also inconsistent in this regard. Contra his own characterization of the protasis in (13) as “expressing both time and condition” (1995: 350), Eifring refers to some instances of *shí* in *ruò... shí* as a conditional that “does not express time at all” and “expresses pure condition” (1995: 353). He thus describes the protasis in (14) as conditional.⁵

- (14) 若發了病時,拿出來吃一丸...
ruò fā le bìng shí ná chūlái chī yì wán.
 if start PRF illness when take out eat one pill
 ‘If you get ill, take it out and take one pill...’
 (Honglougong, 1791; Eifring 1995: 362)

This inconsistency is likely due to the fact that protases marked by *ruò... shí* vary in epistemic stance, like the one marked by *-tara* in (9). While ‘he comes’ in (13) may be epistemically more positive, as the context suggests that the speaker is sure of it, ‘you get ill’ in (14) is epistemically more neutral, as the speaker is unlikely to suggest that the addressee will get ill. Regardless of exactly what kind of epistemic stance that protases marked by *ruò... shí* signal, this paper adopts the following position on what counts as evidence that a connective has become a conditional (or temporal): Only if a connective is the sole connective marking a conditional (or temporal) protasis is it considered as having become a conditional (or temporal). This position is more restricted than that of Eifring (1995) and Jiang (2002, 2004), who consider examples like (14) as sufficient evidence for *shí* as conditional.

⁵ A non-connective adverbial meaning such as ‘(at) this/that time’ is expressed by *shí* in conjunction with a demonstrative (e.g. *cǐ* ‘this’ or *bǐ* ‘that’) in non-clause-final positions.

Evidence for *shí* as a conditional comes from examples like (15), a switch context, where the protasis is a counterfactual clause marked solely by *shí* and the original interpretation of *shí* as a temporal is no longer available.

- (15) 早知道時, 探望去好來
zǎo zhīdào shí tàn wàng qù hǎo lái.
 early know **if** visit go good SFP
 “If I had known earlier, it would have been good to come visit you.”
 (*Pǔtōngshì*, late 14th to early 15th century; Eifring 1995: 352).

3.3.2 *Dehuà* ‘if’

The history of the clause-final conditional *dehuà* is well-known (Eifring 1995; Jiang 2004; Wang 2017; Yap et al. 2017). It originated from a nominalized structure *de huà*, where *de* is the nominalizer and *huà* means ‘speech; word(s)’. *X de huà* may mean ‘X’s word(s)’ or ‘word(s) about X’. *De huà* developed into a conditional in bridging contexts where it appeared in a protasis whose main verb is a verb of saying (Jiang 2004; Yap et al. 2017). For example, *shuō X de huà* means ‘say words about X; talk about X’. As it does not differ significantly from *shuō X* ‘talk about X’, when *shuō X de huà* appears in a protasis, *de huà* may be interpreted as a conditional. (16) is a bridging context. On the original interpretation, *shuō dǎ de huà* means ‘say words about fighting; talk about fighting’ and *jiù* ‘then’ marks the conditional sentence. On the innovative interpretation, *dehuà* and *jiù* both mark it.

- (16) 他再說打的話, 我就要見他的將主哩
tā zài shuō dǎ dehuà wǒ jiù yào jiàn tā de
 he again say fight **dehuà** I then want see he GEN
jiāngzhǔ li.
 commander SFP
 ‘If he says (any) words about fighting again, I will then see his commander (to report the matter).’
 (*Qílùdēng*, 1918; Yap et al. 2017: 3)

In Present-Day Mandarin, *dehuà* may be the sole marker of a conditional sentence, as in (17), a switch context, where its original interpretation is implausible.

- (17) 他不可以的話人家不会请他的
tā bù kěyǐ dehuà rénjiā bù huì qǐng tā de.
 he not capable **if** people not will hire him SFP
 “If he were not capable, people would not hire him.”
 (Wang 2017: 120)

Synchronically *dehuà* has three uses according to Wang (2017), who classifies it as a conditional when it marks something that carries propositional content, which is typically a clause, as in (17). It is classified as a (narrowly defined) topic marker when it marks a nominal phrase, e.g. *wǒ dehuà* ‘as for me’.⁶ As a discourse marker, *dehuà* occurs immediately after connectives such as *suǒyǐ* ‘therefore’ and *dànshì* ‘but’ (Wang 2017: 119). As *dehuà* in this function does not contribute to the proposition, it is sometimes considered as a pause-filler (Jiang 2004). In Wang’s (2017: 121) data, conditional *dehuà* is the most frequent use (328/438; 74.9 %). Section 3.3.3 will show that *dehuà* has an additional, albeit infrequent, use as a temporal.

3.3.3 *Dehuà* ‘when’

All 2,004 tokens of *dehuà* in the Academia Sinica Balanced Corpus of Modern Chinese were manually examined and two types of *dehuà* that have not been described in the literature were identified. The first type is where *dehuà* co-occurs with a clause-initial temporal such as *dāng* ‘when’ or *měi cì* ‘every time’. The second type is where it functions as a temporal on its own. Both types are infrequent: four tokens of *dehuà* co-occur with *dāng*, three co-occur with *měi cì* and three occur on its own. The second type likely develops from the first type.

In (18), *dāng* ‘when’ and *dehuà* mark the protasis. Similar to *-tara* and *ruò... shí*, protases marked by *dāng... dehuà* may oscillate between a temporal and conditional reading in future contexts like (18).

- (18) 當你遇到挫折的話,你不妨...
dāng nǐ yùdào cuòzhé dehuà nǐ bifáng.
when you encounter setback **dehuà** you might.as.well
 ‘When/if you experience a setback, you might as well...’

In (19), *měi cì* ‘every time’ and *dehuà* mark the protasis, which describes a generic event; specifically, a past habitual one.

- (19) 每次我打他的話就會跟爸爸講
měi cì wǒ dǎ tā dehuà jiù huì gēn bàba jiǎng.
every time I hit she **dehuà** then will with dad tell
 ‘Every time I hit her, she would tell Dad.’

6 Conditional protases are topics in general (Haiman 1978). This distinction between conditional *dehuà* and topic-marking *dehuà* does not deny the fact that conditional protases marked by *dehuà* are (broadly defined) topics or that conditional *dehuà* is a topic marker.

Protases marked by *dāng... dehuà* ‘when... if’ and *měi cì... dehuà* ‘every time... if’ parallel ones marked by *ruò... shí* ‘if... when’ (Section 3.3.1): they are double-marked protases referring to future or generic situations and containing no temporal-specific or conditional-specific markers. Such protases are by hypothesis bridging contexts where *dehuà* begins to be interpreted as a temporal. On the original analysis, *dehuà* is a conditional and co-marks the protasis with a temporal such as *dāng* or *měi cì* to indicate that the protasis describes a future or generic event. On the innovative analysis, the future or generic meaning of the protasis is co-marked by multiple temporals, *dāng... dehuà* and *mei cì... dehuà*. These uses of *dehuà* are not evidence that *dehuà* has become a temporal, as *dehuà* is not the sole marker.

(20)–(22) are switch contexts where *dehuà* is the sole marker of a temporal protasis. In (20), the first clause refers to a specific past point in time and is marked by a clause-final temporal *deshìhòu* ‘when’. The clause is immediately rephrased by a clause marked by *dehuà*.

- (20) 所以剛開始來這邊的時候,我還開始的話,我還覺得跟港澳生比較親近
suǒyǐ gāng kāishǐ lái zhèbiān deshìhòu wǒ hái gāng
 so just start come here when I still just
kāishǐ dehuà wǒ hái juéde gēn gǎng ào shēng bǐjiào
 start **when** I still feel with Hong.Kong Macao student more
qīnjìn.
 close

‘So, when I had just begun coming here, when I had only just begun, I felt closer with students from Hong Kong and Macao.’

(21) is a transcribed passage from a TV show. Prior to (21), the host asked the audience a multiple-choice question. After they finished choosing, she asked what they had chosen and why. The speaker then uttered (21), where the protasis marked by *dehuà* refers to the time when the audience were choosing.

- (21) 我想剛剛選擇的話,很多人都選擇第二個
wǒ xiǎng gānggāng xuǎnzé dehuà hěnduō rén dōu xuǎnzé dìèr ge.
 I think just.now choose **when** many people all choose second CLF
 ‘I think when we were choosing just now, many people chose the second one.’

In (22), Speaker A and Speaker B are discussing where to go to eat after Speaker A finishes their exam. Speaker A stutters and utters a protasis marked by *dehuà*, but is then interrupted by Speaker B before saying the apodosis.

- (22) A: 要不然你們先去,然後考,考,我考完的話
 yàobùrán nǐmen xiān qù ránhòu kǎo kǎo wǒ
 what.if you.all first go and take.exam take.exam I
 kǎo wán **dehuà**.
 take.exam finish **when**
- B: 你考完了去剛好沒有東西好吃
 nǐ kǎo wán le qù gānghǎo méi yǒu
 you take.exam finish PFV go just.so.happens have not
 dōngxī hào chī.
 thing good eat
 ‘A: What if you all go first and when I am done with, with... the exam...’
 ‘B: (When) you are done and come over, there will be nothing good left to eat.’

Dehuà in (22) is a temporal rather than a conditional. That Speaker A will finish the exam is a piece of knowledge shared by both parties and the crux of their interaction is to decide where to go when, not if, Speaker A is done.

To summarize, similar to what has been said about Chadic languages, Japanese and *shí* in Early Mandarin, functional equivalence between temporal and conditional in generic and future contexts likely enables conditional *dehuà* to become a temporal. Specifically, *dehuà* occurs with *dāng* ‘when’ or *mei cí* ‘every time’ to co-mark protases referring to generic and future events and develops into a temporal from these uses. There is also formal equivalence between temporal and conditional in Mandarin in that they are typically not differentiated by grammatical markers. Mandarin, an isolating language known for its paucity of grammatical markers, generally has few category-specific markers at its disposal. For example, distancing through TAM markers in conditional protases is not available (Li and Thompson 1981: 647).

Finally, one might question whether temporal *dehuà* indeed develops from conditional *dehuà*, given that *dehuà* has other uses (Section 3.3.2). While a multiple-source scenario cannot be completely ruled out, of the three uses identified by Wang (2017), conditional *dehuà* is the most likely immediate source of temporal *dehuà*. Both conditional and temporal *dehuà* mark clauses (whereas *dehuà* as a topic-marker marks nominals) and contribute to the proposition (whereas *dehuà* as a discourse marker does not). One might also question whether temporal *dehuà* is an innovation. It is highly likely one because it is neither attested in the Academia Sinica Corpus of Early Mandarin (7th–19th centuries) nor documented in the literature. Neither Wang’s (2017) synchronic study of *dehuà* nor Jiang’s (2004) diachronic one mentions temporal *dehuà*. *Dehuà* is unambiguously classified as a conditional in Eifring (1995: 373), a monograph that examines the synchrony and diachrony of connectives in Chinese. It even juxtaposes *dehuà*

and a temporal at one point (1995: 74), but does not mention any temporal use of *dehuà*.

4 Discussion

Section 4.1 casts doubt on the data presented in Section 3, but ultimately concludes that Conditional > Temporal is a plausible process. Section 4.2 discusses the implications of Conditional > Temporal for unidirectionality and grammaticalization. Section 4.3 proposes that non-unidirectional grammatical change may be regular if enabled by morphosyntactic vagueness, which is defined by grammatical equivalence.

4.1 Skepticisms about Conditional > Temporal

One could dismiss the findings presented in Section 3 in the following ways. The Chadic data are not diachronic. The Japanese data involve the obsolescence of the contrast between *-aba* and *-eba* and the obsolescence of “a particular morphosyntactic subsystem” has been proposed as an atypical factor (Willis 2017: 38). The Mandarin data are infrequent. But there are counterarguments to consider.

First, a certain degree of skepticism about the Chadic data is warranted, but much of the literature on grammaticalization relies on synchronic and comparative data, rather than primary diachronic sources. Studies that Kuteva et al. (2019: 426–427) cite as evidence for the unidirectionality of Temporal > Conditional are no exception, e.g. Bright (1957), Traugott (1985) and Hollenbach (1995). Frajzyngier’s reconstruction therefore does not carry less weight than such studies.

Second, genitive *-s* in English is known to have undergone degrammaticalization (Norde 2009): Previously a suffix, it is a clitic now. *Muid(e)* ‘we’ in Irish was an agreement suffix, but is an independent pronoun now (Doyle 2002). Willis (2017) attributes these cases of degrammaticalization to obsolescence: the case system was obsolescing as *-s* was becoming a clitic; so was the agreement system of Irish as *muid(e)* was emerging. One might resort to obsolescence to ‘explain away’ Conditional > Temporal in Japanese: *-tara* ‘when; if’ (<*-taraba* ‘if’ < *-tar-* ‘have’ + *-aba* ‘if’) arose as the result of the collapse of the paradigmatic contrast between *-aba* ‘if’ and *-eba* ‘when’. However, the analogy is less than perfect. While *-s* and *muid(e)* rose above the wreckage of their respective paradigms as sole survivors, both *-tara* and *-eba* have survived and become more similar (both may mean ‘if; when’). That is, both Conditional > Temporal and Temporal > Conditional were implicated in the collapse. Therefore, we cannot use the collapse to write off Conditional > Temporal in Japanese

as something atypical, without simultaneously challenging the supposed typicality of Temporal > Conditional, as far as Japanese is considered.

Third, the low frequency of temporal *dehuà* might merely reflect the incipient nature of the change and the sociolinguistically conditioned distribution of temporal *dehuà*. It does not necessarily indicate that Conditional > Temporal is a less plausible process than Temporal > Conditional. Grammaticalized grams may have low frequency and low frequency items may grammaticalize (Hoffmann 2005).

In sum, Conditional > Temporal is a plausible process that has been recurrent in at least three unrelated language families. Additionally, the plausibility of Conditional > Temporal warns against using Temporal > Conditional as a heuristic for linguistic reconstruction. For general caution against using unidirectionality in reconstruction, see Norde (2009) and Willis (2017). Like the connectives discussed in Section 3, Korean *-myense* ‘when’ and *-myen* ‘if’ are a cautionary tale. Using unidirectionality as a heuristic, we might hypothesize that *-myense* ‘when’ developed into *-myen* ‘if’ via two unidirectional processes: bleaching, whereby the less schematic temporal meaning gave away to the more schematic conditional meaning, and formal reduction, which frequently happens to grams (e.g. *be going to* > *be gonna*). However, this hypothesis is false. Koo (1999: 547–548) shows that *-myen* became a general conditional by the 17th century, while Ahn and Yap (2014: 314) note that *-myense* arose at the beginning of the 18th century. The morphological relation between *-myen* and *-myense* is also not one of reduction, but derivation: *-se* turns an irrealis marker into a realis one (Strauss 2003).

4.2 Directionality of change

Issues arise as soon as we recognize Conditional > Temporal as a plausible and recurrent process. Is it unidirectional, counterdirectional or something else? What kind of generalization can we propose to capture the directionality of change involving temporals and conditionals? Note that unidirectionality could be construed as an absolute notion that is falsified by just one counterexample. I am construing it as a strong, but not exceptionless tendency, following, among others, Heine et al. (2017), Kuteva et al. (2019) and Norde (2009: 2), who remarks: “the strongest version of the unidirectionality hypothesis (“there is no degrammaticalization”) appears to have been abandoned in almost all current theorizing.”

First, if we assume a hierarchical model of language (Section 2) and the theory that grammatical change involves increased grammaticality, which is typically how it is conceptualized (Hopper and Traugott 2003; Lehmann 1995), going back to Kuryłowicz (1965), Conditional > Temporal would be considered ‘counterdirectional’ or a case of ‘degrammaticalization’ (Norde 2009), as this process leads to a less

grammatical gram. Temporal > Conditional could still be considered as unidirectional: it is the default scenario, i.e. how we would typically expect grammar to change. On this basis, we could further argue that Temporal > Conditional is statistically more likely than Conditional > Temporal, if we take all the languages cited in Traugott (1985) and Kuteva et al. (2019) at face value as evidence for Temporal > Conditional. This is not unproblematic, given their bias for unidirectionality. Counterdirectionality was not well-established at the time of Traugott (1985). Kuteva et al. (2019) cite Frajzyngier's (1996) data in support of Temporal > Conditional, but ignore his evidence for Conditional > Temporal.

Second, all the cases in Section 3 involve not only Conditional > Temporal, but also Temporal > Conditional. Bearing in mind their bias, presumably most languages cited in Kuteva et al. (2019: 426–427) involve only Temporal > Conditional, but not Conditional > Temporal. This allows us to formulate an implicational hierarchy: Conditional > Temporal implicates Temporal > Conditional, but not vice versa. That is, Conditional > Temporal is attested in a language if and only if Temporal > Conditional is also attested; where Temporal > Conditional is not attested, neither is Conditional > Temporal.

Both proposals incur theoretical costs. They downgrade the status of unidirectionality; an especially harsh caricature of them would be: Temporal > Conditional is unidirectional unless it is not (i.e. unless Conditional > Temporal occurs). The role of hierarchy is also downgraded: one might need to relax the rigid hierarchical order, whereby conditionals are higher than temporals (Section 2), to accommodate the fact that conditionals may develop into temporals in some languages or that some temporals may be higher than conditionals. These might be the prices that one is willing to pay to preserve the overall predictive power of unidirectionality and/or hierarchical models. This is the position that Kuteva et al. (2019) would take, who acknowledge counterexamples to unidirectionality and yet still give it pride of place. However, it might seem more appealing to consider an alternative proposal that conceptualizes grammatical change independently of notions such as increased grammaticality, hierarchy and unidirectionality.

4.3 Morphosyntactic vagueness, bidirectionality and regularity

This proposal has two parts: first, morphosyntactic vagueness, defined by grammatical equivalence in bridging contexts, may enable bidirectionality (Section 4.3.1); and second, bidirectionality, if enabled by vagueness, is regular (Section 4.3.2). If grammaticalization is defined as regular, but not necessarily unidirectional, it may be bidirectional. Finally, counterarguments are considered (Section 4.3.3).

4.3.1 Morphosyntactic vagueness and bidirectionality

While grammatical change is typically conceptualized in terms of non-equivalence (e.g. unidirectionality or increased grammaticality), it is proposed here that when enabled by grammatical equivalence between two categories in bridging contexts, it may not be unidirectional, but bidirectional. This has been stated in Section 3: the conditionals and temporals likely became temporals and conditionals, respectively, in bridging contexts where temporals and conditionals are formally and functionally equivalent. Such contexts have been characterized as where two grammatical categories are ‘morphosyntactically vague’ (Kuo 2021), a kind of gradience associated with word classes (e.g. Keizer 2023). That is, the typical grammatical contrast between two categories is neutralized and underspecified in such contexts, but no specification is required for communication (Denison 2017, 2018). Therefore, instances of one may become the other and vice versa. This notion of vagueness contrasts with that of ambiguity, where specification is presumably at stake (e.g. in the case of *bank* ‘financial institute; river bank’); see also Tuggy (1993) for the distinction between vagueness and ambiguity. Morphosyntactic vagueness also differs from morphosyntactic hybridity. The former involves shared features, but no category-specific ones, while the latter involves (what would typically be) conflicting features (e.g. English gerunds have nominal and verbal properties; Hudson 2003).

Note that members of two grammatical categories may be vague in bridging contexts, but this does not entail that they do not appear in non-vague contexts, or that similar members must be uniformly (non-)vague. For example, Japanese *-eba* and *-tara*, vague between temporal and conditional, may appear in non-vague contexts where a co-occurring connective like *moshi* ‘in case’ specifies the protasis as conditional (Hasada 1997). Furthermore, members of two grammatical categories are only equivalent in bridging contexts as far as the relevant category features are considered: they share a set of features that allow them to be simultaneously classified into two categories, which does not rule out the possibility that each expression may carry its own unique features.

There is growing research showing that what is typically grammatically distinctive may be vague in some (not necessarily bridging) contexts and that grammatical change may indeed involve equivalence. For example, even though proper nouns and genitives in general are distinctive, Rosenbach (2019) argues that in contexts where they express adnominal possession and alternate with each other (e.g. *the FBI director* and *the FBI’s director*), they are equivalent. Rosenbach (2010) has also shown that their equivalence is the result of diachronic development. In various grammatical hierarchies, conditionals are more grammatical than modals. However, using distributional criteria that define Mandarin modals and conditionals respectively (Eifring 1995; Li and Thompson 1981), Kuo (2020, 2021, 2022, 2024, 2025a, 2025b)

show that some Mandarin constructions (in the sense of Goldberg 1995) constitute bridging contexts where modals and conditionals are equivalent. Such constructions formally possess no distributional patterns that distinguish between modals and conditionals and functionally express directive speech acts, which both modals and conditionals can perform. Bidirectional changes in such constructions therefore have happened to multiple modals and conditionals in Mandarin. Frajzyngier (1996), much overlooked in the literature, also draws on formal equivalence (his ‘coding constraints’) as well functional one (i.e. future contexts) to explain bidirectionality.⁷

The implication of morphosyntactic vagueness for a hierarchical view on grammar is that, while hierarchies of grammatical categories may be powerful generalizations about linguistic structure and change, they are not immutable or fully specified in every context. That is, what are otherwise hierarchically ordered, distinctive categories (e.g. modals, temporals and conditionals) may not necessarily be differentiated in local contexts. This is in line with the usage-based, constructional view, which has emphasized, using actual usage data, the limits of high-level generalizations made by linguists (such as grammatical categories and parts of speech) and instead proposed partial generalizations, subregularities and pockets of (ir)regularity and (un)productivity (e.g. Cappelle 2014; Hilpert 2015; Sommerer and Baumann 2021). See also Croft (2001) for a constructional view on grammatical categories and Kuo (2021, 2024) and Kuo and Dietrich (Forthcoming) on morphosyntactic vagueness.

4.3.2 Bidirectionality as regular

What implications are suggested by the hypothesis that morphosyntactic vagueness may enable bidirectional grammatical change? The traditional view on regular grammatical change is that it is unidirectional and to a significant extent synonymous with grammaticalization (e.g. Kuteva et al. 2019). Grammatical change that is non-unidirectional is not typically regarded as regular or as grammaticalization. It is not my intention to challenge unidirectionality as one way of characterizing regular grammatical change. However, it should not be the only way. For example, Traugott and Trousdale (2013) have conceptualized grammatical change in terms of construction grammar; see also Trousdale and Norde (2013) and Gildea and Barðdal (2023).

⁷ Joseph’s (2005) ‘lateral shifts’ refer to cases where the source and outcome items are equal in grammatical status. They are different from the cases considered here: outside bridging contexts, the grams (modals, temporals and conditionals) have different grammatical statuses. Furthermore, bridging contexts are typically construed as ambiguous, rather than vague. This issue lies outside the scope of the paper; see Kuo and Dietrich (Forthcoming).

Bidirectionality, if enabled by vagueness, should also be a plausible way of conceptualizing regular grammatical change. That is, bidirectional grammatical change should not be dismissed as irregular and thus counterdirectional just because it is not unidirectional. Two arguments support this view. First, there is nothing irregular about bidirectional processes if they originated in bridging contexts where we observe properties shared between two categories. Second, (mis)characterizing such bidirectional processes (or processes in one direction) as irregular or counterdirectional is using notions of non-equivalence to conceptualize processes involving equivalence. Consider in more detail Kuo's (2024) analysis of Mandarin modals and conditionals. Functional equivalence between them is observed not just in Mandarin, but also across languages. For example, Kratzer (2012) and van der Auwera (1985) analyze *if* as modal; See Kuo (2025a, 2025b) for more reviews. Their formal equivalence in the constructions where bidirectional changes happened is a panchronic, distributional fact about them in Mandarin. There is therefore nothing irregular or non-equivalent about such bidirectional processes: they originated in vague contexts where modals and conditionals shared functional and formal properties. Similarly, if temporals and conditionals begin developing into each other in contexts where their morphosyntactic distinction is vague, owing to formal and functional equivalence, any direction of development that leads one to the other should not be considered irregular, either.

Even if we accept that bidirectional grammatical change may be regular, it does not necessarily mean that grammaticalization may be bidirectional, since notions of non-equivalence such as unidirectionality and increased grammaticality are frequently built into the definition of grammaticalization. If grammaticalization is defined in terms of non-equivalence, as conditionals are more grammatical, Temporal > Conditional is grammaticalization and Conditional > Temporal is degammaticalization. However, if we assume what I regard as the most essential definition of grammaticalization, “the genesis and development of grammatical forms” (Kuteva et al. 2019: 3) that is “a regular and directional process” (Heine et al. 2017: 1), grammaticalization may be bidirectional, if enabled by morphosyntactic vagueness between grammatical categories (e.g. modals, temporals and conditionals) in bridging contexts. That is, the supposed regularity and directionality of grammaticalization need not be unidirectionality.

4.3.3 Counterarguments and counterevidence

Objections to the preceding discussion may be raised. One may argue against the existence of vagueness or the suggestion that it is typical. Vagueness is typical, assuming a functional perspective on grammar, particularly a usage-based or emergentist one. Langacker (2009b) observes that grammar is vague or

indeterminate to a significant extent, because meaning, which motivates grammar, is itself open-ended and variable. Hopper (2011: 26) remarks that “a grammatical structure is always temporary and ephemeral” and “[this] provisionality of grammar follows directly from the decision to study spoken language in its natural setting”; see also Hopper (1987). That is, morphosyntactic structure is highly malleable, open to (re)interpretation and contextual negotiation. This discourse-driven view is compatible with the observations made about vagueness in this paper: morphosyntactic structure (e.g. the hierarchical ordering of temporals and conditionals) is not as distinctive as assumed in non-usage-based theories, but potentially neutralized contextually. In the absence of any formal and functional differentiation, vagueness is the default, if not the only plausible, interpretation in a natural discourse setting.

Furthermore, all else being equal, vagueness is a more economical way of describing and theorizing about morphosyntax. If no formal or functional category differentiation is observable, an item is vague, whereas it is more theoretically costly and even descriptively inappropriate to insist on any distinction in such a scenario. One could make the theoretical commitment that vagueness is atypical or irregular, but this presupposes a syntactocentric theory where grammatical categories, even if unexpressed, ought to be distinctive in all contexts, which a functionalist theory, particularly a usage-based, emergentist or variationist one (e.g. Croft 2000; Rosenbach 2019) would object to. Such a commitment would also require one to assign a vague item to one and only one of its possible categories arbitrarily. See also Denison (2010, 2017, 2018), Kuo (2025a, 2025b) and Kuo and Dietrich (Forthcoming) for the challenges of vagueness for morphosyntactic description and analysis.

Finally, the hypothesis that morphosyntactic vagueness enables bidirectional change would be challenged by examples where bidirectional processes happen recurrently in distinct language families despite clear morphosyntactic differentiation.

If they do not happen recurrently, we might be dealing with two processes, a unidirectional one and a counterdirectional one. They would fall under the traditional framework of conceptualizing grammatical change. The specific cases discussed in this paper would be challenged if the temporals and conditionals turned out to carry category-specific features in contexts where they changed. No such features seem present in the data, however.

5 Conclusions

The development from temporal to conditional is not as strictly unidirectional as previously thought, as conditionals have developed into temporals in three unrelated

families, Chadic, Japonic and Sinitic. This is despite the fact that conditionals are more grammatical than temporals and therefore we would expect temporals to develop into conditionals. Morphosyntactic vagueness between temporals and conditionals in bridging contexts in the languages is hypothesized to characterize and enable both directions of development, from temporal to conditional and vice versa. Morphosyntactic vagueness is defined by grammatical equivalence, i.e. formal and functional properties shared equally between categories in specific contexts. Therefore, rather than using notions of non-equivalence to brand either or both directions as counterdirectional and thus somewhat irregular or atypical, it is proposed that both directions of development in the languages are regular processes of grammatical change. If grammaticalization is defined as a regular process, but not necessarily a unidirectional one, grammaticalization may be bidirectional if enabled by morphosyntactic vagueness. That is, regularity need not be unidirectionality.

Non-Leipzig abbreviation

SFP sentence final particle

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