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## **Counterfactuality without Past Tense**

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## 1. Overview: The Past Tense as an Exclusion Operator

Counterfactual conditionals have merited a great deal of linguistic investigation for at least two reasons<sup>1</sup>. First, their overt expression in morphology, frequently derived from the inventory of *tense and aspect*, has prompted many formalizations -- why are the particular morphemes that are chosen used, and how do they combine to contribute the counterfactual meaning? Second, their precise semantic characterization often leads to many philosophical and pragmatic questions of considerable interest, including the nature of the *cancelability property* and other aspects of possible-world conditionality -- what does a speaker's use of the counterfactual communicate about the truth or falsity of the *if*-clause in the actual world?

These two sets of questions have been in a large part pursued independently, yet receive a compelling synthesis in Iatridou (2000). Following a thorough investigation of many Indo-European languages, Iatridou analyzes the use of past-tense morphology throughout counterfactuals (CFs), which occurs regardless of the time of the eventuality. In (1), example (a) is a PastCF, example (b) is a PresCF.

- (1) English Counterfactuals employ Past Tense:
  - (a) If Casey had bought a ticket, he could have come with us.
  - (b) If Casey only took this medicine, he would get better.

Notice that in (1a), the pluperfect is used. By hypothesis, one layer of past tense is signalling counterfactuality, while another one layer is placing the eventuality in the temporal past. A speaker who utters (1a) implies that Casey did not buy a ticket, and that he cannot come with us. A speaker who utters (1b) implies that Casey is not taking, and

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I would like to extend great thanks to Brent de Chene, Danny Fox, Irene Heim, and especially Sabine Iatridou for their encouragement and contribution to the ideas discussed here. I would like to also acknowledge Asaf Bachrach, Assaf Biderman, Mark Cuezon, Dan Hu, James Huang, Michela Ippolito, Tatjana Marvin, Paz Mendoza, Andrea Rackowski, Norvin Richards, Julian Wheatley, and Charles Yang for their contributions to the empirical data presented. Needles to say, any errors of omission or commission are mine.

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most likely, will not take, his medicine, and that as a consequence, he won't get better. Iatridou argues that the past tense performs the task of signalling the falsity of the antecedent. Why the past tense? Iatridou formalizes past tense morphology as an exclusion operator.

The exclusion operator is one of the general schema Topic(x) excludes C(x), where C(x) is the x of the speaker. Thus, temporal exclusion results in the past tense, where the topic time(s) exclude(s) the utterance time(s). Modal exclusion results in counterfactuality, where the topic world(s) of the antecedent exclude(s) the utterance world(s), or actual world(s).

Counterfactual morphology, then, becomes the reuse or co-opting of an exclusion operator used in one domain to perform the same exclusion relation in another domain. If this view of counterfactual morphosemantics is on the right track, then in principle, we should expect to find exclusion operators from any domain as markers of counterfactuality. Preliminary research suggests that in Burmese, a spatial displacement operator, *khe* (first analyzed as such in Wheatley 1982), is used in the modal domain to mark counterfactuality, bolstering further support for the Iatridovian exclusion-operator hypothesis.

- (2) Burmese Counterfactuals employ Spatial Exclusion:
  - (a) m<sup>w</sup>ei chau? khé Re snake scare KHE decl.
    - '(I) scared a snake [in another place before I arrived here]'
  - (b) shèi θau? khé yin, nei kàun la gé léin-me medicine drink KHE if, stay good come KHE predictive-irrealis 'If he took the medicine, he would have gotten better'

The examples above illustrate that  $kh\acute{e}$  can be analyzed as a generalized exclusion operator, in the spatial domain (2a), giving rise to geographic distality, as well as in the modal domain ((2b), example from Nichols 2002), giving rise to counterfactuality in the manner schematized quite generally by latridou. However, not every language has an exclusion operator to employ, whether that of past tense or spatial distality. We turn our attention to the question of how counterfactuality is expressed in languages without an overt temporal exclusion operator, and whether the resulting implicatures of counterfactuality ultimately result in the same as those in counterfactuals that use an exclusion operator.

## 2. Counterfactual Morphology without use of Past Tense

## 2.1. Specialized Counterfactual Complementizers

The extensive survey of Indo-European counterfactual form and meaning in Iatridou (2000) focuses exclusively on languages that have overt past tense morphology. The question immediately arises as to how counterfactuality is signalled in languages that do not have past tense morphology (or any overt realization of tense, as in the case of

Mandarin Chinese<sup>2</sup>). This section introduces the existence and use of specialized, or "dedicated" counterfactual markers that serve to signal the falsity of the antecedent. In every case we discuss, these specialized markers occupy the syntactic position of the complementizer; they can be readily understood as counterfactual versions of an otherwise neutrally conditional "if". We will consider such complementizers in Chinese, Tagalog, Slovenian, Hebrew, and Turkish. The existence of the such counterfactual markers in a wide array of unrelated languages weighs heavily in favor of the generalization that the use of a specialized complementizer is a legitimate option for expression of counterfactuality as an alternative to use of the exclusion operator.

## 2.2. Chinese yaobushi

The specialized complementizer in Chinese is yaobushi, which can be morphologically decomposed as "if+not+that". It differs from the purely hypothetical ruguo-type conditionals discussed in Cheng & Huang (1996) in that it simply cannot be used in non-counterfactual environments<sup>3</sup>. In addition, what is implicated in the antecedent is not the falsity of an eventuality p, but rather the falsity of  $\neg p$  (or alternatively, the truth of p in the actual world). In other words, yaobushi introduces a proposition in a way that can be paraphrased with the English "if not for the fact that...". An example of yaobushi CFs in all three tenses should make the preceding description clearer.

- (3) Chinese yaobushi introduces PresCF, PastCF, Future-Less-Vivid counterfactuals<sup>4</sup>:
  - (a) Yaobushi ta he le neige duyao, ta jiu bu hui si le If-not-that he drank Perf. that poison, he then not will die Perf.
  - 'If he hadn't drank that poison, he wouldn't have died.'
  - (b) Yaobushi Lisi you qian, tade nupengyou jiu bu hui dasuan gen ta jiehun If-not-that Lisi had money, his girlfriend then not will plan with him marry 'If Lisi didn't have money, his girlfriend wouldn't plan to marry him.'
  - (c) Yaobushi ni qu Jiazhou, women keyi mingtian wanshang zai zheli war. If-not-that you go California we could tomorrow night at here have-fun 'If you weren't going to California, we could have fun here tomorrow night.'

The meaning of the PastCF yaobushi P, jiu Q can be characterized as "P happened, and Q didn't happen. If it were not the case that P, then (contrary to fact) Q." One point about hui, the modal in the consequent, is worth making; it is glossed as "will"

While we will not review the dated and questionable literature of the mid-to-late twentieth century that assumes that Chinese speakers cannot perform the mental computations involved in counterfactual conditionals, the evidence presented here should provide ample means to dismiss such claims.

The incompatibility of *yaobushi* with non-CF conditionals can be illustrated in the following example:

<sup>(</sup>i) Hypothetical conditionals cannot co-occur with yaobushi: Yaobushi ni gen wo lai kan dianying, wo jiu hui yi-ge ren qu If-not-that you with me come watch movie, I then will one-CL person go \*'If you don't come with me to the movie, I will go alone'

<sup>√&#</sup>x27;If you weren't coming with me to the movie, I would go alone'

I omit lexical tone diacritics in these examples for ease of reading and formatting. Interested readers are welcome to contact me with inquiries.

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but its translation into the English is necessarily "would". That is, modals, as do main verbs, do not bear tense (or subjunctive marking) in Chinese. As a result, the consequent of the counterfactual does not bear any counterfactual or irrealis marking, but is nonetheless interpreted as counter-to-fact. That is, an interlocutor, upon hearing (3a), will draw the conclusion that the poison-drinker has indeed passed away. The fact that the consequent of a yaobushi-conditional bears no counterfactual marking presents an interesting finding in light of Iatridou's (2000) generalization that both the antecedent and consequent are marked with exclusion-operator past-tense in CFs<sup>5</sup>. We will return to the pragmatic contribution of yaobushi to the interpretations of the falsity of its propositions in the Section 4, and note at present its existence as the counterfactual marker par excellence in a language without overt past tense to otherwise employ for such purposes.

Finally, I will mention that the unambiguously counterfactual nature of these constructions is uniquely determined by the specialized complementizer, without any contribution from aspectual morphology. Iatridou discussed the role of imperfective aspect in signalling CF conditionals in certain linguistic contexts, as a secondary morphological expression of counterfactuality. In *yaobushi*-constructions, there is no "fake aspect": when imperfective *zai* co-occurs, the verb carries a progressive interpretation.

(4) Aspectual Integrity within yaobushi counterfactuals:
Yaobushi ta zai xie lunwen, jiu hui bang wo mang
If-not-that she Imperf. write thesis then will help me help-obj.
'If she weren't writing her thesis, then she could help me.'

#### 2.3. Tagalog kung...sana

Overt past tense morphology is absent in Tagalog as well as Chinese. In lieu of this means to express counterfactuality, Taglog also uses a specialized complementizer, kung, in CFs, with the obligatory co-occurrence of the optative particle sana in the consequent (Rackowski 1998). In addition to kung, Schacter & Otanes (1972) note a morphological compound formed by kung with the negation particle hindi, surfacing as kundi. I analyze the form and meaning of kundi as a counterfactual complementizer essentially identical to vaobushi.

(5) Tagalog kundi: A Specialized Counterfactual Complementizer:
Kundi napakalayo ng Maynila, papag-aaralin ko sana siya roon.
If-not-that very-far Case. Manila, cause-study I SANA him there.
'If Manila weren't so far away, I'd send him to study there.'

Both *kundi* and *yaobushi* can be given analyzed as universal quantifiers, based on a Kratzerian treatment of conditionals in which the ¬p worlds provide the restrictor for the q worlds. The conclusion that 'for all worlds in which ¬p holds, q holds', however, is

Moreover, the case at hand provides an interesting flipside to Krause (2001), where it is shown that Navajo counterfactuals show marking in the consequent, but not the antecedent.

In fact, while *sana* is glossed as an optative particle and is often used in constructions expressing "hope", a counterfactual uttered about the lucky non-occurrence of a typhoon damaging the infrastructure of Manila would have *sana* in its consequent as well.

not enough, however: the meaning of these constructions must somehow exclude the actual world(s) from both the  $\neg$ p-worlds and the q-worlds<sup>7</sup>. As promised, we return to the presupposition of this exclusion for both Chinese and Tagalog in Section 4.

#### 2.4 Slovenian da

Slovenian has two complementizers in conditionals. Marvin (1999) demonstrates that that bi has the distribution of a hypothetical "if", while da has the distribution of a strictly counterfactual "if". The verb of the antecedent and consequent occurs in the indicative mood, with the appropriate tense for the eventuality described.

- (6) Slovenian da: No Use of Past Tense to Express Counterfactuality:
  - (a) Da imam, bi ti posodil. that have-1.sg.pres would to-you lend-sg.masc. 'If I had it, I would lend it to you'
  - (b) Da je bilo deZevalo, ne bi bili Sli ven. that is be-part-3sg rain-part.3.sg not would be-part-pl go-part-pl out 'If it had rained, we wouldn't have gone out.'

The Slovenian examples in (6a,b) thus provide a further case of a specialized CF complementizer, whose cancelability properties we shall revisit in Section 4.

## 2.5 Hebrew ilu

Modern Hebrew, like Slovenian, has two complementizers: im and  $ilu^9$ . Their usage closely parallels those of Slovenian: im is used in hypothetical conditionals (and can be used in CFs, with two layers of past tense), while ilu can only occur in the complementizer position of a counterfactual conditional. The Hebrew case is illustrative of the particular role that specialized CF complementizers have in obviating the need for an extra layer of past tense. The contrast is illustrated in the following example.

Although the goal of this paper is to explore the interaction of non-EM languages with noncancelability and remain agnostic as to the particular implementation within one framework of semantic composition over another, I will provide a Heim-and-Kratzer style denotation of the complementizer for the more lambda-thirsty of readers:

<sup>(</sup>ii) For any possible world w,  $[[\mathbf{yaobushi}]]^{w} = \lambda P \in D_{\leq_{k,P}} . [\lambda Q \in D_{\leq_{k,P}} . [P(w) \land \neg Q(w) \land ^{aubj} \rightarrow (P,Q,w)]]$ 

Where  $^{subj} \rightarrow (P,Q,w)$  is  $[[P^{subj} \rightarrow Q]]^w$ , the semantics of which are those of the subjunctive conditional in von Fintel (1998).

The complementizer da is not restricted only to counterfactual conditionals; it is used, for example, to introduce the complement of factive verbs. The point at hand remains, however: when introducing conditionals, it always signals counterfactuality.

While many Modern Hebrew speakers may insistently deny having *ilu* in their vocabulary, comparing its archaic status to approximately that of a word like *nary* in English, one only needs to ask speakers for a translation of *Fidder on the Roof's* "If I were a rich man", whereupon they will clearly admit to an understanding of *ilu*'s counterfactual nature in the refrain: "Ilu hayah Rothschild...". Similar verifications can be made with the translation of *Let it Be*.

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- (7) Hebrew im versus ilu; the former needs an exclusion operator, the latter doesn't:
  - (a) Im hu hayah lokeach /\*lakach et ha trufah, hu hayah mevri IM he had taken /\*took dir-obi, the medicine he would-be healthy
  - (b) Ilu hu hayah lokeach /lakach et ha trufah, hu hayah mevri ILU he had taken /took dir-obj, the medicine he would-be healthy

Past counterfactual conditionals introduced by *im* must have two layers of past, and cannot occur in the simple past, since, by hypothesis, one layer of past morphology performs the exclusion relation. However, PastCFs headed by *ilu* can occur with only one layer of past, because *ilu*'s status as a specialized CF marker already accomplishes the task of signalling the falsity of the antecedent.

#### 2.6 Turkish se...di

In Turkish, conditional morphology is affixed to the main verb and consists of two morphemes: the past and the conditional. That is, there is no independent complementizer. Our current interest lies in the fact that these morphemes can occur in two distinct orders. Complementizer-first is counterfactual, while counterfactual-last is hypothetical. (8) provides an example with the relevant contrast in boldface (Ippolito 2001):

- (8) Turkish conditionals exhibit two possible morpheme orders:
  - (a) Abelard Eloise-e dün çiçek ver- se- y-di, Eloise mutlu ol-ur-du Abelard E-dat yesterd. flowers give-cond-cop-past E. happy be-aor-past 'If Abelard had given flowers to Eloise yesterday, Eloise would have been happy.'
  - (b) Abelard Eloise-e dün çiçek ver-di-y-se, Eloise mutlu ol-muç-tur Abelard E-dat yesterd.flowers give-past-cop-cond E. happy be-perf-cop 'If Abelard gave Eloise flowers yesterday, Eloise must have been happy.'

As the English translations suggest, (8a) is counterfactual, and conversationally implicates that Abelard didn't give the flowers, while (8b) leaves the possibility open; the speaker does not purport to know. In Section 4, we will examine the pragmatic nature of these two surface orderings in more detail.

In this section, we have reviewed the morphological form of counterfactuals in five languages, all of which resort to devices other than past-tense exclusion to signal the falsity of the antecedent. Mandarin Chinese and Tagalog lack past tense morphology, so it is quite natural that they should employ a specialized counterfactual complementizer (standing in contrast to a purely hypothetical "if") in the absence of other grammatical ingredients. Slovenian, Hebrew, and Turkish all have two ways of expressing conditionals, one of which is distinctly counterfactual, and when this specialized morphology is present, there is no need for exclusion-operator morphology to be borrowed from the temporal domain.

Since Turkish is SOV, I am assuming (hopefully reasonably) that the verbal complex incorporates into C, resulting in the [V+[Tns+Conditional]] complex. For this reason, I include the Turkish data in the group of languages with specialized "complementizers".

After the step of extending the range of languages under investigation beyond those of Iatridou (2000), which use purely tense and aspect in their ingredients, we should proceed to consider any differences in meaning that result from the difference in recipe. The relevant dimension will be the *cancelability* of these counterfactuals, a property to which we immediately turn our attention.

## 3. Cancelability as a Property of the Exclusion Relation

I have established that there are two types of languages: those that express CFs with past tense or exclusion-operator morphology (which I will call *EM languages*, for exclusion morphology) and those that can express counterfactuality with specialized morphology that often obviates the need for past tense morphology (hence I call them non-EM languages). We will now explore whether there are any different properties in the resulting semantics or pragmatics of the CFs in those respective categories. In doing so, I return to the nature of the exclusion operator as used in EM languages.

The cancelability property of counterfactuals, discussed in the philosophical literature by Anderson (1951) and Stalnaker (1975), among others, results in essentially the fact that the falsity of the antecedent is implicated, but not asserted. Accordingly, the implicature can be canceled by subsequent discourse. Examples (x) and (y) are classic illustrations of this effect.

## (9) EM Counterfactuals are Cancelable:

- (a) If the patient had the measles, he would have exactly the symptoms he has now. We conclude, therefore, that the patient has the measles.
- (b) If the butler had done it, the knife would be bloody. The knife was clean; therefore the butler must be innocent.

The first example shows that the implicature of counterfactuality is cancelable without resulting in contradiction. The second example confirms that the falsity of the antecedent is assertable after initial mention without resulting in redundancy. If the counterfactual had *asserted* the falsity of the antecedent, the second sentence would be felt as repetition and not as a logical conclusion.

Cancelability is a consequence of the fact that an EM CF does not assert that the actual world is ¬p. Rather, it conversationally implicates that the actual world is not among the p-worlds that we are talking about. Iatridou suggests that this may be a parallel situation to that of the following dialogue:

## (10) Cancelability within Discourse:

A: What do you think about Elliot and Rudy?

B: Well, I like Elliot.

Although B's response carries the implicature that he does not like Rudy, B has not asserted this dislike, and can always add a statement that he likes Rudy later, without resulting in contradiction. These sorts of cancelable implicatures are inherent in use of the past tense as a temporal marker. In use of the past tense in the following discourse, (11a) implicates that at topic time, the eventuality holds, and implicates that the topic time

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excludes the utterance time. (11b) cancels the implicature by asserting that the situation time in fact includes the utterance time, and thus the eventuality holds at the utterance time as well:

- (11) Cancelability within the Temporal Domain:
  - (a) Erica was in the classroom.
  - (b) In fact, she still is.

In (11a), it is conversationally implicated that at the time of utterance, Erica is no longer in the classroom. However, this implicature is readily canceled as (11b) asserts that Erica is in the classroom. It is an inherent property of the past tense, then, that the exclusion of the utterance time is only an implicature, and can be canceled. As the implicature of this exclusion is performed in the temporal domain by the exclusion operator, which is by hypothesis, the same exclusion operator used in the modal domain in counterfactuals, the cancelability of the CFs in (9a,b) is readily understood as the result of the same implicature. I shall elevate this point to the status of a numerical slogan:

(12) The Exclusion Operator conversationally implicates that Topic(x) excludes C(x) (where C(x) is the x of the speaker (e.g., utterance time, actual world(s)); however, this implicature can be always be canceled.

We have established that (12) is a general property of EM languages, and as Stalnaker, Anderson, and Iatridou have demonstrated, CFs in these languages are always cancelable. The cancelability property has been taken to be a hallmark of counterfactual constructions at large. In the next section, I shall challenge this claim, and attempt to show that the seemingly universal "cancelability property" of EM counterfactuals reflects the pragmatic results of but one particular morphological choice.

## 4. Specialized Counterfactual Morphology leads to Non-Cancelability

We have seen that languages often use EM to express counterfactuality. I showed that there are non-EM languages. We have seen that EM counterfactuals are cancelable. The next logical step is clear: to show that non-EM counterfactuals are not cancelable. I will use the test from (9), essentially focusing on the former (9a), as it bears more on the issue of cancelability, while the latter (9b) bears on the issue of implicature versus assertion. I selected such test based on their well-established status within the philosophical literature as diagnostics for counterfactuality; there are certainly other presumable methods for comparison. We will examine four languages of Section 2 in turn<sup>11</sup>.

(13) Chinese *yaobushi*-CFs are non-cancelable:

\*Yaobushi ta mei you fengzhen, tade pifu shang hui you bao. If-not-CF she didn't have measles, her skin surface will have bumps. Qishi, yinwei tade pifu shang xianzai you zheiyang de bao, Actually, since her skin surface now has those-kind of bumps, ta haoxiang you fengzgen.

None of my Hebrew informants were confident in their judgements as to cancelability with ilu.

she appears-to have measles,

'\*If it were the case that she has measles, she would have bumps on her skin. Actually, since she does have those kind of bumps on her skin now, she appears to have the measles.'

(14) Tagalog kung-CFs are non-cancelable:

\*Kung ang pasiente ay may tigdas, ehdi sana meron siyang mga marka If-CF Topic patient AY has measles, then SANA has topic-he plur. marks sa kanyang kamay, na yong nakikita ngayon. Eh di, meron siyang tigdas. loc. his hand NA that goal.-see now. So well, has he measles<sup>12</sup>. '\*If the patient had the measles, then he would have the marks on his arm that he has now. Therefore, the patient has the measles.'

(15) Slovenian da-CFs are non-cancelable:

\*Da ima oSpice, bi imel toCno take simptome, kot jih ima sedaj. Torej, pacient ima oSpice.

'\*If the patient had the measles, he would have exactly the symptoms he has now. We conclude, therefore, that the patient has the measles.'13

In addition, Ippolito (2001:p.39) discusses the non-cancelability of the Turkish example (8a) (her (38a)). What (13)-(15) and Ippolito's discussion demonstrate is that non-EM counterfactuals cannot be canceled, as opposed to (9a) and all of the corresponding EM constructions of Iatridou (2000). In principle, this should not be surprising, for as we have seen in Section 3, the cancelability of EM counterfactuals arises from use of the exclusion operator. The Iatridovian systems of CF inherit their cancelability through use of past tense morphology. Accordingly, there is no reason to expect that a language that signals counterfactuality through other means than EM should possess the cancelability property. Rather than implicating the falsity of the antecedent in the actual world, non-EM counterfactual morphology expresses a presupposition<sup>14</sup> that the antecedent is false.

Unfortunately, I could not find an exact gloss for this sentence as given in Marvin (1999); however, I provide its verbatim text and translation, and invite interested readers to contact me.

(iii) A: Tommy is sick again.

B: Really? I didn't know he was sick a first time.

Should the felicity of B's statement arise from the fact that a presupposition can cause a surprised reaction by the lack of shared knowledge while an assertion cannot, then the fact that yaobushi-CFs can be followed by surprised interlocutions may indicate that the pragmatic effect is indeed presupposition, rather than assertion, of the truth of p (remember, yaobushi suggests the falsity of p) in the actual world:

(iv) A: Yaobushi wode qian bei tou le, wo keyi gei ni mai kafei. 'If not for the fact that my money was stolen, I could buy you a coffee.'

The particle ay is used when the subject precedes the predicate, and the particle na is a "linker" that is used in possessive constructions (Norvin Richards, personal communications).

It is at this point difficult to ascertain whether the falsity of p in the actual world is a presupposition or an assertion; either way, its noncancelability would make the point that only EM CFs have the cancelability property. Diagnostics for presuppositions versus assertion often involve embedding and negation, which require rather complicated judgements with CFs. However, another frequent diagnostic for presuppositions is the possibility of surprise by an interlocutor:

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To summarize, we have examined the form and meaning of counterfactual conditionals that do not possess or do not employ the relevant tense or aspect morphology in order to signal counterfactuality. I have proposed that languages that use specialized counterfactual complementizers do not have the *cancelability property* often taken to be a hallmark of counterfactuals at large. The modest conclusion of this note is that the pragmatic conditions of counterfactual constructions may differ as a result of the means of morphological expression.

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B: Ai, wo bu zhidao nide qian bei tou le! Zheige hen kexi a! 'Oh, I didn't know that your money was stolen -- that's a pity.'

Moreover, the analogy with English "If not for the fact that" suggests that yaobushi presupposes (rather than asserts) the truth of p.