

Locating the locative in English pseudo-locative *where*-relatives

Marisa Brook and Keir Moulton

1 Introduction

Wh-words are routinely deployed in non-interrogative environments (e.g. as relative pronouns). They also often lose aspects of their core semantics when extended beyond the question domain. For instance, when English *how* is used as a declarative clause embedder as in (1), it loses its manner flavour (Legate 2010, Umbach, Hinterwimmer, and Gust 2021).

- (1) They told me how the tooth fairy doesn't really exist.
Legate (2010: 121; ex. 1)

In this chapter, we examine another instance in which the core lexical semantics of a *wh*-expression appears to be absent: the use of *where* in noun-modifying clauses illustrated by the examples in (2). Although often limited to a colloquial register, these sentences are attested. What is notable is that the modified nouns do not describe locations, but rather ordinary individuals such as people and passwords and haircuts (Comrie 1999, Pullum 2008, Brook 2011, 2018, Radford 2019).

- (2) *Pseudo-locative RCs* (PLRs)
- a. He got this awful haircut **where** it's like a bag.
 - b. There were people at my school **where** they couldn't write legibly.
 - c. My understanding is that there are organs in France **where** they are tuned as high as 456 Hz.
 - d. I know that an ideal password is one **where** it looks like my cat took a 12-hour nap on the keyboard.
 - e. You could even buy those bags **where** you suck the air out with a vacuum cleaner. (Naturally-occurring examples from Brook 2011)

Following Adamson (1992), we refer to these as *pseudo-locative relatives* (PLRs).¹ As

¹PLRs are often acknowledged in passing in the variation literature, e.g. Tottie and Lehmann (1999) and Levey (2006). Pullum (2008) describes them as a “colloquial workaround” strategy.

can be immediately appreciated in many of the examples above, PLRs often contain a pronoun that calls back to the head noun. This is not a requirement, however, as illustrated by (2e). One of the central empirical claims we make about PLRs is that they describe generic properties that characterize the head noun (itself often kind-denoting), although they may of course be embedded in episodic sentences (as in (2a)). We propose that the generic flavour of the PLR arises from relativizing over a frame-setting locative adjunct, building on and modifying proposals in (Van Riemsdijk 2003) and (Radford 2019).

PLRs are special because they differ not only from very literally locative relatives (*The place where we played*), but also from relative clauses employing *where* in a more abstract locative sense as in (3), a kind of relative studied by Van Riemsdijk (2003).

(3) *Abstract locative RCs*

- a. This is a *wh*-island violation **where** a *wh*-phrase is extracted from an indirect question.
- b. There are few families **where** the youngest child takes over the business.
(adapted from Van Riemsdijk 2003)

The locative underpinnings of abstract locative relatives can be appreciated by their available paraphrases which employ a locative preposition (e.g. *This is an island violation in which a wh-phrase is extracted*). PLRs, on the other hand, resists paraphrases with locative prepositions (e.g. **people in/on/near/about which they can't write legibly*). And this is the central challenge posed by PLRs: why a locative element is possible at all, given the apparent absence of a location semantics that might underlie the construction. In this chapter we explore restrictions on PLRs which reveal that, despite appearances, PLRs *do* have an underlying locative source after all.²

The underlying locative source, we argue, is related to frame-setting locative adjuncts in the sense of Maienborn (2001). Drawing on two acceptability studies first reported in Brook and Moulton (2021), we show that PLRs are more acceptable as generic sentences, a tendency we also find with sentences accompanied by frame-setting locatives. This finding bears out an intuition suggested by Radford (2019, p. 84) that

²An alternative that is in principle a viable one would take *where* as an all-purpose (non-locative) relativizer, perhaps like *wo* ‘where’ in Bavarian as in (i).

(i) Bavarian (*wo*):

dea Mo (dea) wo seine Schu verlor hot
the man PRON.DEM WO his shoes lost has
‘the man who has lost his shoes’
(Brandner and Bräuning 2013)

It should be pointed out, however, that Brandner and Bräuning (2013) have argued that *wo* in (i) is in fact *not* derived from a locative source but rather equative *so*. Furthermore, the restrictions we find for PLRs do not (as far as we can tell) hold of such RCs.

PLRs have a “a locative meaning paraphraseable as ‘in a situation of such a kind (that)’”. We think Radford’s intuition is spot on. Besides experimentally verifying and providing further evidence for it, our contribution aims to explain *why* we find the otherwise locative element *where* performing this function. Here we take a syntactic change approach, in that a crucial part of our proposal is in mapping how locative frame-setting adjuncts serve as the locative source for PLRs. Here, we argue, abstract locative relatives like those in (3) and in (4) play a crucial role: as it turns out, there are solid reasons to think that abstract locative relatives are built from relativization over elements within frame-setting locative adjuncts

- (4) a. In that family, the youngest takes over the business.
 b. That’s the kind of family [in which_i/where_i [t_i the youngest takes over the business]
 $\rightsquigarrow$ *family x **such that in situations s involving x**, the youngest child in x generally takes over the business in s*

We think this construction is ripe for triggering a reanalysis to a more general modification strategy that can be extended to non-locative nouns as in the PLR. Since the most colloquial instantiations of relatives like (4) use *where* in place of the pied-piped locative PP, this obscures the presence of a filler-gap dependency, and this can lead to a re-analysis of *where* as base-generated complementizer (Brook 2011, Radford 2019). Complementizer *where*, nonetheless, does much the same semantic work as abstraction from a frame-setting locative does in (4b). In particular, we suggest a meaning for *where* that relates individuals to generic situations that contain those individuals. A typical PLR like (5a) will receive the analysis in (5b). The similarity to abstract locatives—which involve relativization over individuals within frame-setters (4)—is apparent.

- (5) a. They’re the kind of doctor [_{CP} [_C where] patients trust them]
 b. $\rightsquigarrow$ *doctor x **such that in situations s involving x**, patients of x generally trust them in s*

Consonant with Radford’s suggestion for the meaning of PLRs, complementizer *where* involves a locative semantics—in placing the individuals ‘in’ the situations generically quantified. Those individuals need not be locations themselves, however.

Our analysis delivers a range of empirical payoffs, explaining a number of PLR properties which are to our knowledge novel observations. On our analysis, the *where*-clause in PLRs denotes a property of individuals, but not one derived through an abstraction or movement operation. We straightforwardly predict the impossibility of gapped PLRs and the possibility of PLRs without even head-linked pronouns. We explain the lack of movement and reconstruction effects. We further predict the impossibility of non-restrictive PLRs. We document that all of these predictions are borne

out.

If we're on the right track, PLRs constitute yet another example where *wh*-words can be co-opted to serve purposes beyond their interrogative function and to express meanings beyond their original lexical semantic specifications. Likewise, PLRs should be added to the list *wh*-words that have been re-analyzed from operators in Spec,CP to heads in C (see Van Gelderen 2009 on *whether*; van Gelderen 2015 on *how*; and Willis 2007 for further cross-linguistic examples). We return to the implications for the study of language variation and change, which are not trivial, in the conclusion.

2 The defining properties of PLRs

In this section we detail the key characteristics of PLRs that motivate our analysis. We begin with some basic syntactic properties of PLRs (section 2.1) and then move on to the evidence that PLRs must express generic propositions (section 2.2). In section 2.3, we illustrate the non-movement properties of PLRs and compare them to gapless relatives discussed elsewhere in the literature (Van Riemsdijk 2003, Collins and Radford 2015), showing that those analyses do not carry over to PLRs.

2.1 Basic syntactic properties

PLRs form a constituent with the head noun, as shown by leftward dislocation in (6):

- (6) a. [A password where it looks like my cat took a 12-hour nap on the keyboard],
(that) is an ideal one.
- b. [The kind of guy where people always talk about him], (that kind of guy)
generally annoys me.

As reported in Brook (2011), and confirmed by the speakers we have consulted, PLRs disallow gaps (7). Rather, in many cases a pronoun refers back to the head noun. We call these *head-linked pronouns*, rather than resumptive pronouns, for reasons we detail below.

- (7) a. There were people at my school where {they/*__} couldn't write legibly.
- b. He's the kind of guy where people always talk about {him/*__}.

However, Radford (2019) reports naturally-occurring examples of similar *where*-type relatives with gaps:

- (8) a. He was playing at a level [where he was far too good for __]
- b. He plays them in positions [where they're comfortable with __]
- c. There are certain zones [where you're looking to aim at __]

- d. The Mexican defender goes for a header [where he shouldn't have gone for ____]
 - e. But this is the one match [where football fans, not the average sports fan but football fans, really pay attention to ____]
 - f. This is the day [where he's not looking forward to ____] at all
 - g. That's about the time [where they do give them ____] to see whether they are going to go on and do anything
- (Radford 2019, (46), p.85)

To both of the present authors, these examples in (8) are not well-formed. Conceivably, the discrepancy could be regional, reflecting a difference between Radford's data (primarily drawn from British English) and our intuitions (Canadian English). That said, to our knowledge, no systematic study of PLRs and adjacent phenomena across dialects of English has been conducted yet, so this is currently no more than a hypothesis.

That said, we point out that the head nouns in (8) are not innocuously non-locative. All the head nouns could in principle be followed by a P+*which* relativization: *level at which, position in which, zones in which, match in which, day in which, time in which* (compare to *#guy in which*). We classify as PLRs only those constructions where a locative prepositional paraphrase is not possible and the head noun bears no inherent locative semantics, abstract or otherwise.

Returning to PLRs with head-linked pronouns, the position of the pronoun is unconstrained. In this respect, the pronoun is unlike the kinds of *resumptive* pronouns (RPs) that sometimes appear in present-day colloquial English. These are typically restricted to islands and deeply embedded positions. The head-linked pronouns in PLRs are acceptable in non-islands, including highest subject position (9a), as well as in islands (9b) and in deeply embedded clauses (9c).

- (9) a. He's the kind of guy where/*who he always talks too much.
- b. He's the kind of guy where/?who people wondered if he ever shaved.
- c. He's the kind of guy where/?who people say that the business community thinks that he is a fraud.

While the grammatical status of resumptive pronouns in canonical RCs is not fully understood,³ head-linked pronouns in PLRs appear to have a different status. They are simply elements that are bound or co-referential with the head noun. In fact, as noted above, PLRs do not require a head-linked pronoun. More examples of these are given in (10). The example in (10a) is from Comrie (1999); those in (10b/c) are naturally-occurring (written) examples collected by Brook (2009); (10d) is constructed after an example from Collins and Radford (2015).

³See Ackerman, Frazier, and Yoshida (2018) for a recent discussion and references to a large processing literature on the topic.

- (10) *Gapless/pronoun-less PLRs*
- a. a cake where you don't gain weight
 - b. you could even buy those bags where you suck the air out with a vacuum cleaner.
 - c. I've never grafted anything where I could see the inside before and just wanted to check.
 - d. He's a fellow where it often seems that the glass is half empty.

The existence of such gapless and pronoun-less PLRs recalls gapless relatives in English introduced by canonical relativizers like *which/that/who*, as in (11) from Collins and Radford (2015), and in *such that* relatives, as in (12) from Pullum (1985).

- (11) *gapless/RP-less canonical RCs*
- a. Laura Maxwell is someone [who I think, Laura, that's happened]
 - b. He's a fellow [who it often seems that the glass is half empty]
(naturally-occurring examples from Collins and Radford 2015)
- (12) *gapless/RP-less "such that" relative*
- a. Over many years, it had become clear that Lee and Sandy were just one of those couples such that people always reported loving her but hating him.
 - b. every triangle such that two sides are equal
(Pullum 1985, (1a,2a))

There is a long tradition in which gapless relatives, especially ones like (11), are analyzed as actually involving a gap housed within a silent preposition (see Radford 2019 for a very useful, comprehensive overview). Collins and Radford (2015), for instance, propose that (11a) contains a null version of *to* as shown in (13a). For gapless relatives that are not easily amenable to a null preposition analysis, Collins and Radford (2015) posit yet richer silent structure. For instance, the example in (11b) involves a 'ghosted' predicate that contains the gap.

- (13) a. Laura Maxwell is someone [who I think, Laura, that's happened [<to> ____]]
- b. He's a fellow [who < [**I would say about** ____] > it often seems that the glass is half empty

PLRs exhibit a number of properties that distinguish them from these kinds of gapless relatives. The first involves restrictiveness. An important observation about PLRs is that they involve restrictive modification of the head noun. This cannot be taken for granted since, on the face of things, the relativizer *where* does not appear to be something that could easily semantically restrict a non-location-denoting noun like

people or *haircut*. Nonetheless, just like canonical RCs, PLRs semantically restrict the head noun. This is best appreciated in cases where the PLR modifies a quantified head, as demonstrated by the naturally-occurring example in (14a) (from Brook 2011) and the constructed examples in (14b–c).

- (14) a. Either way you’re going to end up with something where you don’t want it.
 b. There’s no kind of fireplace available on the market where the smoke it makes is ever clean.
 c. We bought every kind of wine available where you have to open it long before you serve it.

Even PLRs without any head-linked pronoun can restrict quantified heads, as shown in (15). The example in (15c) is naturally-occurring.

- (15) a. I like any cake where you don’t gain weight
 b. I’ve never met any kind of fellow where it seems that the glass is half full.
 c. I’ve never grafted anything where I could see the inside before and just wanted to check.

In each of these sentences, the PLR must restrict the domain of the quantifier. For instance, (15a) does not mean I like any cake, but specifically those cakes that do not cause me to gain weight.⁴

The crucial data point relevant in separating PLRs from other gapless RCs is that PLRs *must* be restrictive. PLRs cannot modify proper nouns and thus cannot serve as appositive relatives, as shown in (16a). *Such that* RCs likewise resist appositive modification (16b).

- (16) a. *This is John, where/such that I didn’t know whether to talk to him or not.
 b. This is the guy where/such that I didn’t know whether to talk to him or not.
 c. This is John, who I didn’t know whether to talk to (him) or not.

PLRs and *such that* relatives are thus distinct from the gapless relatives studied by

⁴That PLRs can restrict quantified heads is particularly important in light of the fact that to the extent English allows RPs in canonical RCs (e.g. in islands, as ‘rescuing’ RPs) (ia), these *do not* allow quantified heads (ib) (Chao and Sells 1983).

- (i) a. I met the linguist that Kate forgot if Thora had seen him before.
 b. *I met no/every linguist that Kate forgot if Thora had seen him before.

Of course languages with *bona fide* grammatical RPs allow restriction on quantified heads. But English is not such a language, aside from *such that* relatives.

Collins and Radford (2015). Those do appear to allow proper noun heads, as shown in (17).

- (17) They're complaining to the referee about Cristiano Ronaldo, who possibly it was a foul on Gonzalez.
(Collins and Radford 2015: 195(5a))

Collins and Radford (2015) explicitly characterize the example in (17) as having *Cristiano Ronaldo* as the head noun. The differences between PLRs and these gapless relatives introduced by canonical relativizers rules out an account like Collins and Radford's. We will see further evidence pointing in this direction when we discuss the (absence of) movement properties in PLRs in Section 2.3.⁵

The fact that PLRs serve as restrictive modifiers to the head noun suggests that the PLR is itself a property of individuals that can compose and therefore restrict a head noun of the same type (e.g. via Predicate Modification as per Heim and Kratzer 1998).⁶ The question then is how this predicate is derived. The options include movement of a null operator, base generation of a binder (in the style of *such that* relatives as in Heim and Kratzer (1998)) or a more complex semantics for the embedding element *where*. We will take the last route. But before doing that we need to illustrate one of the key properties of PLRs that motivates our analysis: the genericity requirement. An understanding of this property has a additional benefit: it helps us create highly acceptable PLRs to which we may confidently submit standard movement diagnostics.

⁵A reviewer suggests that the ability to stack distinguishes PLRs from canonical relatives (and true locative relatives introduced by *where*). We do find it to be the case that PLRs resist stacking:

- (i) a. *He's the kind of athlete where he goes running for hours where he's always drinking milkshakes.
b. He's the kind of athlete where he goes running for hours who's always drinking milkshakes.

At present, we have no particular reason to expect this behaviour, particularly if PLRs are simply restrictive modifiers that can recursively intersect with a head noun. We should point out, however, that it seems that PLRs share this property both with *such that* RCs (ia) and, we think, to some extent abstract locative relatives (iib).

- (ii) a. ??This is a triangle such that two of its sides are equal such that one angle is less than 30 degrees.
b. ??That's a crime where you lose your identity where the FBI has to get involved.
cf. That's a crime where/in which you lose your identity in which the FBI has to get involved.

We are aware that degree and amount relatives are known to resist stacking (Carlson 1977, Grosu and Landman 1998). Grosu and Landman (1998) attribute this to the fact that the head of these RCs are interpreted in an RC-internal position. As we saw though PLR heads quite clearly never enjoy an RC-internal position. We must leave this intriguing puzzle for future research.

⁶We are not opposed to an alternative route—for instance, one where the PLR restricts some additional spatio-temporal or situation variable associated with the head noun. At present, we have not been able to find concrete ways to pursue such an analysis.

2.2 Genericity and Kinds

One of the key properties of noun phrases modified by PLRs that motivates our analysis is their characterizing—or generic—flavour (Krifka, Pelletier, Carlson, ter Meulen, Chierchia, and Link 1995). Brook (2011) found that PLRs tend to have heads modified by *kind* and *type*. This is supported by our own intuitions that (18b) is more natural than (18a).

- (18)
- a. ?the man **where** he has lost his shoes
 - b. the kind of man **where** he always loses his shoes
 - cf. the man **who** has lost his shoes

Brook (2011) also found that PLRs tend to describe characteristic properties of their head nouns, also borne out by our judgments in (18). Similar intuitions are reported by Radford (2019), who provides a number of naturally-occurring examples (19) which express generic properties.

- (19)
- a. He’s one of those players [where he’s been really unlucky]
 - b. He has players [where he just ignores them]
 - c. I’ve never known a game [where you just don’t know which way it’s gonna turn till the end of the match]
- (Naturally-occurring examples reported in Radford (2019): (45). p 84)

Radford (2019, p.84) suggests that PLRs might be derived from structures “with a locative meaning paraphrasable as ‘in a situation of such a kind (that)’”, and perhaps later taking on a non-locative meaning paraphrasable as ‘of such a kind (that)’.”

In Brook and Moulton (2021), we deployed two acceptability rating studies to probe these intuitions and clarify the facts. In one experiment, we compared PLRs with episodic versus generic relative clauses, subjecting canonical relatives with *who/which* to the same manipulation as a baseline. A sample stimuli set is shown in Table 1. The generic conditions used an adverb like *always/usually* while the episodic conditions had a definite time adverbial. Participants (36 self-declared United States English speakers) rated sentences for naturalness on a 7-point scale; mean ratings per condition are shown in Table 1. While PLRs generally were rated lower than canonical RCs, the episodic/generic manipulation had an effect only on PLRs. That is, a statistically significant interaction was found, such that generic PLRs were preferred to episodic ones, but no such difference was found with canonical relatives.

In a second experiment, Brook and Moulton (2021) compared PLRs with explicitly *kind*-referencing head nouns to PLRs without (keeping the RC generic in all cases), again with canonical RCs using *who* as a baseline. Sample stimuli and results are shown in Table 2.

The *kind*-sentences simply included the words *kind of* in the head noun and omit-

		Mean rating (SD)
PLR/Episodic	She’s that friend of mine where I introduced her to other friends last night.	3.1 (1.7)
PLR/Generic	She’s that friend of mine where I always introduce her to other friends.	4.2 (1.8)
who/Episodic	She’s that friend of mine who I introduced to other friends last night.	5.3 (1.8)
who/Generic	She’s that friend of mine who I always introduce to other friends.	5.7 (1.5)

Table 1: Example of Brook and Moulton (2021) Experiment 1 stimuli and results

		Mean rating (SD)
PLR/Object	This is the doctor where patients always trust them immediately.	5.0 (1.8)
PLR/Kind	This is the kind of doctor where patients always trust them immediately.	5.7 (1.4)
who/Object	This is the doctor who patients always trust immediately.	5.7 (1.4)
who/Kind	This is the kind of doctor who patients always trust immediately.	6.2 (1.2)

Table 2: Example of Brook and Moulton (2021) Experiment 2 stimuli and results

ted them in the object-referring (i.e. token) condition. Overall, participants (40 self-declared United States English speakers) rated canonical relatives higher than PLRs and *kind*-including heads higher than object-level heads. However, the numerical trends were revealing: PLRs with *kind* in the head noun were rated as highly as canonical relatives (5.7). The experiment also included as fillers six canonical RCs with resumptive pronouns inside islands. Two examples are shown in (20).

- (20) a. The director hired an actor **who** the screenwriter asked whether **he** knew the producer.
b. This is the couch **that** my mother wondered whether **it** would look good in her den.

While not paired systemically with the PLRs, the acceptability for such sentences (4.0 mean rating) was lower than PLRs, again suggesting that PLRs, especially with *kind*-heads and generic RCs, are comparatively well-tolerated.

The key findings from Brook and Moulton’s (2021) studies are that PLRs want to express generic properties of the head noun and that PLRs improve further with *kind* heads, but only somewhat. It is not surprising that when these two features

are combined they produce the most fluid-sounding PLRs. The study results are additionally useful from a methodological perspective: by identifying the features that make PLRs highly acceptable, we can be more confident in constructing and judging further examples of this colloquial construction, which we turn to next.

2.3 PLRs do not involve movement

With the genericity properties of PLRs in mind, we now turn to further properties of the derivation of PLRs, including whether they involve a movement dependency as canonical RCs do. As shown in Section 2.1, PLRs serve as restrictive modifiers, and the most natural analysis of this would treat them as predicates that restrict the head noun. Typically, in relative clauses, that predicate is derived either by movement—possibly of a null relative operator—or via selective binding by an operator in C.

Here we document facts that speak against the simplest of movement analyses, i.e. one where there is movement from the location of the head-linked pronoun. These facts include the lack of reconstruction effects and the lack of clear cases of parasitic gap licensing. We also show that the genericity requirement on PLRs is ‘local’, holding of the highest clause of the PLR. We argue this further speaks against a movement analysis.

2.3.1 Anti-reconstruction effects

PLRs differ from canonical relatives in reconstruction diagnostics. As is well known, the head of a relative clause shows various connectivity and reconstruction effects as though it enjoyed a position at the gap site in the relative (Vergnaud 1974, Kayne 1994, Bhatt 2002, Hulsey and Sauerland 2006). Even in languages where resumptive pronouns are used in place of a gap, reconstruction effects are sometimes observed, as in Hebrew and Swiss German (Salzmann 2006, 2017). PLRs, in contrast, exhibit anti-reconstruction effects. For instance, there is no reconstruction for variable binding in (21a) or idiom reconstruction in (22a). (Baseline examples with canonical RCs are given the (b) examples.)

- (21) a. This is the kind of picture of his_{*i/j} face where every guy_i typically wants to rip it up.
- b. This is the kind of picture of his_{i/j} face that every guy_i typically wants to rip up.
- (22) a. *This is the kind of headway where you rarely make it quickly.
- b. This is the kind of headway that you rarely make quickly.

Both of these facts suggest that there is no representation of the head noun (via movement or deletion-under-identity) in the RC portion of PLRs. These data do not rule out a movement analysis of PLRs, but they do rule out an analysis where the head

raises from a position near or at the head-linked pronoun within the PLR (Vergnaud 1974, Kayne 1994).

2.3.2 Parasitic gaps

Further evidence that there is no A-bar movement with PLRs that contain head-linked pronouns comes from the impossibility of parasitic gaps (*pg*). In some languages, RPs can license parasitic gaps, as in Hebrew in (23). We show that on careful examination PLRs cannot.

- (23) ha'iša še [[ha-anašim še šixnati levaker *pg*] te'aru ota
 the-woman who the-people that I-convinced to-visit described her.
 (Sells 1986: 63(8))

Resumptive pronouns in English, to the extent they are acceptable to speakers, do not license parasitic gaps.

- (24) *No PGs in English resumptive relatives*
 A man [whom [everyone who meets *pg*] knows someone who likes him].
 (Chomsky 1982: 57–58)

Likewise, PLRs with head-linked pronouns do not license PGs, as shown in (25a), unlike canonical relatives in English (26). Note that the PLR is grammatical as long as there are no gaps, as in (25b).⁷

- (25) *No PGs in PLRs*
 a. *He's the kind of pundit [where [the people I convince to listen to *pg*] always

⁷We have found that when the PG is part of a clause-final adjunct clause, rather than in the subject, it fares better (ia) (cf. a gapped canonical relative (ib)).

- (i) a. ?This is the kind of book where people always give it back to you without reading *pg*.
 b. This is the kind of book which people always give back to you without reading *pg*.

Radford (2019) claims that resumptives do not license PGs in these positions either, offering the example in (ii) as evidence.

- (ii) a. This is a patient [who they hadn't realised ____ was seriously ill before examining *pg*]
 b. *This is a patient [who they hadn't realised that he was seriously ill before examining *pg*]
 (Radford 2019: (9) p. 60)

We find however that even *such that* relatives, for which a movement analysis is unlikely, likewise somewhat tolerate PGs in these locations.

- (iii) This is the kind of book such that people always give it back to you without reading *pg*.

We suspect something besides A-bar movement is licensing these parasitic gaps. We thank a reviewer for asking us to consider the role of parasitic gaps more closely.

end up hating him].

- b. He's the kind of pundit [where [the people I convince to listen to him] always end up hating him].

(26) *PGs in canonical relatives*

He's the kind of pundit [who [the people I convince to listen to *pg*] always end up hating --].

To the extent that parasitic gaps diagnose A-bar movement, then, PLRs do not involve movement. Other diagnostics for movement, e.g. islandhood or crossover, will not be informative. As shown, the head dependent pronoun can occur within islands (see (9) above). Any crossover configuration, weak or strong, could simply be a case where the higher rather than lower pronoun is implicated in movement (see Salzmann 2017 on the complications for crossover tests in resumptive dependencies).

2.3.3 Locality of genericity

If PLRs involved A-bar movement of one sort or the other, we might expect to find 'long-distance' PLRs. Here the genericity requirement that we reviewed in 2.2 becomes helpful in sussing out locality effects in PLRs. It turns out that in multi-clause PLRs, the matrix clause must be generic. This suggests that whatever imposes this requirement is local to the highest clause in the PLR. Two illustrative examples are given in (27) and (28). In (27a) the matrix clause of the PLR (*people always say*) has a generic flavour whereas in (27b) the clause is episodic (*said yesterday*). We detect a noticeable difference in acceptability. A similar contrast emerges in (28).

- (27) a. He's the kind of guy where people always say he talks too much.
b. #He's the kind of guy where my friend said to me yesterday that he talks too much.
- (28) a. She is the kind of politician where the local newspaper always reports that she shows up at all the charity events.
b. #She is the kind of politician where the local newspaper reported she shows up at all the charity events.

Moreover, clauses that make very unacceptable PLRs, as in (29a), are possible as embedded clauses within a PLR whose matrix clause is generic (29b):

- (29) a. ??She is the kind of politician where she was raised in poverty.
b. She is the kind of politician where the newspaper always talks about how she was raised in poverty.

If PLRs were derived via operator movement, we would be hard-pressed to understand why the genericity constraint should hold so locally to the head noun. In our proposal

(and Radford’s), in which *where* is a re-analyzed complementizer that itself imposes this, the genericity requirement can be understood naturally, arising locally between C and the proposition it most immediately embeds.

2.3.4 Other movement analyses/diagnostics

The above movement diagnostics assumed that the tail of the movement dependency would be located in the position of the head-linked pronoun. This does not rule out an alternative where there is a gap we cannot locate upon superficial inspection. Indeed, the PLRs without head-linked pronouns would have to contain an inconspicuous gap if they are to involve movement. As briefly mentioned above, there are various analyses of gapless relatives in English that postulate a gap housed inside covert structure. Van Riemsdijk (2003) suggests that such constructions like (30) involve a silent locative adjunct gap, which bears an aboutness relation to the content of the RC.

(30) every triangle **where** two sides are equal (Van Riemsdijk (2003))

Examples like (30) are paraphraseable with overt P+*which* (e.g. *a triangle in which two sides are equal*) and thereby fall under our classification as abstract locative relatives. In these cases, the presence of locative *where* does not need explanation. However, Van Riemsdijk (2003) points out that the source of relativization in some cases might come from PPs that house aboutness topics, where a locative flavour is less apparent.⁸

⁸Van Riemsdijk (2003) notes that the closest approximation in German to English *such that* relatives (which in many respects resemble PLRs) is one in which relativization is formed from the complement of a loosely locative PP headed by *bei*.

- (i) ein Dreieck, bei dem die Summe der Quadrate der beiden kurzen Seiten gleich gross
 a triangle in which the sum of the squares of the two short sides same size
 ist, wie das Quadrat der langen Seite.
 is as the square of the long side.
 ‘A triangle where/such that the sum of the square of the two short sides is equal to the square of the long side.’
 (Van Riemsdijk (2003): (29a), p.9)

Van Riemsdijk (2003, p.9–10) points out that a *bei*-phrase “serves to designate potentially very loose semantic relationships... frequently used to introduce a topic”, as in (iia). These too can be relativized from as in (iib) (unlike English *with*-PPs, cf. (32b)).

- (ii) a. Bei diesem Wetter lohnt es sich nicht, den Rasen zu mähen
 with this weather pays it REFL not the lawn to mow
 ‘With this weather it isn’t worth the trouble to mow the lawn.’
 b. ein Wetter, bei dem es sich nicht lohnt, den Rasen zu mähen
 a weather, with that it REFL not pay the lawn to mow
 ‘weather such that/where it doesn’t pay to mow the lawn.’
 (Van Riemsdijk (2003): (32/33a), p.10)

One could imagine a null version of *bei* in English, but this would have to be restricted to PLRs and

One might imagine that any number of aboutness-topic-introducing PPs could be the source for gapless RCs and PLRs, e.g. *as for* and *with*.

- (31) a. As for this kind of haircut, it looks like a bag around the person's head.
 b. With this kind of guy, you always wonder whether he's upset with you or not.

However, these can never form relatives even by pied-piping the preposition:

- (32) a. *This is the kind of haircut as for which it looks like a bag around the person's head.
 b. *This is the kind of guy with which you always wonder whether he's upset with you or not.

Even if there were a possible movement source for a relativization operation in PLRs housed in a high, topic-introducing adjunct, evidence for that would be difficult to discern since the movement dependency would be so short and so high in the clause. In summary, while various types of aboutness topic phrases might serve as the source for relativization in German, similar aboutness PPs are unlikely to underlie English PLRs.

2.4 Interim summary

We have catalogued key properties of PLRs in this section: PLRs are restrictive modifiers of (non-location denoting) common nouns. They are unlikely to be derived by movement, given the lack of reconstruction effects, the lack of parasitic-gap licensing, and the possibility of having no head-linked pronoun at all. We entertained a possible aboutness topic analysis following Van Riemsdijk (2003) but concluded that it would not be appropriate for PLRs. Such an approach, like a movement approach, would also have nothing to offer for the genericity requirement.

In the next section, we suggest a source for both the genericity requirement and for the locative form (i.e. *where*): that common source is a frame-setting locative adjunct.

lead to the spell-out as *where*. Further, *Bei*-phrases topics can be appended to episodic sentences:

- (iii) Bei Jonas hatte ich gestern um 11:57 den Eindruck, dass er sauer auf mich ist.
 With Joans had I yesterday at 11:57 the impression that he mad at me is.
 'With Jonas, I had the impression yesterday at 11:57 that he was mad at me.' (Florian Schwarz, p.c.)

This would leave the genericity requirement of PLRs unexplained.

3 Frame-setting locatives and genericity

In this section we illustrate a connection between PLRs and sentences with locative adjuncts that serve as ‘frame setters’ (Maienborn 2001). We propose that, historically speaking, PLRs stem from such locative adjuncts that have undergone reanalysis. While this claim will require empirical verification in future work, here we describe how it accounts for the synchronic behaviour of PLRs.

For the following discussion it is useful to think of PLRs as belonging to a cline of locative relatives (building on Brook 2011), starting with true locatives (34a) and transitioning through abstract locatives (34b) of the sort discussed in the introduction.

- (33) True locatives > Abstract locatives > PLRs
- (34) a. **True locatives:**
the place where/in which they reside
- b. **Abstract locatives:**
the family where/in which the youngest inherits the business
- c. **PLRs:**
the kind of guy where/*in which he always talks too much

As the intermediary case, the abstract locatives serve as the link in the chain. As noted in the introduction, unlike PLRs, these can be paraphrased using a locative preposition (typically *in*) and a relative pronoun.

- (35) a. a crime where/in which people steal your identity
- b. a family where/in which the youngest inherits the business

These PPs, however, are special. For instance, unlike true locative PPs, they do not allow preposition stranding. Compare the abstract locatives in (36) to the true locative in (37).

- (36) a. *a crime which people steal your identity in
- b. *a family which the youngest child inherits the business in
- (37) the house/place which they reside in

We think this is because the gap position in an RC like those in (36) is a high PP that corresponds to a frame-setting locative of the sort discussed by Maienborn (2001). These locatives are highlighted in the examples in (38). (Their variable location, particularly sentence-final, verifies that the location of the stranded PPs in (36) are indeed viable locations for such PPs.⁹)

⁹Stranding might be blocked because frame-setting PPs move high, both rightward and leftward. Moved constituents are often frozen for further sub-extraction, particularly extraction that strands

- (38) a. **In this crime**, people steal your identity
b. People steal your identity **in this crime**.
- (39) a. **In this family**, the youngest child inherits the business.
b. The youngest child inherits the business **in this family**.
- (40) a. **In Argentina**, Evita still is very popular.
b. Evita still is very popular **in Argentina**.

The key observation, which connects back to PLRs, is that frame-setting locative PPs like to combine with generic sentences (b) and resist episodic ones (a).

- (41) In that family... (pointing at the house across the street)
a. #the children bought the groceries yesterday.
b. the children buy the groceries.
- (42) In that kind of crime...
a. #people stole my identity.
b. people steal your identity.

A plausible analysis is that these PPs restrict a generic operator (Kratzer 1995, Krifka et al. 1995): *Generally, in that family, the children buy the groceries*. How precisely a PP such as *in that family* restricts a generic operator is something we will only gesture toward in this contribution. What is of immediate interest is the way in which the nominal in the PP serves to define the kinds of situations that are generically quantified.¹⁰ Consider the following ways in which *this family* contributes to our understanding of each of the characterizing sentences in (43):

- (43) In this family...
a. the son is older than the daughter.
b. the oldest sibling takes over the business.
c. we kids do all the grocery shopping.

The situations of relevance in (43a) are relations ‘inside’ the family structure, e.g. *within this family*...). In a sense, this is most locative of the abstract locatives. In (43b), the situations are harder to define but they nonetheless extend beyond the

Ps:

- (i) a. *the friends that with ____ Sue fixed her car
b. the friends that Sue fixed her car with ____
c. the car that with her friends, Sue fixed ____.

¹⁰Ultimately we would want to spell these intuitions out in a situation semantics such as that of Kratzer (1989, 2007) but we will leave discussion at the informal level here.

family, to its business holdings over the course of its existence. In (43c), the situations of relevance contain the family members in addition to their shopping trips. In both of these cases, a natural paraphrase that comes to mind for the locative PP is: *in situations involving this family*. Paraphrases do not make for semantic analyses, we acknowledge, but we think that such paraphrases offer a way into characterizing the locative underpinnings of PLRs. So alongside a paraphrase like that given for the abstract relative in (44), we have a similar paraphrase for the PLR in (45)—one that closely mirrors Radford (2019)’s suggestion for the meaning of PLRs.

- (44) this is a family where the children do the shopping
 $\rightsquigarrow$ *this is a family x such that generally [in contextually relevant situations involving x], the children of x do the shopping*
- (45) They’re the kind of doctor where patients always trust them.
 $\rightsquigarrow$ *They’re the kind of doctor x such that generally [in contextually relevant situations involving x] patients always trust $them_x$.*

The “contextually relevant” addition to the paraphrases is crucial: in the PLR example in (45) we are likely focusing on situations where the doctor meets with their patients. Indeed, PLRs are odd if there isn’t some ‘zooming out’ to situations that contain the head noun referent and something—or someone—else. The contrast in (46) serves to bring this out. The example in (46a) is odd but improves in (47) when the sentence provides a way to think about the doctor’s superior attitude in a larger situation that contains them, as in (47).

- (46) #They’re the kind of doctor where they have a real superior attitude.
- (47) a. They’re the kind of doctor where they have a real superior attitude whenever they enter a clinic.
 b. They’re the kind of doctor where you can tell they have a real superior attitude.

This is what we expect if PLRs require us to quantify over situations that properly contain the individual described by the head noun. Otherwise a canonical relative would do the job, and indeed the contrast between (46) and (47) is neutralized with a canonical relative.

- (48) They’re the kind of doctor who has a real superior attitude.

If paraphrases like (54b) are on the right track, then the distribution of such PPs in non-relative sentences should be mirrored by PLRs. For instance, a frame-setting locative along these lines is perfectly natural in (49), sitting within a sentential subject.

- (49) [[the claim that in situations involving this guy he’s always nice to customers]
is false]

But this same frame-setting locative does not very naturally adjoin to the root clause, as in (50).

- (50) #In situations involving this guy, [[the claim that he’s always nice to customers]
is false]

This is for two reasons. First, it cannot move there from its position in (50), within the sentential subject, as that would constitute an island violation. Second, base-generating the PP at the root is not particularly felicitous: the root clause “the claim...is false” is not so immediately a situation involving the guy in question.¹¹ Turning our attention to PLRs, a PLR version of (50) is constructed in (51). Our intuitions are that it is deviant in a way similar to (50).

- (51) #This is the kind of guy where the claim that he’s always nice to customers is false.

The problem with (51) is the same as that with (50). And a similar intuition holds as with the frame-setting example in (50): the matrix clause does not describe a situation that very obviously or concretely contains the head noun individual.

We submit, then, that there is good reason to make an analogy between abstract locative relatives to PLRs. The next question is what this means for the analysis of PLRs.

3.1 Re-analysis to COMP

We propose that PLRs involve a semantics very close to abstract locatives with relativization from a frame-setting adjunct. What’s different about PLRs is the following: (i) *where* is not a *wh*-phrase operator in PLRs but rather a base generated complementizer; (ii) this complementizer bundles the semantics of abstraction from within a frame-setting locative all in one head; (iii) the resulting predicate does not itself describe locations. This complementizer *where* relates situations to ordinary (non-locative) individuals, returning a property of individuals which restricts the head noun. As for the syntax, there is some good evidence that *where* is a COMP in PLRs (Brook

¹¹A good control for (50) is the hanging-topic structure in (i): these can relate to elements across islands.

- (i) As for this guy, the claim that he’s always nice to customers is false.

The contrast between this example and frame-setters offers another reason to doubt that PLRs have an aboutness topic as their source.

2009, 2011, Radford 2019). For instance, in his corpus Radford found no instances of *where* occurring with complementizer *that*—despite finding such cases with other *wh*-words (e.g. *why that...*). Second, there are no instances of infinitival PLRs, which supports the idea that *where* is a finite-clause selecting complementizer. For *wh*-phrase operators to be reanalysed as complementizers, particularly adjunct-related *wh*-words like *how*, is very commonplace in the historical record (Van Gelderen 2009, van Gelderen 2015, Willis 2007). We think abstract locative relatives that deploy *where* as an operator, repeated in (52), are susceptible to reanalysis to a COMP head. Unlike the pied-piped PP version (*families in which*), the location of the semantic variable in the RC is obscured—there is no *in* to signal that *where* functions as part of a frame-setter.¹²

- (52) this is a family where the children do the shopping
family [where_i [t_i the children do the shopping]]
 $\rightsquigarrow$ *family x **such that in situations s involving x**, the children of x do the shopping in s*

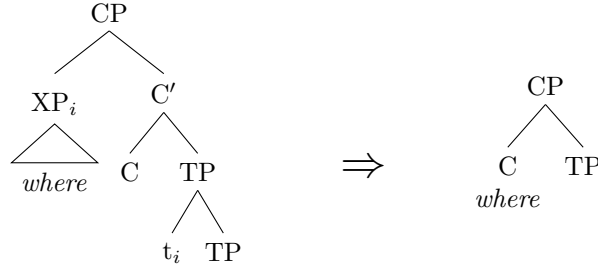
This obscurity makes an operator-gap dependency less salient. Moreover, the trace of *where* is likely quite high in the clause, given that frame-setters are generally found near the left edge of the clause.¹³ This would hide the presence of a long-distance dependency. When a long-distance operator-gap dependency is obscured, re-analysis to a base-generated COMP seems a viable route.

Suppose, then, that *where* can be re-analyzed as a complementizer head, but retaining a semantics related to the frame-setting adjunct.

¹²We leave discussion of the inner structure of *where* in abstract locatives to another time; proposals for true locative *where*, which also alternate with *in which*, should be suitable. See Caponigro and Pearl (2009) for proposals and discussion. As for the clause structure of PLRs, one reviewer inquires about the kinds of left-peripheral material they may contain, e.g. speaker-oriented adverbs. Our judgment is that they can contain such adverbs: *He's the kind of guy where, frankly, you never really want to know him better*. Further research is needed to evaluate such data against canonical relatives.

¹³Where precisely the frame-setting adjunct adjoins is subject to some debate. Maienborn (2001) proposes that such locatives restrict a discourse topic, which might suggest a high attachment site. Bücking (2011) shows that frame-setters can adjoin lower in the spine, possibly even as low as Asp where they have access to the Kleinian topic time. Linearly, however, they tend to appear clause initially.

(53) *Re-analysis to COMP*



Instead of an operator-variable configuration, complementizer *where* is a complex semantic relator; it takes a set of situations (the proposition denoted by TP) as its first argument and an individual as another, and relates them in a way similar to the way frame-setters relate their topics to their preajacent propositions. After combining with the TP, this will return a predicate, or set, of individuals as sketched in (54b).

- (54) a. They're the kind of doctor where patients always trust them.
 b. *where patients always trust them*
 $\rightsquigarrow \{x \mid \text{generally in contextually relevant situations } s \text{ containing } x, \text{ patients always trust them}_x \text{ in } s\}$

Unlike relative *where*, complementizer *where* does not describe a location—abstract or otherwise—but instead locates an ordinary individual in a situation determined by context. The locative nature of *where* is only preserved in the very abstract notion of being located ‘in’ certain situations (as Radford originally suggested). A great deal more would need to be said about the internal semantics of this complementizer *where*. For one, it will have to enforce that its complement describes a generic property. Recall that we saw in 2.3.3 that the highest clause in a PLR must meet the genericity requirement. We think encoding this in C is the best candidate for ensuring that effect. Setting aside this future work, the take-away is that abstract locative relatives, which involve frame-setting locatives, can serve as an intermediary stage, or bridge, from true locative relatives to PLRs.

3.2 Explaining the properties of PLRs

The proposal just sketched gives us a handle on a number of the syntactic and semantic properties of PLRs outlined above. PLRs denote predicates of individuals (54b) and can thereby restrict ordinary individuals. This predicate, however, is not derived through movement. We do not, therefore, expect any evidence of an A-bar dependency (parasitic gaps, reconstruction); this is what we found (see section 2.3). The variable presence of a head-linked pronoun is expected as well, since the semantics of COMP *where* requires the PLR to describe contextually relevant situations that merely contain the head noun individual, something easily established by the truly

gapless PLRs reviewed above in (10). Context-dependency is absolutely crucial here, though. Take a gapless/pronoun-less example, repeated in (55): here the contextually relevant situations are those in which you eat the cake.

- (55) a cake where you don't gain weight
 $\rightsquigarrow \{x \mid x \text{ is a cake \& generally in contextually relevant situations } s \text{ that contain } x, \text{ you don't gain any weight in } s\}$
 $s = \text{situations in which you eat the cake}$

We also found that PLRs could not be used as appositives to modify proper nouns. This could be explained in several ways. For one, if proper nouns are type *e*, then composing them with the predicate-type *where*-PLR would deliver the wrong type for the noun phrases under consideration (a propositional rather than individual or predicative type). Alternatively, Vries (2006) has argued that appositive relatives require a raising analysis of RCs (Vergnaud 1974, Kayne 1994, Bhatt 2002, Hulsey and Sauerland 2006) in which there is an instance of the external head NP within the RC. Since PLRs do not involve movement of a head noun from the RC (lack of connectivity and reconstruction effects), it follows automatically that they cannot be given a raising analysis. If this is a crucial component in building appositive relatives, then we would correctly expect PLRs not to be able to serve as appositives. Since PLRs cannot be raising relatives this derives another fact that distinguishes them from canonical relatives. Canonical RCs sometimes allow A-bar extraction from them, as shown in (56a) from McCawley (1981). PLRs, however, resist this kind of extraction (56b).

- (56) Then you look at what happens in languages that you know ...
a. ...and languages_{*i*} that you have [a friend [who knows __ _{*i*}]].
b. *...and languages_{*i*} that you have [one of those friends [where they always know __ _{*i*}]].
cf. I have one of those friends where they know funny languages.

Sichel (2018) has argued that such exceptional extraction from canonical relatives is only possible on their raising parse. If PLRs do not have a raising parse, then we do not expect them to allow such extraction at all, which is indeed the case.

4 Conclusion

We have examined a peculiar, but nonetheless naturally-attested type of relative in colloquial English: the pseudo-locative relative (PLR). We identified, building on experimental work by Brook and Moulton (2021), that PLRs express generic properties of their head nouns. *Where* has been reanalyzed as a complex complementizer that places non-location-denoting individuals in the generically quantified situations expressed by the embedded clause. There's no movement dependency, and this fits with all the

facts we’ve collected. As noted, the fact that a *wh*-operator is reanalysed as a base-generated complementizer is not a particularly new or surprising phenomenon (van Gelderen 2015).

To the extent that PLRs have been documented, they are colloquial rather than standard (Pullum 2008, Radford 2019). This does not guarantee that PLRs are a *new* development. However, in conjunction with the lack of attention afforded to them in descriptions of English syntax, it does raise the tantalising possibility that the reanalysis is part of a recent, and perhaps even ongoing, change in progress.

While canonical restrictive relative-clause markers are well-studied from a variationist perspective, PLRs receive mention only seldom and even then primarily as a curiosity to be excluded from the analysis (on the basis of being too divergent, elusive, and/or infrequent). This is a methodologically justifiable choice for any existing study. That said, our description of the properties of PLRs has illuminated the semantic contexts in which they appear, which paves the way to defining an envelope of variation (see e.g. Tagliamonte (2006)) and examining the competition between these and canonical RCs in large corpora of colloquial English. An evaluation of the question as to whether PLRs are indeed new is, therefore, now within reach.

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