Event Kinds and the Pseudo-Relative

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1. Introduction

Pseudo-relatives (PRs), illustrated the Italian clauses bolded in (1), are finite constructions found in many Romance languages that look superficially like nouns modified by appositive relative clauses but actually describe events. Typically, the tense of the PR must semantically "match" the matrix tense, and this was thought to be obligatory (Radford 1977, Guasti 1988). The combinations that count as "matching" are an imperfective PR (IMPF²) under present perfect (1a) or simple past (SP) (1b) and a present (PRES) PR under present (1c). Generally no other combination is allowed.

- (1) a. Ho visto **Gianni che correva**.
 - I.have seen G. that run.IMPF
 - 'I saw G. running.'
 - b. Tutti videro **Gianni che correva/*corre**.
 - All see.SP G. that run.IMPF/run.PRES.
 - 'Everyone saw G. running.'
 - c. Vedo **Gianni che corre/*correva**.
 - I.see.PRES G. that run.PRES/run.IMPF.
 - 'I see G. running.'

In Moulton and Grillo (2015) (M&G), we showed that PRs are referential descriptions of present or past events, and we argued that a null Determiner heading the PR is responsible for this referentiality. Simultaneity conditions on direct perception, then, force tense "matching." There are, however, previously unobserved cases of "mismatch", as in (2), with present under perfect (see Casalicchio 2015, for other cases of mismatch). This combination also gives rise to direct perception, but it is only available in Italian and not in other languages that have PRs (e.g. French, Spanish, or Greek).

¹We grant that the term "matching" is non-optimal, given (1a), but we follow the literature in this respect.

²Italian imperfective is interpreted as past imperfective, the so-called "present in the past."

Tutti hanno visto Gianni che correva /corre. ITALIAN Todos han visto a Juan que corria /*corre. SPANISH All have seen (DOM) J. that run.IMPF /run.PRES. 'Everyone has seen J. running.'

In this paper, we argue that such "tense mismatch" (TMM) PRs refer to **Event Kinds** (Portner 1991, Carlson 2003, Gehrke to appear, and references cited therein). We show that the propositions within TMM-PRs are habituals, and that via a null determiner, the PR as a whole comes to denote an event kind described by the habitual (e.g. Ferreira 2005). We first demonstrate this with TMM-PRs that combine with kind-taking predicates, and then show that TMM-PRs combine with direct perception verbs by *Derived Kind Predication* (Chierchia 1998), which accounts for various differences in scope and interpretation between "tense matching" PRs (TM-PRs) and TMM-PRs. Finally we argue that the kind-based DP-account explains why Italian allows TMM-PRs but other PR languages do not.

2. Moulton & Grillo 2015: PRs are event-denoting DPs

As shown in (1), PRs involve a DP subject (DP_S), followed by a C introducing a finite clause with a subject gap. It has been well-established that PRs are not relative clauses (RCs): PRs do not allow relative pronouns and they impose tight restrictions on both the tense and aspect of the embedded clause, among other differences (Radford 1977, Kayne 1975, Guasti 1988, Cinque 1992, Rafel 1999, Casalicchio 2015, a.o.). M&G (2015) argued that PRs are constituents (3a) that denote events/situations, not individuals.³ We further showed that PRs are DPs: unlike finite CPs and infinitives, but like DPs, PRs can complement prepositions (3b-c) and can coordinate with other DPs that denote individual events (3d).

- (3) a. Ciò che₁ /(*Chi₂) ho visto è Maria₂ che piangeva₁

 That which /(Who) I.have seen is Maria that cry-IMPF

 'What /(*Who) I saw was Maria crying' (after Radford 1977, (98))
 - b. La vista [$_{PP}$ di [$_{PR}$ Carlo che balla il tango]] è da non perdere. The sight of Carlo that dance.PRES the tango is to not miss 'The sight of Carlo dancing the tango is not to be missed' (Cinque 1992, (35b))
 - c. *La vista di Carlo ballare/ che Carlo balla ...
 The sight of C. dance.INF/ that C. dances ...
 'The sight of C. dancing'
 - d. Ciò che vorrei vedere è [PR Gianni che balla] e [DP l'evento That which I.would.want to.see is G. that dances and the event di cui mi parlavi]. of which to.me you.spoke.

 'What I would want to see is G. dancing and the event you told me about.'

³In some languages, strings that correspond to PRs have another non-constituent parse (Cinque 1992, Grillo & Moulton, Under review). This paper is about the constituent parse.

2.1 Semantic evidence for DP analysis

In addition to syntactic category, PRs differ from CPs in that they are not available under propositional attitude verbs (4a). Like infinitives and unlike finite CPs, PRs are interpreted as direct perception complements (4b,c), and do not impute a propositional attitude to the matrix subject as shown in the continuations in (4b,c).

- (4) a. Gianni ha sostenuto/intuito/dedotto **che Maria correva/ *M. che correva**. Gianni has claimed/guessed/deduced that M. ran/ M. that ran. 'Gianni claimed/guessed/deduced that M. ran/ M. running.'
 - b. Lea ha visto **che Gianni piangeva**, ...#ma pensava ridesse. Lea has seen that G. cry.IMPF, ... but thought laugh.SUBJ. 'Lea saw that Gianni was crying, #but she thought he was laughing.
 - c. Lea ha visto **Gianni piangere**/ **che piangeva** ... ma pensava ridesse. Lea has seen Gianni cry.INF/ that cry.IMPF ... but thought laugh.SUBJ. 'Lea saw Gianni cry/ crying ... but she thought he was laughing.'

Direct perception verbs describe a relation between a perceiver and an individual situation/event (Barwise 1981),⁴ whereas indirect perception verbs describe a relation between an attitude holder and a proposition, a set of possible situations (Kratzer 1989). Higgin-botham (1983) establishes that infinitival complements of direct perception are existentially quantified situation/event descriptions. This is clear in (5a), where the infinitive scopes below negation. The PR in (5b), however, is referential; its existence commitment projects out of negation.

- (5) Since L. has never danced ...
 - a. Max non ha visto L. ballare.M. NEG has seen L. dance.INF

'M. has never seen L. dance.'

b. #Max non ha visto che ballava.

Italian Pseudo-Relative

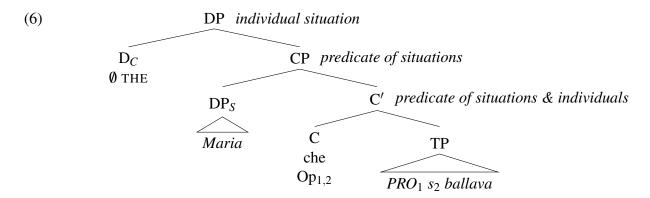
Italian Infinitive

M. NEG has seen that danced.IMPF

'M. has never seen L. dance.'

M&G show that PRs, in contrast to infinitives, are also scopeless under higher quantifiers, numerals and in conditionals (to save space, we show this below when comparing TM-and TMM-PRs, the same contrast is also displayed by Greek, Spanish and Dutch). M&G propose that PRs are headed by a definite determiner, which explains the facts reviewed so far: (i) PRs distribute like DPs; (ii) PRs are *referential descriptions of events* (6) (iii) PRs are not scope-bearing. The parse tree in (6) sketches how Grillo and Moulton (Under review, In prep.) derive PRs.

⁴We use the terms interchangeably in this short report.



3. Mismatch PRs denote Kinds

The above observations hold with TM-PRs. As mentioned, there is at least one combination where "mismatch" is possible: when the matrix is present perfect and the PR is present (7a). Since present perfect places the *seeing*-event in the past, it is surprising that the PR — the object of perception — can be present. Nonetheless, (7a) describes past direct perception of a past event. With a matrix verb in the simple past (SP), mismatch is ungrammatical (7b).

- (7) a. Gianni ha visto Maria che balla.
 - G. has seen M. that dance.PRES
 - 'G. has seen Mary dancing.'
 - b. *Gianni vide Maria che balla.
 - G. saw.SP Maria that dance.PRES.

We are going to argue that TMM-PRs as in (7a) must refer to an event kind, and indirectly they provide an event of that kind that is perceived (in the past). What (7a) reports, we claim, is two-fold: it expresses a past direct perception of (at least) one event of Mary dancing but additionally requires a habitual interpretation of the embedded clause. That TMM-PRs must have a habitual interpretation is shown by their inability to combine with episodic temporal modifiers (generic modifiers generate event sub-kinds):

- (8) Gianni ha visto [Maria che balla il Giovedì/ *Giovedì scorso].
 - G. has seen M. that dances the Thursday/ Thursday last.
 - 'G. has seen Mary dancing on Thursdays/ last Thursday.'

We stress that this is no ordinary embedded habitual sentence. First, it still gives rise to the perceptual report that there was (at least) one event of Mary dancing that Gianni perceived. Secondly, even these PRs can be shown to be DPs (9a,b) by the same diagnostics as TM-PRs.

(9) a. Ciò che ho visto sono [*DP* i concerti] e [*DP* Lea che balla]. What that I.have seen are [the concerts] and [L. that dances.PRES]. 'What I have seen is the concerts and Lea dancing.'

b. [Le foto di [Maria che balla]] sono sempre noiose.

The pictures of M. that dances.PRES are always boring.

'Pictures of M. dancing (i.e. of this kind of event) are always boring.'

The natural questions to ask are the following: (i) How can a habitual sentence serve as the object of direct perception? (ii) Why are TMM-PRs licensed under present perfect but not simple past? Question (i) arises because, as a habitual, the events described by the PR should be too many (Ferreira 2005) to serve as the object of a (singular) direct perception event (note that (7a) is true if Gianni only ever saw Maria dance once). We are going to propose that a null determiner heading the PR converts these habituals into referential descriptions of event kinds. Our evidence for this is related to our answer to (ii). It turns out that with noun-based definites, a similar contrast to that in (7a)/(7b) emerges in Italian. A definite singular object of a verb such as *see* is more easily interpreted as kind-denoting under present perfect (10a) than simple past (10b), where it gets a token interpretation.

(10) a. Gianni ha visto **il leone**. b. Gianni vide **il leone**G. has seen.EXPPERF the lion. G. saw.SP the lion.
'G. is a guy who has seen lions' (=TYPE)
'G. saw the lion' (=TOKEN)

As the translation suggests, (10a) reports that Gianni saw an instantiation of a lion-type. This is the Experiential Perfect (EXPPERF) (Comrie 1976), and it promotes kind readings for DP objects. The simple past only allows a token interpretation for the definite (see Carlson 1977, 446). Just as with PRs, the present perfect is crucial for allowing a kind interpretation. We do not currently know *why* this should be true of simple past versus experiential perfects. However, the correlation holds. In the next section we present more evidence that TMM-PRs are kinds, and we show that when they compose with perception verbs they give rise to different scope properties than TM-PRs.

We would like to stress here that even TM-PRs can give rise to a habitual/kind interpretation (e.g. (1a) can report perception of a past token of an event kind). This is expected, since imperfective can likewise be past habitual. The important point is that TMM-PRs can *only* deliver kind interpretations, because a present episodic interpretation does not meet the simultaneity requirements on direct perception.

3.1 Evidence for kind-like behaviour of TMM-PRs

Outside of direct perception reports, many kind-taking predicates also take present PRs (*sopportare* 'can't stand', *comune* 'common').

- (11) a. Non sopporto [Gianni che fuma in casa mia]/questo tipo di situazione. NEG stand G. that smokes in house mine/this type of situation. 'I can't stand G. smoking in my house/this type of situation.'
 - b. [Maria che balla] è piuttosto comune.
 M. that dances is rather common.
 'Mary dancing is rather common.'

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Now, (11) shows that PRs *can* denote kinds. Now we want to show that TMM-PRs under perception verbs must denote event kinds. That is, when a TMM-PR meets a verb like *see*, which takes individual event tokens (not kinds, and certainly not habitual propositions!), it nonetheless passes diagnostics for kind-hood (while at the same time asserting perception of an instance of the kind). We have already seen this with respect to temporal modifiers (8). Likewise, as with other kind-denoting DPs, TMM-PRs in perception reports show a limited capacity to establish a discourse referent (a) as compared to TM-PRs (b):

- (12) a. Tutti abbiamo visto [M. che balla]₁, *pro₁ è stato uno spettacolo. All we have seen M. that dance PRES, pro is been a sight.
 - b. Tutti abbiamo visto [M. che ballava]₁, pro_1 è stato uno spettacolo. All we have seen M. that dance.IMPF, pro is been a sight. 'We all saw M. dancing, it was quite a sight.'

Similar observations extend to DPs within TMM-PRs. Reference to a bear with *pro* is only allowed in the matching version (13a) not with a TMM-PR (13b).⁵

- (13) a. Tutti abbiamo visto un orso₁ che ballava (pro₁ era un grizzly). All we.have seen a bear that dance.IMPF (it was a grizzly).
 - b. Tutti abbiamo visto un $orso_1$ che balla (*pro $_1$ era/è un grizzly). All we.have seen a bear that dances.PRES (it was/is a grizzly). 'We all saw a bear dancing (it was/is a grizzly)'.

Finally, Anderson and Morzycki (2015) have identified the word *così* as a type of kind anaphor, targeting traditional kinds, event kinds (manner) and degree (14a–c). TMM-PRs license *così*, but TM-PRs do not (14d), further supporting a kind analysis for TMM-PRs.

- (14) a. KIND b. MANNER c. DEGREE
 Un cane così. Si comporta così. Alto così.
 'Such a dog' 'He behaves such' 'Such tall'
 - d. Una ragazza che corre/*correva, tutti abbiamo visto una cosa **così**. A girl that run.PRES/run.IMPF, all we.have seen a thing such. 'A girl running, we all saw this kind of thing'.

In sum, there exist undeniably event kind-denoting PRs (as under verbs like *comune* 'common'). Further, even under present perfect direct perception reports, TMM-PRs show the characteristics of denoting kinds. In the next section we sketch a solution for how such TMM-PRs are derived and how they combine with perception verbs.

⁵Obviously, both types of PRs allow for referential NPs in both subject and object position. However indefinites must be non-specific in TMM-PRs, but can be specific in TM-PRs.

3.2 Kinds and PRs

We take it that kind PRs contain habituals, and these describe a plurality of events (Ferreira 2005). Episodic sentences, on the other hand, describe singular events. Both present and imperfective can be interpreted as habituals or episodic events, but under present-perfect present tense *must* be interpreted habitually (otherwise the simultaneity conditions cannot hold). But this does not explain how a habitual can be interpreted under direct perception—i.e. as an individual event. To this end, we follow Chierchia in two respects. First, as was shown in (9), TMM-PRs (like TM-PRs) are DPs. In M&G we proposed that TM-PRs are headed by a null definite determiner. We claim that the determiner in TMM-PRs corresponds to Chierchia's nominalization operator \(^{\cappa}\), which takes a plurality and returns a kind (15). In the usual case, P denotes a property of plural ordinary individuals (16):

(15) For any property P and world w, \cap P = λ w ι P_w, if:

 $\lambda w \iota P_w$ is in the domain of Kinds K; P is plural (undefined otherwise)

(after Chierchia 1998, 16)

- (16) Dogs are widespread.
 - a. **dogs** = property describing a plurality of dogs
 - b. \bigcap **dogs** = the dog kind
 - c. **widespread**(\cap **dogs**) = 1 iff the dog-kind is widespread

When \cap meets a plurality of eventualities—which is what a habitual sentence denotes following Ferreira (2005)—it will return the event kind associated with this plurality.

- (17) $[_{DP} D [_{CP} Maria che balla]]$ è piuttosto comune. M. that dances is rather common. 'Mary dancing is rather common.'
- (18) $[DP \ D \ [CP \ Maria \ che \ balla\]] = \cap (Maria \ che \ balla) = the kind associated with an event of Maria dancing comune(<math>\cap$ (Maria che balla)) = The kind that is Maria dancing is common

When a kind-denoting PR combines with a token-taking verb (like *see*) we also follow Chierchia in shifting the verb to take kinds. To demonstrate in the nominal domain, take for instance (19) (from Chierchia 1997, ex. 18): the demonstrative refers not to the lion depicted on the page, but to the lion-kind, an instantiation of which I saw at the zoo.

(19) [pointing at a picture of a lion in a zoology book] I saw that in the zoo.

⁶Ferreira contends that (bare) habituals are headed by definite (plural) determiner. That option seems not to be available to PR complements. If it were, we would expect the sentences above to involve perception of a plurality of events, which we believe they do not.

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Chierchia proposes the type-shifting operation in (20) to allow token-taking predicates to combine with kinds:

(20) Derived Kind Predication (DKP): If P applies to an object & k denotes a Kind, then $P(k) = \exists x [{}^{\cup}k(x) \& P(x)]$ ${}^{\cup}k = \text{the property describing instantiations (='tokens') of k}$

The result is that an instantiation (or token) of a kind is existentially introduced. If extended to transitive predicates like perception verbs, DKP derives the following for (7a):

(21) $\operatorname{see}([DP^{\cap}[CP \text{ Maria che balla }]])(I) \rightsquigarrow \operatorname{see}(^{\cup}[DP^{\cap}[CP \text{ Maria che balla }]](x))(I) = \exists s[s \text{ is a (token) event of dancing by Maria & } \operatorname{see}(s)(I)]$

This predicts that in comparison to TM-PRs — which refer to token events described by the PR — TMM-PRs will have different scope properties. Recall that TM-PRs are referential, and so are expected to interact with higher quantifiers like definites would. TMM-PRs, if as hypothesized, combine with perception verbs via DKP, will show low existentially quantified scope. This prediction is borne out. Under higher universal quantifiers, TM-PRs do not distribute, and generally give rise to single event interpretations (22a). This is expected if TM-PRs are definite descriptions of events: e.g. *Everyone saw the dance by Mary* is only true if there is one (relevant) dance by Mary. This is in contrast to infinitives which, being existentially quantified, give rise to multiple event interpretations (22b). Crucially, TMM-PRs allow multiple perceived events, which is consistent with the analysis in which there is a low scoping existential that arises from DKP (22c):

(22) Tutti hanno visto...

'All have seen...

a. Maria che ballava.
b. Maria ballare.
c. Maria che balla.
dancings
TM-PR: Single dancings
Infinitive: Multiple dancings
TMM-PR: Multiple dancings
....Maria dancing.'

Further, TM-PRs inside a conditional presuppose the existence of the event (23a) (cf. to definites *If Maria had seen the dance by Gianni,...*). TMM-PRs do not presuppose the event: (23b) allows the continuation: "but fortunately G. never danced and never will."

- (23) a. Se Maria avesse visto Gianni che ballava si sarebbe arrabbiata. If M. had.COND seen G. that danced SE be angry. 'If M. had seen G. dancing she would have got angry.'
 - b. Se Maria avesse visto Gianni ballare /che balla si sarebbe arrabbiata. If M. had.COND seen G. dance /that dances SE be angry.

⁷Of course, by virtue of the habitual in TMM-PRs, there are multiple events implied generally, but not necessarily multiple percieved events outside of these cases under a universal.

Finally, TM-PRs and TMM-PRs differ in their interpretation when elided. Kind-denoting expressions (e.g. weak definites, Carlson and Sussman 2005, Aguilar Guevara 2014, and reference cited therein) allow so-called sloppy readings under ellipsis: in *John read the newspaper and Mary did too*, the newspapers can be distinct tokens. The corresponding thing happens with TMM-PRs in (24a): the event the director sees is different from what we did. A TM-PR (24b) prefers the same event to be witnessed, but marginally allows a 'sloppy interpretation' because of the episodic/habitual ambiguity of the imperfect. As noted above, a perception verb in the simple past does not license a kind denoting object. This rules out interpreting the imperfective PR as habitual but instead it is a definite description of a past event. As expected, *only* the 'strict' reading is possible (24c).

- (24) a. Abbiamo visto M. che balla, anche il direttore. SLOPPY/*STRICT We.have seen M. that dances.PRES, also the director.
 - b. Abbiamo visto M. che ballava, anche il direttore. STRICT/?SLOPPY We.have seen M. that dance.IMPF, also the director.
 - c. Vedemmo M. che ballava, anche il direttore. STRICT /*SLOPPY We.saw.SP M. that dance.IMPF, also the director. 'We all saw M. dancing, even the director.'

4. Concluding Remarks and Cross-linguistic Variation

Our analysis is supported by an interesting cross-linguistic prediction: if kind-denoting PRs are introduced by a kind-creating (definite) D, we predict them to be available only if a language allows such definites in PR-taking environments. Contrary to Italian (25a), French, Spanish and Greek allow TM-PRs but not TMM-PRs under present perfect or imperfective. Strikingly, none of these languages allow noun-based, kind-denoting definites in PR-licensing environments (they resort to bare or partitive NPs instead).

- (25) a. Ho visto il leone(=TOKEN/TYPE) /Maria che balla.
 - b. J'ai vu le lion (=TOKEN/*TYPE) /*M. qui danse.
 - c. He visto al leon (=TOKEN/*TYPE) /*Maria que baila.
 - d. Evlepa **to liontari** (=TOKEN/*TYPE)/*ti Maria pu xorevei. I.see.IMPF the lion /the M. that dances.PRES. 'I saw (the) lion(s)/Mary dancing.'

The correlation between ability to license kind-denoting definites and kind-denoting PRs extends to existential constructions and kind-taking predicates (e.g. *sopportare*, see Grillo and Moulton (In prep.) for discussion). Weak Definites are also allowed in these languages, but not in these environments (see Zamparelli 2002). If PRs are always headed by determiners, then an explanation for the variation can be readily offered: kind-referring PRs are only allowed in languages that allow a kind interpretation of definite DPs in PR-environments.

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