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Japanese internally headed relatives: Their distinctness from potentially homophonous constructions

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This paper pursues two closely inter-related goals. One goal is to clarify and systematize the ways in which each of four distinct Japanese constructions, in particular, internally headed relatives, adverbial clauses, complement clauses, and gapless externally light-headed relatives, can be distinguished from the others in cases of homophony. The other goal is to use the results obtained in the pursuit of the former goal for the purpose of refuting earlier challenges to the theses that Japanese internally headed relatives are island-sensitive, get invariably construed as definite descriptions, disallow definite referential internal heads, and exhibit a ‘change’ sub-variety that is not reducible to gapless externally light-headed relatives. The paper assumes the correctness of the analytical approach outlined in Grosu & Landman (2012), and – crucially – that of the conceptual and technical refinements to the latter proposed in Landman (2016), some of which rely on the results of this paper.

Keywords: internally headed relatives; adverbial clauses; complement clauses; gapless externally light-headed relatives; ‘change’-internally headed relatives; split-headed relatives; homophony

1 Introduction

Japanese is a language with both externally-headed and internally-headed relatives (henceforth: EHRCs and IHRCs respectively). EHRCs constitute a ‘primary’ relativization strategy, in the sense that, as far as we can tell, all speakers of the language accept them, while IHRCs constitute a ‘secondary’ relativization strategy, in the sense that some speakers do not accept them at all, and the remainder of speakers form sub-classes according to the range of constructions they allow (for details, see below). This state of affairs notwithstanding, Japanese IHRCs have formed the object of a considerable amount of research in the earlier literature, which has dealt with various aspects of their syntax, semantics and pragmatics (an undoubtedly incomplete list of references being Kuroda 1974; 1975/76; 1976/77; 1992; 1999; Tsubomoto 1981; Kitagawa & Ross 1982; Itô 1986; Ishii 1989; Uchibori 1991; Watanabe 1992a; b; Horie 1993; Matsuda 1993; Mihara 1994; Murasugi 1994; 2000; Ohara 1994; 1996; Ohori 1994/95; Hoshi 1995; 1996; Tonosaki 1996; 1998; Shimoyama 1999; 2001; Nomura 2000; 2013; Kim, Y.B. 2002; Kitagawa 2005; Kim, M.J. 2007; 2008; Kubota & Smith 2007; Grosu 2010; Grosu & Landman 2012).

One fact that was recognized at an early stage of this research, in particular, in Kuroda (1992), which constitutes a collection of studies published in the nineteen-seventies (see

quotations above), is that these IHRCs may be string-wise homophonous with at least two other distinct constructions, in particular, complement clauses and adverbial clauses of certain types. Furthermore, Hoshi (1995: 122, fn5) pointed out a third construction that is potentially homophonous with IHRCs of a certain sort, and which constitutes a special variety of what was called ‘pseudo-relatives’ in Inoue (1976) (an explicit characterization of this construction is provided in the next section). Each of these four constructions is distinguishable from the remaining three under certain circumstances and by means of certain tests, as will be seen in what follows.

By and large, homophony may arise due to the combination of two states of affairs. On the one hand, all four constructions have the superficial appearance of a complete sentence followed by the item *no*, which is itself followed by one of the items *ga*, *o*, *ni*, *no*. On the other hand, the item *no* has a number of possible functions and interpretations, in particular, complementizer/nominalizer, pronominal element, and Genitive Case marker (but see Kitagawa & Ross 1982 for a different view), and the items *ga*, *o*, *ni* may function either as Case markers of arguments, or as a subpart of a ‘subordination marker’ that gets suffixed to adverbial clauses. The combination of these two factors is responsible for a variety of instances of homonymy.

Despite recognition (by Kuroda and by a number of subsequent writers) of the need to examine constructions with the appearance just indicated with some care, homonymy has, we will argue, caused a number of earlier scholars to fall into the trap of mistaking adverbials, complements, and/or pseudo-relatives of the kind alluded to above for IHRCs, and have for this reason attributed to the latter properties they arguably do not possess. One of the principal goals of this paper is to expose the confusion which we have detected in a number of earlier proposals, and thus to put a particular view of the properties of IHRCs on a firmer basis.

Prior to offering a refutation of these earlier challenges, we provide in section 2 an informal characterization of the four constructions, bringing up unambiguous illustrations, and indicating properties of individual constructions that may be used to exclude homophony, as well as others that may induce homonymy under specific circumstances. In subsequent sections, we pursue the twin goals of supporting with novel arguments properties of IHRCs that were proposed in earlier literature and of refuting challenges to these earlier proposals, some of which, albeit not all, are traceable to a failure to recognize the implications of homophony.

2 The four potentially homophonous constructions

We begin our presentation with complement clauses of the kind under consideration. In contrast to complement clauses ending in *to*, which denote propositions, complements ending in *no* denote eventualities, i.e., events and states (see Josephs 1976 for complementation in Japanese). Therefore, complements occur as arguments of verbs that select eventualities. Ambiguity with an IHRC construal arises when the selecting head can also select individuals (which is what IHRCs typically denote), and is excluded when this is not the case. Thus, the bracketed constituent in (1a) (= (63) in Kuroda 1992) is unambiguously a complement, because one can only anticipate eventualities, not individuals, and the one in (1b) (= (64) in Kuroda 1992) is ambiguous between a complement and an IHRC construal, because one can see either an individual, or an entire ‘scene’ in which some event takes place or some state is instantiated, and in which some individual may play a role. We return to (1a) below, after characterizing adverbial clauses, indicating why an adverbial construal of this example is also excluded.

- (1) a. Taro-wa [[ringo-ga sara-no ue-ni aru]-no]-o yokisitei-ta.
 Taro.TOP apple.NOM plate.GEN on exist.PRES.NML.ACC anticipate.PAST
 ‘Taro anticipated that there would be an apple on the plate.’
 b. Taro-wa [[ringo-ga sara-no ue-ni ar-u]-no]-o mi-ta.
 Taro.TOP apple.NOM plate.GEN on exist.PRES.NML.ACC see.PAST
 ‘There was an apple on the plate, and Taro saw it.’ ← **IHRC**
 ‘Taro saw [the scene of] an apple being on the plate.’ ← **Complement**

For completeness, we note that the complement clauses in (1) exhibit the Accusative Case marker *-o*. However, complement clauses, much like nominal arguments, may exhibit any Case marker that verbs can assign. We illustrate in (2)-(3) complement clauses with the Case markers *-ga* and *-ni* respectively. Since Japanese verbs do not assign Genitive Case, there are no *-no* marked complement clauses.

- (2) [[ringo-ga sara-no ue-ni aru]-no]-ga Taro-niyotte yokis-are-tei-ta.
 apple.NOM plate.GEN on exist.PRES.NML.NOM Taro-by anticipate.PASS.AUX.PAST
 ‘That there would be an apple on the plate was anticipated by Taro.’
 (3) pro [[kanozyo-ga sono uta-o utatte-i-ru]-no]-ni kikiit-ta.
 I she.NOM that song.ACC sing.PROG.PRES.NML.DAT listen.to.PAST
 ‘I listened enraptured to her singing of that song.’ (= adapted from (19f)
 in Josephs 1976)

As already noted above, IHRCs typically denote individuals, and so do EHRCs in general and pseudo-relatives in particular. We will now discuss pseudo-relatives and IHRCs, in that order.

As a preamble to discussing pseudo-relatives, we note that ‘regular’ EHRCs exhibit a nominal of potentially arbitrary complexity at their right-edge (i.e., their external head; henceforth: EH), and a ‘corresponding’ gap within the relative. The EH may be a full-fledged nominal, as in (4), or a ‘light head’, as in (5). Of special relevance in the present context is the fact that the EH may be the light head *no*, which functions here as a pronominal element.

- (4) [[Mary-ga [e] kat-ta] ringo]
 Mary.NOM buy.PAST apple
 ‘the apple(s) that Mary bought’
 (5) [[Mary-ga [e] kat-ta] {mono, yatu, no}]
 Mary.NOM buy.PAST {thing, thing (vulgar) one}
 ‘the {thing(s), one(s)} that Mary bought’

Importantly, *no* as a pronominal is appropriate for denoting inanimate entities, animals, or human babies, but not mature or venerable humans, in contrast to *no* in IHRCs, where it is subject to no such restrictions. We illustrate in (6) (= (11) in Kuroda 1976/77) the infelicity of an EHRC headed by *no* which purports to denote venerable humans. Illustrations of felicitous IHRCs with such denotata will be provided in what follows.

- (6) #[[asoko ni [e] tatte-irassya-ru] go-roozin]-o soko-ni oyobi-site,
 (over)there stand.PROG.PRES (HON) aged (HON).ACC there have.come
 [[mukoo-ni [e] tatte-irassya-ru] no]-o koko ni oyobi-site kudasai.
 (over)there stand.PROG.PRES (HON) one.ACC here have.come please
 ‘Please have those honorable aged persons standing over there come there
 near you, and those standing far over there come here.’

The variant of (5) with *no* was dubbed ‘free relative’ in Itô (1987), but we prefer the term ‘gapped light-headed EHRC’, because the term ‘free relative’ has been pre-empted in the Western linguistic literature for constructions in English and other languages that exhibit no overt EH. Such light-headed EHRCs are not potentially homophonous with IHRCs, even though both have a *no* element at their right-edge, because IHRCs may not contain a comparable gap within the relative (for reasons to which we return below). However, there is a particular variety of light-headed EHRCs that may, under certain circumstances, be homophonous with a particular variety of IHRCs. We will call the former ‘gapless light-headed EHRCs’, and the latter, ‘change IHRCs’, a term due to Tonosaki (1996). Gapless light-headed EHRCs are a special case of a larger class, in particular, the one that Inoue (1976) dubbed ‘pseudo-relatives’, and for which we prefer to use the more transparent term ‘gapless EHRCs’. In gapless EHRCs, the EH may be either a full-fledged nominal or a light one, and what distinguishes them from other EHRCs is that the EH has no ‘corresponding’ nominal gap within the relative, the ‘connection’ between the relative and the EH being established through contextually licensed implicit ‘extensions’, as in (7), where we indicate such extensions in italics in the English translation ((7b, c) are adapted from Matsumoto 1989).¹

- (7) a. [[ni tasu ni-wa yon dearu] suugaku-no riron]-ga Peano sanzyutu da.
 2 plus 2.TOP 4 COP mathematics.GEN theory.NOM Peano arithmetic COP
 ‘The mathematical theory such that $2 + 2 = 4$ [*according to it*] is Peano arithmetic.
- b. [[PRO_{arb} yoru toire-ni ik-e-naku-na-ru] terebi]-ga gogo ku-zi-ni hazima-ru.
 night bath room.to go.can.NEG.become.PRES TV.NOM p.m. 9.CL.at start.PRES
 ‘The TV (program) such that you would be unable to go to the bathroom at night [*due to it*] will start at 9 pm.’
- c. daigakusei-wa [[atama-ga yoku-na-ru] hon]-o motto yomu-beki-da.
 college student.TOP head.NOM better.become.PRES book.ACC more read.should.COP
 ‘College students should read more books such that (one’s) mind improves [*if one reads them*].’

Of special interest to us is the special case of a variety of gapless EHRCs in which a needed extension is achieved not by appealing to pragmatics, as in (7), but due to the presence in the relative clause of a **change-of-state** verb, due to which the relative clause denotes a **process of change** and the EHRC denotes the resulting product of this process, as in (8), or some property or aspect of that product, as in (9). Each of these examples exhibits both a full-fledged EH and a *no* EH, which are boldfaced for perspicuousness.

- (8) [[Sally_i-ga orenzi-o sibottekure-ta] **zyuusuu**]-wa oisikat-ta ga,
 Sally_i.NOM orange.ACC squeeze.PAST juice.TOP delicious.PAST but
 [[pro_i ringo-o sibottekure-ta] **no**]-wa oisiku-nakat-ta.
 she_i apple.ACC squeeze.PAST one.TOP delicious.NEG.PAST
 ‘The juice [*resulting from the process of*] Sally squeezing oranges was delicious, but the one [*resulting from the process of*] her squeezing apples was not delicious.’

¹ For a comprehensive description of Japanese adnominal clauses, including gapless EHRCs, and their interpretation mechanisms, see Matsumoto (1989).

For the sake of clarity, we note that we are using ‘gapless’ with pre-theoretical import, and we thus take no rigid stand on whether the relative clauses in data like (7)-(9) are truly gapless, or include a syntactic gap which is interpreted in the way indicated in italics in the English translations by appealing to contextually licensed extensions. That is to say, we prefer the former view, but everything we say is compatible with an analysis that assumes the latter view, if anyone wants to adopt it.

- (9) [[sakana-ga koge-ta] **nioi**]-wa iya da ga,
 fish.NOM get.burnt.PAST smell.TOP awful COP but
 [[sakana-ga yake-ta] **no**]-wa oisisoo da.
 fish.NOM get.broiled.PAST one.TOP delicious COP
 ‘The smell [*resulting from*] fish having got burnt is awful, but
 the one [*resulting from*] fish having got broiled is delicious.’

When describing a change-of-state process, as in (8)-(9), Japanese gapless light-headed EHRCs headed by *no* are potentially homophonous with change IHRCs, in which the relative also describes a change-of-state process. Thus, while the relative clause of a change IHRCs can only describe a process of change (as their name says), and while gapless light-headed EHRCs headed by *no* can achieve pragmatic coherence in other ways as well, homophony potentially arises in the particular case where the latter construction achieves pragmatic coherence by means of a change-of-state verb. This being said, there are ways of controlling homophony and of obtaining incontrovertible constructions of both kinds. We postpone discussion of how to obtain incontrovertible change IHRCs until section 6. To obtain an incontrovertible gapless light-headed EHRC headed by *no*, it suffices to insert an adjective modifying *no*, as in (10), since the complementizer/nominalizer *no* in IHRCs may not be adjectivally modified².

- (10) [[[Sally-ga orenzi-o sibottekure-ta] oisisoona] **no**]-wa
 Sally.NOM orange.ACC squeeze.PAST delicious-looking one.TOP
 John-ga itadai-ta.
 John.NOM have.PAST
 ‘John drank the delicious-looking orange juice such that Sally
 squeezed oranges [*to obtain it*].’

Note that if we ensure unambiguous gapless light-headed EHRC status by using a modifying adjective, *no* may not denote a venerable entity (such as the skeleton of a shogun presumably is), just like *no* in a gapped light-headed EHRC (see (6)).

- (11) #[[[syoogun-ga koros-are-te zutto hootis-are-tei-ta
 shogun.NOM kill.PASS for.a.long.time put.PASS.AUX.PAST
 kekka hakkotukasite-simat-ta] mizimena] **no**]-o
 result become.skeletonized.AUX.PAST miserable one.ACC
 kasin-ga hisokani maisoosi-ta.
 vassal.NOM secretly bury.PAST
 ‘A vassal secretly buried the miserable object [*resulting from the fact*] that the
 shogun was killed a long time ago and his body has become skeletonized.’

For completeness, we note that when gapless EHRC status is coerced by means of adjectival modification, the construction demonstrably behaves like EHRCs in general, and unlike IHRCs, with respect to Topic-marking. Thus, as observed by Itô (1986), Kuroda (1999), and Matsuda (2002), incontrovertible IHRCs are not felicitous as (non-contrastive) topics, as illustrated in (12).

² See Tsubomoto (1981) and Ohara (1994; 1996) for the observation that the complementizer/nominalizer *no* in IHRCs is incompatible with adjectival modification, and see Hoshi (1995: 122, fn5) for some discussion and a warning concerning the structural ambiguity between the genuine IHRCs and the gapless light-headed EHRCs in Japanese.

- (12) a. [[**hon-ga san-satu** kireini narande-i-ta]-no]-ga (*pro*) kyuuni otiteki-ta.
 book.NOM three.CL neatly lined.be.PAST.NML.NOM suddenly fall.PAST
 ‘As three books were lined up neatly, they suddenly came down.’ ← **Adverbial**
 ‘Three books were lined up neatly, and they suddenly came down.’ ← **IHRC**
- b. *[[**hon-ga san-satu** kireini narande-i-ta]-no]-wa kyuuni otiteki-ta.
 book.NOM three.CL neatly lined.be.PAST.NML.TOP suddenly fall.PAST
 ‘(As for) the three books that were lined up neatly, they suddenly came down.’

Anticipating a fuller characterization of IHRCs and adverbials that will be provided further down in this section, we note that the bracketed constituent in (12a) can be an adverbial clause (because it ends in *no-ga*, an adverbial subordination marker; see below), or a non-change IHRC, because it contains a possible internal head (henceforth: IH), i.e., the boldfaced nominal, which partly characterizes the denotation of the entire constituent. It cannot be a gapless (light-headed) EHRC, because in such constructions, the connection between the EH and the relative clause is always established by contextually or lexically licensed extensions, since in gapless EHRCs in general, there is not only no gap, but also no nominal expression within the relative clause that can be construed as restricting the denotation of the complex DP, and in (12a), there **is** such an expression, in particular, the boldfaced nominal. In (12b), the bracketed constituent cannot be adverbial, because *no-ga* (or any other adverbial subordination marker) is missing, and it cannot be a gapless light-headed EHRC, for the same reason that the corresponding constituent in (12a) cannot be. Ergo, it can only be an IHRC, and its deviance shows that IHRCs disallow Topic marking.

With these facts in mind, note that the bracketed constituent in the full version of (13), which in view of adjectival modification of *no*, is an unambiguous gapless light-headed EHRC, happily allows Topic marking. If so, we conclude that the bracketed constituent in the reduced version of (13) is also a gapless light-headed EHRC, but not a possible change IHRC, because of the deviance of (12b).

- (13) [[[Sally-ga orenzi-o sibottekure-ta](oisisoona)] no]-wa
 Sally.NOM orange.ACC squeeze.PAST delicious-looking one.TOP
 John-ga itadai-ta.
 John.NOM have.PAST
 ‘(As for) the (delicious-looking) orange juice such that Sally squeezed oranges
 [to obtain it], John drank it.’

The fact that change IHRCs have the superficial appearance of a particular kind of gapless light-headed EHRCs has led some scholars to the hypothesis that the latter do not exist as an independent species (e.g., Ken Hiraiwa p.c.). We will argue against this view in section 6.

We now turn to a presentation of regular IHRCs, i.e., those in which there is an internal nominal which ‘corresponds’ to the denotatum of the entire construction (the IH). As hinted at already, both EHRCs and IHRCs typically denote individuals. There are, however, important differences between the two constructions, which have been amply noted and described in the literature, beginning with Kuroda’s seminal studies of the nineteen-seventies. We indicate here some of the most striking differences.

A first important difference, initially pointed out by Hoshi (1995) and subsequently elaborated on by Shimoyama (1999; 2001), is that IHs and EHs are construed within and without the relative respectively. More precisely, when these nominals are quantified, the scope of the quantifier is the matrix in EHRCs and the relative in IHRCs.

This can be gathered from the following pair (slightly adapted from Shimoyama's works just cited).

- (14) Taro-wa [[Yoko-ga reezooko-ni [e] irete-oi-ta] **hotondo-no kukkii**]-o
 Taro.TOP Yoko.NOM fridge.in put.AUX.PAST almost.all.GEN cookie.ACC
 paatii-ni motteit-ta. ← **EHRC**
 party.to bring.PAST
 'Taro brought to the party almost all the cookies that Yoko had put in the fridge.'
- (15) Taro-wa [[Yoko-ga reezooko-ni **hotondo-no kukkii-o** irete-oi-ta]-no]-o
 Taro.TOP Yoko.NOM fridge.in almost.all.GEN cookie.ACC put.AUX.PAST.NML.ACC
 paatii-ni motteit-ta. ← **IHRC**
 party.to bring.PAST
 'Yoko put almost all the cookies in the fridge and Taro brought {them, *some}
 to the party.'

The EHRC in (14) denotes, essentially, a significant majority of the cookies put in the fridge by Yoko (and presumably not all). In (15), the IH denotes a significant majority of a plurality of cookies that is not overtly expressed, and the IHRC, which has the force of a definite description, denotes the totality of the cookies put into the fridge by Yoko. There is no complex DP in English with the exact semantic properties of Japanese IHRCs (as amply noted in the literature; see, e.g., Grosu & Landman 2012), and we thus content ourselves with a fluent translation of (15) that makes use of E-type anaphora, the IH serving as antecedent of a definite anaphor. In so doing, we follow the practice adopted by Shimoyama (1999; 2001), without however adopting her theoretical analysis of IHRCs, which made direct use of the E-type strategy used in discourses (for reasons made explicit in Grosu 2010; Grosu & Landman 2012, which we comment on in section 3).

A second difference between EHRCs and IHRCs in Japanese, which was noted at the beginning of this article, is that these constructions constitute 'primary' and 'secondary' relativization strategies respectively. We call IHRC-formation a secondary strategy because there is considerable cross-idiolectal variation in the range of constructions that speakers accept. At one end of this spectrum, there are speakers who do not accept IHRCs at all, and at the other end, we find speakers who accept IHRCs with the IH 'buried' at a potentially arbitrary depth of embedding, subject only to certain island constraints, in particular, the Complex NP Constraint (henceforth: the CNPC) and the Adjunct Island Constraint (henceforth: the AIC). In between, we find speakers who accept only IHRCs with simplex relative clauses, as well as speakers who tolerate violations of the CNPC when the complex NP includes a noun-complement structure, but not when it includes a relative clause. In what follows, we focus on the intuitions of speakers who accept the widest range of constructions, because we view these as most revealing of the restrictions that IHRCs are (potentially) sensitive to, but will also note how the analysis we assume can be adapted to deal with idiolects in which the relative clause must be simplex. Note that if we were to focus on the most restrictive idiolects, there would be no analysis of IHRCs at all, since, as already noted, such idiolects do not tolerate IHRCs of any kind.

A third difference between EHRCs and IHRCs, prominently pointed out and illustrated by Kuroda and repeatedly discussed in the subsequent literature, is that only the latter needs to satisfy a certain semantico-pragmatic requirement in order to achieve felicity. Kuroda dubbed this requirement 'The Relevancy Condition', and its essential import may be expressed as in (16) (an adaption of Kuroda's original formulation, with some refinements).

(16) The Kuroda Relevancy Condition (KRC)

The matrix clause on the one hand and (some clause within) the relative clause or some proposition describing the outcome of the process of change in change IHRCs on the other hand must express eventualities that are, with the possible help of contextually licensed eventive extensions, naturally construable as parts of a *single* natural super-eventuality.

The reduced version of (16) suffices for idiolects that do not tolerate IHs embedded in a subordinate clause properly contained within the relative clause, the full version is, however, needed for idiolects that do tolerate this configuration. Implicit in the formulation of the full version is the assumption that the eventualities described by relative-internal clauses superordinate to the clause that introduces a thematic participant shared with the matrix must be able to undergo smooth integration into the unique natural super-eventuality. We will illustrate the applicability of the full version in section 3, and provide a brief illustration of the applicability of the reduced version directly.

Thus, note that the example in (15) satisfies the KRC, because the events described by the two clauses may be interpreted as part of a super-event of planning and implementing Taro's and Yoko's contribution to the party. This example also illustrates one type of necessary eventive extension: All by themselves, the events of putting the cookies in the fridge and of bringing them to the party do not form a natural super-eventuality, because they need not be (and are in fact most naturally construed as not being) temporally contiguous. They may, however, be construed as belonging to a single coherent and temporally contiguous super-eventuality if we assume that the event of putting the cookies in the fridge is extended with a state of their being there, which lasted until they were picked out of the fridge and brought to the party. Thus, it is the complex eventuality consisting of the simplex eventualities of (i) putting the cookies in the fridge, (ii) the cookies staying in the fridge, (iii) the cookies being taken out of the fridge, and (iv) the cookies being taken to the party, which is regarded as a single process.

Two examples that purport to illustrate the (in)felicity of data that respect and violate the KRC respectively are shown in (17a-b), reproduced from Shimoyama (2001: Ch. 3) (= her (43a) and (57b) respectively).

- (17) a. [[daidokoro-no mado-kara **siroi neko-ga** haitteki-ta]-no]-ga
 kitchen.GEN window.from white cat.NOM come.in.PAST.NML.NOM
 sakana-o totte nige-ta.
 fish.ACC steal run.away.PAST
 'A white cat came in from the kitchen window, and it stole a fish and ran away.'
- b. ?*[[**haiiro-no neko-ga** kinoo mado-kara haitteki-ta]-no]-ga
 gray.GEN cat.NOM yesterday window.from come.in.PAST.NML.NOM
 kesa mata yatteki-ta.
 this.morning again come.PAST
 'A gray cat came in from the window yesterday, and it came back this morning.'

(17a) is easily construable as denoting a unified super-event, in which the cat, having presumably caught the smell of fish through the open window, came into the kitchen in order to steal the fish, stole it, and ran away. In (17b), on the other hand, the two events of the cat coming in on distinct days are temporally non-contiguous and not obviously related by a salient eventive extension, hence the feeling of infelicity reported by Shimoyama. We note, however, that two consultants (Akira Watanabe p.c. and an anonymous person mentioned by a reviewer) did not find (17b) infelicitous. We conjecture that these persons were able to construe the two events as part of a larger eventuality, for example,

the characterization of a habitual pattern of behavior of the cat, say, coming into the house daily or frequently; note that in such a case, the repetitive events of coming need not be temporally contiguous. We surmise that individuals may differ in the extent to which they are willing or able to resort to at least certain types of event extension in order to satisfy the KRC.

For additional differences between the EHRCs and the IHRCs of Japanese, see section 1.1 of Landman (2016).

We now turn to the fourth and final construction, adverbial clauses. Such clauses may exhibit the subordinating suffixes *no-ga*, *no-o*, or *noni* (for the subordinating suffix *no-ni*, see example (23b) below), as in (18)-(20) respectively (adapted from (255)-(257) in Kuroda 1999)³.

- (18) [gozen-tyuu-wa ame-ga hutte-i-ta]-no-ga
 morning.during.TOP rain.NOM fall.PROG.PAST.no.ga
 gogo-ni-naru-to hi-ga kankan teri-dasi-ta.
 in.the.afternoon the sun.NOM start.blazing.PAST
 ‘{While, whereas} it was raining in the morning,
 the sun started blazing in the afternoon.’
- (19) Taro-wa [gozen-tyuu-wa hi-ga tette-i-ta]-no-o
 Taro.TOP morning.during.TOP the sun.NOM shine.PROG.PAST.no.o
 gogo-ni-natte ame-ga huri-dasite-kara deteit-ta.
 in.the.afternoon rain.NOM start.falling.after leave.PAST
 ‘{While, whereas} the sun was shining in the morning, Taro left after it started
 raining in the afternoon.’
- (20) Yamada-wa [gozen-tyuu-wa hi-ga tette-i-ta]-noni
 Yamada.TOP morning.during.TOP the sun.NOM shine.PROG.PAST.although
 gogo-ni-natte ame-ga huri-dasite-kara deteit-ta.
 in.the.afternoon rain.NOM start.falling.after leave.PAST
 ‘Although the sun was shining in the morning, Mr.Yamada left after it started
 raining in the afternoon.’

The bracketed constituents in these examples are unambiguously adverbial, because the matrix verbs are intransitive, in particular, one-place predicates, their single argument position is independently filled, and they thus have no argument position that can be filled by an IHRC or a complement clause. In addition, in (20), the bracketed constituent is construed adversatively, something that is only possible with adverbials, but not with IHRCs.

When the matrix verb possesses an argument position that can in principle be filled by an IHRC, homophony may arise under certain circumstances. Thus consider the (a) subcases of (21)-(23), and the versions of the corresponding (b, c) subcases where the positions filled by an IHRC in the (a) subcases are filled by an overt definite pronoun. The latter examples escape homonymy with the (a) subcases, due to the overt pronoun, and

³ We spell *no-ga*, *no-o* and *no-ni* with a hyphen and *noni* without one in keeping with the spirit of certain remarks made by Kuroda (1999). Kuroda, echoing the spirit of Ishigaki (1955), suggests that these three types of adverbial clauses have evolved out of IHRCs at earlier historical periods of the Japanese language. He also proposes that *noni* should be viewed as a completely lexicalized item, with no synchronic connection to the Dative Case, for two reasons: (i) *noni* adverbials are necessarily construed adversatively whenever such an interpretation makes sense (see the translations of (20) and (23c)), and incontrovertible Dative-marked arguments of verbs do not have this interpretation, and (ii) such adverbials occur happily in any position in a sentence, with no preference for positions where Dative Case is normally assigned (if such a position exists). In contrast, the interpretation of *no-ga*, *no-o* and *no-ni* adverbials is less strikingly distinct from that of Nominative, Accusative, and Dative IHRCs (see below in the text for details), and such adverbials seem to prefer positions in which such Cases are assigned (in case such positions exist), without rigidly requiring such positions, when available, given the option of scrambling constituents in this language.

All of this notwithstanding, the orthographic ‘concession’ we propose to make should not blur the fact that *no-ga*, *no-o* and *no-ni* adverbials are *bona fide* adverbials in every sense, and must be carefully distinguished from homophonous IHRCs, for reasons discussed below in the text.

thus exhibit unambiguous adverbials (see below for justification of this claim), much like (18)-(20). However, the positions filled by these overt pronouns may also be filled by a null pronominal (i.e., *pro*), and this gives rise to homonymy. Now, even these versions (with *pro*) are in no danger of being confused with the corresponding (a) subcases so long as *pro* is contextually interpretable as referring to some unmentioned entity or to some entity mentioned in earlier discourse. Confusion may arise, however, if *pro* is construed as anaphoric to the corresponding boldfaced constituent, for reasons we turn to directly.

- (21) a. [[daidokoro-no mado-kara **siroi neko-ga** haitteki-ta]-no]-ga
 kitchen.GEN window.from white cat.NOM come.in.PAST.NML.NOM
 sakana-o totte nige-ta.
 fish.ACC steal run.PAST
 ‘A white cat came in from the kitchen window and it stole a fish and ran away.’
- b. [daidokoro-no mado-kara **siroi neko-ga** haitteki-ta]-no-ga *pro/soitu-ga*
 kitchen.GEN window.from white cat.NOM come.in.PAST.NO.ga it.NOM
 sakana-o totte nige-ta.
 fish.ACC steal run.PAST
 ‘As a white cat came in from the kitchen window, it stole a fish and ran away.’ Or:
 ‘A white cat having come in from the kitchen window, it stole a fish and ran away.’
- (22) a. Anthony-wa [[**doroboo-ga huta-ri** nigete-i-ru]-no]-o tukamae-ta.
 Anthony.TOP thief.NOM two.CL run.away.PROG.PRES.NML.ACC catch.PAST
 ‘Two thieves were running away, and Anthony caught them.’
- b. Anthony-wa [**doroboo-ga huta-ri** nigete-i-ru]-no-o *pro/soitura-o*
 Anthony.TOP thief.NOM two.CL run.away.PROG.PRES.NO.O they.ACC
 tukamae-ta.
 catch.PAST
 ‘While two thieves were running away, Anthony caught them.’ Or:
 ‘As two thieves were running away, Anthony caught them.’
- (23) a. John-wa [[Mary-ga kesa **kuruma-o** sono kado-ni
 John.TOP Mary.NOM this.morning car.ACC that corner.at
 tome-ta]-no]-ni (gogo) butukat-ta.
 park.PAST.NML.DAT (afternoon) bump.into.PAST
 ‘Mary parked a car at that corner this morning, and John bumped into it (this afternoon).’
- b. John-wa [Mary-ga kesa **kuruma-o** sono kado-ni
 John.TOP Mary.NOM this.morning car.ACC that corner.at
 tometa]-no-ni (#gogo) *pro/??sore-ni* butukat-ta.⁴
 park.PAST.NO.ni (afternoon) it.DAT bump.into.PAST
 ‘The moment Mary parked a car at that corner this morning, John
 bumped into it (#this afternoon).’
- c. John-wa [Mary-ga kesa **kuruma-o** sono kado-ni
 John.TOP Mary.NOM this.morning car.ACC that corner.at
 tometa]-noni *pro/sore-ni* butukar-anakat-ta.
 park.PAST.although it.DAT bump.into.NEG.PAST
 ‘Although Mary parked a car at that corner this morning, John did not bump into it.’

⁴ The marginal status of (23b) with the overt pronoun marked with the Dative Case *-ni* might have something to do with the status of *-ni* as an inherent Case rather than a structural Case, and *-ni* is directly assigned by the predicate *butukar-u* ‘bump into’ in a “unique” manner in Japanese. Thus, at best, *sore-ni* ‘it-Dat’ sounds like a resumptive element in (23b). In the case of (23b) with *pro*, since the zero pronoun is phonologically null, *-ni* cannot be attached to it, which might result in its attachment to the nominalized adverbial instead. In fact, if *-ni* after the nominalizer *-no* is replaced with *-o* in (23b), the use of *sore-ni* does not pose any problem.

Insofar as the semantic relation between the adverbial and the matrix clause is concerned, it is necessary to distinguish between adverbials ending in *no-ga*, *no-o* and adverbials ending in *no-ni/noni*.

For adverbials with *no-ga* and *no-o*, the relation is quite flexible, and depends on what makes best semantic-pragmatic sense. Thus, in (18)-(19), the subordinate clause is ‘weakly’ contrasted with the matrix (a fact reflected in the use of *-wa* with contrastive focus import on *gozen-tyuu* ‘during the morning’), hence the translation with *while/whereas*. In (21b)-(22b), the subordinate clause seems to describe a sufficient condition for the matrix event, hence the translation with *as* or a gerundial verbal form; we note that (22b) may also be interpreted as indicating temporal intersection between the running and the catching events, hence the possibility of translation with *while*. Finally, if we change the matrix of (19) to the Japanese counterpart of, say, *Taro tried to get a tan*, the adverbial is construable as ‘since/in view of the fact that the sun was shining in the morning’, and has the force of a sufficient condition for the event described by the matrix (provided that the focus particle *-wa* is removed, since nothing is contrasted in this case); note that in this situation, the two events also intersect temporally.

A general remark about these adverbials is that although they are not semantically identical with homophonous IHRCs, and seem to be intuitively distinguishable by sufficiently sophisticated speakers, the semantic difference between the two types of construction is not very striking. In fact, it seems extremely difficult to imagine a situation in which one interpretation is true and the other one false if the adverbial is construed as including the antecedent of the anaphor in the matrix, and we view this state of affairs as responsible for at least some of the situations in which one type of construction has been mis-construed as being the other. But while truth conditions are not helpful for distinguishing the two constructions, we wish to note that it is possible to coerce an adverbial construal by using an overt anaphor in the matrix, an option indicated in (21)-(23). That incontrovertible IHRCs disallow such overt anaphors will be demonstrated below in connection with example (25).

For adverbials with *no-ni/noni*, the semantics is more rigid, each variant allowing a single type of interpretation. – Adverbials ending in *no-ni* require temporal simultaneity of the two events, and are illustrated by the reduced version of (23b). These adverbials, much like those ending in *no-ga* and *no-o*, are sometimes not strikingly different in meaning from homophonous IHRCs (cf. the reduced versions of (23a) and (23b)). At the same time, there are circumstances under which the difference in meaning becomes apparent, e.g., the contrast between the full versions of (23a) and (23b), which is traceable to the fact that the former, unlike the latter, does not require temporal simultaneity. – Adverbials ending in *-noni* require an adversative relation between the two eventualities, a state of affairs illustrated in (20) and (23c) (as already pointed out in footnote 2). An adverbial with this interpretation is unlikely, we assume, to be confused with a homophonous IHRC, and we know in fact of no specific instance in which confusion has arisen.

Importantly, all adverbials need to be related to the matrix by some significant relation, that is to say, the matrix and the adverbial clauses may not denote two entirely unrelated events. An arguable illustration of this state of affairs is (17b). We noted that some speakers find this example infelicitous, and concluded that they feel it violates the KRC. Note, however, that the infelicity judgment also points to the conclusion that a coherent adverbial construal is also unavailable; this conclusion is confirmed by the infelicity of English translations like #*{as, while, whereas} a gray cat came in from the window yesterday, it came back today*.⁵

⁵ The necessary semantic relations between the adverbial and the matrix arguably exhibit a family resemblance to the KRC. We will not explore here the certainly interesting question of whether the requirements

Before abandoning this topic, we wish to keep an earlier promissory note by returning to the example in (1a) (reproduced below for convenience), and by indicating why an adverbial construal seems not to be available.

- (1) Taro-wa [[ringo-ga sara-no ue-ni aru]-no]-o yokisitei-ta.
 Taro.TOP apple.NOM plate.GEN on exist.PRES.NML.ACC anticipate-Past
 ‘Taro anticipated that there would be an apple on the plate.’

Given that the verb *yokisitei(-ru)* ‘anticipate’ is transitive, we cannot exclude a syntactic analysis such that the object position is occupied by *pro*, and the bracketed constituent functions as an adverbial. However, a coherent interpretation does not seem to be available. The subordinate verb *ar-u* ‘exist’ is in the non-perfective aspect, and can be viewed as associated either with a non-past tense construal, and thus independent of the matrix tense, or as dependent on the matrix tense, and thus past. These two construals would yield interpretations translatable as (24a) and (24b) respectively, neither of which makes much sense.

- (24) a. #As there is an apple on the plate, Taro anticipated it.
 b. #As there was an apple on the plate, Taro anticipated it.

To be sure, (24b) might have a coherent meaning if *it* refers to a different event that is part of the assumed common ground between speaker and addressee, e.g., that his daughter would eventually steal the apple. But such a reading is so different from the complement construal of (1a) that no confusion could possibly arise.

Returning now to our current concerns, we have shown that adverbial construals may be unambiguous, as in (18)-(20), and that they may also be homophonous with IHRC construals, as in the versions of (21b)-(23b, c) with *pro* in an argument position in the matrix clause. It now remains to show that unambiguous IHRC construals can also be achieved. We note in this connection that Mihara (1994) suggested that all IHRCs are in fact adverbials (see also Murasugi 1994; 2000; Hoshi 1996), and thus that IHRCs as a separate construction do not in fact exist. This view may be appropriate for idiolects that do not allow IHRCs at all, but it is not appropriate with respect to the more permissive idiolects. We will now indicate two ways in which an adverbial construal can be blocked, making it possible to construct unambiguous IHRCs.

One way, already noted in the earlier literature (e.g., Watanabe 1992; Hoshi 1995; Kuroda 1999), is that there is no adverbial marker homophonous with the sequence *-no-no*. This state of affairs is brought out by the observation that if we attempt to use *-no-no* in necessarily adverbial constructions, e.g., in (18)-(20) and the versions of (21b)-(23b, c) with an overt definite pronoun, a grammatical result cannot be achieved, no matter how we play with the lexical content of the two clauses. This is not very surprising if the existing adverbials historically evolved out of verbal arguments (see footnote 2), since the evolutionary ‘jump’ from argument of the verb to modifier of an extended projection of the verb is arguably not too great. This historical change was not available to Genitive-marked IHRCs, because no verb of Japanese assigns Genitive Case, which is typically assigned to arguments and adjuncts within an extended nominal projection. Thus, for Genitive-marked IHRCs to become adverbials would require a different evolutionary process, and such a process has not taken place.

With this in mind, consider the acceptable (25), where the bracketed constituent marked with the Genitive Case is a possessor.

that affect the two kinds of constructions may be conflated in part or in whole, and leave the investigation of this issue to future research.

- (25) Ken-wa [[[Naomi-ga ofisu-ni **haiiro-no neko-o** tureteki-ta]-no]-no
 Ken.TOP Naomi.NOM office.DAT gray.GEN cat.ACC bring.PAST.NML.GEN
 ke]-o kat-ta.
 hair.ACC cut.PAST
 ‘Naomi brought a **gray cat** to the office and Ken cut her hair.’

This Genitive-marked constituent is not interpretable as a sentential complement, because there is no conceivable coherent relation between such a sentential complement and the head noun *ke* ‘hair’, and neither can it be a gapless light-headed EHRC, because the predicate in the embedded clause is not a change-of-state verb, so that the Genitive-marked constituent would denote not the product of a process of change, but rather an entity restricted by the presumed gapless relative clause. However, such an entity is not conceivable in relation to the head noun *ke* ‘hair’. Furthermore, it cannot be an adverbial, because inserting an overt definite anaphor, in particular, *soitu-no* ‘it-_{GEN}’, between the constituent bearing the Genitive Case marker and the head noun *ke* ‘hair’ results in ungrammaticality. Ergo, it is an IHRC.

A second way of avoiding an adverbial construal, which, to the best of our knowledge, has not been noted in the earlier literature, is by appealing to a variant of IHRCs that we may call ‘Split Headed Relative Constructions’ (SHRCs). The term ‘split’ purports to characterize the fact that a numeral which may in principle occur within an IH, may also occur outside CP, in particular, immediately to the right of the Case marker. Such split headed relatives are fully synonymous with minimally different IHRCs, but may not be construed as adverbials. A minimal pair of synonymous internally headed and split headed relatives is provided in (26).

- (26) a. John-wa [[Mary-ga **nempai-no happyoosya-o huta-ri** kuukoo-de
 John.TOP Mary.NOM elderly.GEN speaker.ACC two.CL airport.at
 mat-asete-oi-ta]-no]-o hoteru-e tureteit-ta. ← IHRC
 wait.CAUS.AUX.PAST.NML.ACC hotel.to take.PAST
 ‘Mary had two elderly speakers waiting at the airport, and John took them to a hotel.’
- b. John-wa [[Mary-ga **nempai-no happyoosya-o** kuukoo-de
 John.TOP Mary.NOM elderly.GEN speaker.ACC airport.at
 mat-asete-oi-ta]-no]-o **huta-ri** hoteru-e tureteit-ta. ← SHRC
 wait.CAUS.AUX.PAST.NML.ACC two.CL hotel.to take.PAST
 ‘Mary had two elderly speakers waiting at the airport, and John took them to a hotel.’

We note that in order to get a reading of (26b) that is synonymous with the IHRC construal of (26a), one must not pause before the numeral, because such a pause favors a partitive reading translatable as ‘Mary had elderly speakers waiting at the airport, and John took *two of them* to a hotel’. On this reading, the left sister of the numeral is an IHRC that serves as partitive complement. Alternatively, the constituent ending in *-o* could be an adverbial, and the numeral could combine with *pro*, the latter being construed as partitive complement, and yielding the reading ‘as Mary had elderly speakers waiting at the airport, John took *two of them* to a hotel.’ What matters for current purposes is that (26a) is string-wise homophonous with an adverbial construction translatable as ‘As Mary had two elderly speakers waiting at the airport, John took *them* to a hotel’, while the only adverbial construction string-wise homophonous with (26b) is a partitive one, translatable as indicated several lines above.

In ensuing sections, we will make use of these two tests for ensuring that specific constructions are unambiguous IHRCs.

3 Island-(in)sensitivity in adverbials and IHRCs

One observation that can be made with respect to the (b) and (c) subcases of data like (21)-(23) is that the relation between the boldfaced element within the adverbial clause and the overt or null pronominal in the matrix (in situations where they are construed as related) is the kind of anaphoric relation found in discourses. If so, we may expect the anaphoric dependency to be either of the E-type variety (i.e., with a quantified antecedent) or of the co-referential variety (i.e., with a definite antecedent), and thus, importantly, to be unbounded and island-insensitive (such dependencies being island-insensitive universally, as far as we know). Island-insensitivity is illustrated by the grammatical example (27), where the antecedent is internal to the relative clause of an EHRC, so that the anaphoric dependency violates the CNPC.

- (27) Bill_i-wa [[pro_i [[[e] huta-ri-no satuzinhan_j-ni
 Bill_i.TOP he_i two.CL.GEN murderers_j.by
 oikake-rare-tei-ru] zyosei]-ni kizui-ta]-no]-o pro_j/soitura_j-o ut-ta.
 chase.PASS.AUX.PRES woman.DAT notice.PAST.NML.ACC they.ACC shoot.PAST
 ‘As Bill noticed a woman who was chased by two murderers, he shot {*pro*, them}.⁶

With respect to IHRCs, some of the earlier literature has proposed that the semantic dependency between the IH and the entire IHRC must obey the CNPC. In particular, Watanabe (1992; 2003) brought up the data in (28a-b), which point to the conclusion that the dependency at issue is unbounded and sensitive to the CNPC. Note that the IHRC in (28b) ends with the sequence *-no-no*, which indicates that it is not a possible adverbial.

- (28) a. Mary-ga [[[John-ga [[zibun-no gakusei-ga **zyuuyoona kasetu-o**
 Mary.NOM John.NOM self.GEN student.NOM **important hypothesis.ACC**
 teian-si-ta] to] zimansite-ita]-no]-no kekkan]-o siteki-si-ta.
 propose.do.PAST COMP boasted.had.NML.GEN defect.ACC point.out.do.PAST
 ‘John had boasted that his student proposed **an important hypothesis**
 and Mary pointed out a defect in it.’
- b. *Mary-ga [[[John-ga [[**atarasii kasetu-o** teiansi-ta] gakusei]-o
 Mary.NOM John.NOM **new hypothesis.ACC** propose.PAST student.ACC
 homete-ita]-no]-no kekkan]-o siteki-si-ta.
 praise.had.NML.GEN defect.ACC point.out.do.PAST
 ‘John praised the student [who proposed **a new hypothesis**] and Mary
 pointed out a defect in it.’

To this example, we add the examples in (29)-(30), which show that the dependency under consideration is also sensitive to the AIC (Adjunct Island Constraint), something

⁶ As a reviewer perceptively observed, this sentence appears to violate a constraint that rules out double *-o* marking in a single clause (Harada 1973). The reason this sentence is nonetheless acceptable is that the double-*o* constraint unexceptionally applies only to constructions where the two tokens of *-o* are borne by *two arguments*. If one of the two tokens of *-o* is borne by an *adverbial constituent*, the constraint does not apply, as pointed out in relation to “situational adverbials,” such as *ame-no naka-o* (rain.GEN midst.ACC “in the rain”), in Kitagawa (1999) and pertinent references therein (see these works for further details). In any event, independent evidence of the suspension of the constraint in constructions comparable to (27) is provided by the following example (= (192) in Kuroda 1999), which Kuroda judged acceptable with the indicated sense, a judgment with which the Japanese co-author of this paper agrees.

(i) Taroo-wa [[watasi-ga ringo-o sara-no ue-ni oite-oita]-no]-o sore-o tabete-simat-ta.
 Taro.TOP I.NOM apple.ACC plate.GEN on put.AUX.NML.ACC it.ACC eat.AUX.PAST
 ‘As I had put an apple on the plate, Taro ate it.’

As noted by the same reviewer, this distinction in sensitivity to the double *-o* constraint between IHRCs and adverbials provides an additional test for distinguishing the latter from the former in cases of homophony.

which, to the best of our knowledge, has not yet been recognized in earlier literature. Note that the constituents within the most inclusive set of brackets are incontrovertible IHRCs, the one in (29), because it carries a Genitive Case marker, and the one in (30), because it is a SHRC.

- (29) ?*Mary-wa [[[John_i-ga [kare_i-no gakusei-ga **atarasii kasetu-o**
 Mary.TOP John_i.NOM his_i student.NOM **new hypothesis**.ACC
 teiansi-ta]-node kanki-no koe-o age-ta]-no]-no
 propose.PAST.because joy.GEN voice.ACC raise.PAST.NML.GEN
 akirakana kekkan]-o suguni siteki-si-ta.
 obvious defect.ACC promptly point.out.do.PAST
 ‘John shouted with joy [because his student proposed **a new hypothesis**], and Mary promptly pointed out an obvious defect in it.’
- (30) *?John-wa [[[Mary-ga [imooto-ga **nempai-no happyoosya-o** kuukoo-de
 John.TOP Mary.NOM sister.NOM **elderly**.GEN **speaker**.ACC airport.at
 mat-asete-oi-ta]-node totemo otituk-anakat-ta]-no]-o **huta-ri**
 wait.CAUS.AUX.PAST.because very stay.calm.NEG.PAST.NML.ACC **two**.CL
 hoteru-e tureteit-ta.
 hotel.to take.PAST
 ‘Mary was very nervous [because her sister had two elderly speakers waiting at the airport], and John took them to a hotel.’

Some earlier literature has denied that the IHRCs are sensitive to these two island constraints. Thus, Hoshi (1995) and Kuroda (1999) proposed that IHRCs are insensitive to the AIC on the basis of the acceptability of data like (31). Observe, however, that the constituent within the most inclusive set of brackets is in principle analyzable not only as an IHRC, which we assume is conducive to ungrammaticality, but also as an adverbial. Hence, its acceptability (on the latter reading) is unsurprising.

- (31) John-wa [[Mary-ga [kaseehu-san-ga ringo-o teeburu-no ue-ni oi-ta] ato-de
 John.TOP Mary.NOM housemaid.POL.NOM apple.ACC table.GEN on put.PAST.after
 dekaketesimat-ta]-no]-o (pro) kossori totte tabetesimat-ta.
 leave.home.PAST.NML.ACC secretly pick.up eat.up.PAST
 ‘Mary left home after her housemaid put apples on the table and John surreptitiously picked them up and ate them up.’ ← IHRC [* in Japanese]
 ‘As Mary left home after her housemaid put apples on the table, John surreptitiously picked them up and ate them up.’ ← Adverbial

We surmise that these writers reached their conclusion due to a failure to notice the possibility of an adverbial construal, a confusion plausibly attributable to the fact that the adverbial reading of this example is not strikingly different from the intended (but unavailable) IHRC reading (cf. the English translations provided for the two potential analyses).

The conclusion reached by Watanabe on the basis of the data in (28) was challenged by Kitagawa (2005) on the basis of the acceptable example in (32) (= his (14)).

- (32) [[kyoozyu-ga [[**sono daigakuinsei-ga** [e] kai-ta] ronbun]-o
 professor.NOM that grad.student.NOM write.PAST paper.ACC
 homete-i-ta]-no]-ga kondo zyosyu-de saiyoosare-ru koto-ni-nat-ta.
 praise.PROG.PAST.NML.NOM now instructor.as hire.PASS.PRES come.to.be.PAST
 ‘That graduate student of whom the professor praised the paper he had written has been appointed as an instructor.’

Observe, however, that much as in the case of (31), the constituent which Kitagawa views as an IHRC can also be analyzed as an adverbial, in which case it is translatable as in (33). Therefore, the acceptability of (32), just like the acceptability of (31), does not show that the IHRCs are insensitive to islands.

- (33) The professor having praised the paper that that graduate student had written, *he* (= the student) was appointed as an instructor.

Concerning Watanabe's example in (28b), Kitagawa does not contest its deviance, but suggests it may be due to a violation of Kuroda's Relevancy Condition (KRC). Kitagawa does not explain in any way why he thinks the KRC is violated in this example, and we will argue that this claim is unjustified, given the characterization of the KRC provided in (16) and the immediately ensuing paragraph.

We begin by looking at (28a), in which the IH is internal to a subordinate clause properly contained within the relative, and which, in view of its acceptability, needs to be viewed as satisfying the KRC. These two eventualities, together with a context-based eventive extension, in particular, a state in which the proposed hypothesis is present in states of awareness of interested linguists (and thus, of Mary), may be viewed as forming a single coherent super-eventuality. Moreover, the event of John's boasting about the importance of the proposed hypothesis integrates itself smoothly into the super-eventuality by increasing the relevance of the sub-eventuality described by the matrix, in particular, by implying that Mary 'punctured a hole' in the 'balloon' created by the boasting event.

Turning now to (28b), we submit that the KRC may be viewed as satisfied for similar reasons. Thus, the eventualities described by the more deeply embedded relative clause and by the IHRC's matrix may be viewed as forming a unified and coherent super-eventuality together with a context-based eventive extension, in particular, a state analogous to the one we proposed for (28a). Furthermore, the fact that John praised the proponent of the hypothesis implies that he viewed the hypothesis in a positive light, thereby creating a contrast between the implications of John's praise and the implications of Mary's critique. In sum, there seem to be good reasons for concluding that (28b) satisfies the KRC to essentially the same extent as (28a).

Earlier in this section, we proposed that (32) owes its acceptability to the fact that it may be interpreted as including an adverbial clause. We will now show by means of an example that differs from (32) in only inconsequential ways that if the adverbial construal can be excluded, sensitivity to the CNPC is revealed.

Consider examples (34) and (35). (34) is a modified version of (32), in which the demonstrative within the boldfaced nominal has been replaced by a numeral, thereby making it possible to construct a minimally different SHRC in (35). We provide for (34) only the translation corresponding to the full version, which involves an adverbial construal of the constituent within the most inclusive set of brackets, because we view the reduced version, which purports to assign IHRC status to that constituent, as ungrammatical. This view is supported by the deviance of (35), which disallows a (non-partitive) adverbial construal.

- (34) [[kyoozyu-ga [[huta-ri-no daigakuinsei-ga [e] kai-ta] ronbun]-o
 professor.NOM two.CL.GEN grad.student.NOM write.PAST paper.ACC
 homete-i-ta]-no]-ga (pro) kondo zyosyu-de saiyoosare-ru koto-ni-nat-ta.
 praise.PROG.PAST.NML.NOM now instructor.as hire.PASS.PRES come.to.be.PAST
 'The professor having praised the papers that two graduate students had written,
 they (= the students) were appointed as instructors.'

- (35) *[[kyoozyu-ga [[daigakuinsei-ga [e] kai-ta] ronbun]-o
 professor.NOM grad.student.NOM write.PAST paper.ACC
 homete-i-ta]-no]-ga huta-ri kondo zyosyu-de saiyou-sare-ru
 praise.PROG.PAST.NML.NOM two.CL now instructor.as hire.PASS.PRES
 koto-ni-nat-ta.
 come.to.be.PAST
 ‘The professor praised the papers that two graduate students had written,
 and they [= the students] were appointed as instructors.’
 [intended reading]

Taking stock of what has been done so far in this section, we have argued that earlier challenges to the thesis that Japanese IHRCs are island-sensitive are without force, and we conclude that the thesis at issue has been strengthened by the refutation of those challenges. If so, the position adopted in Grosu (2010), Grosu & Landman (2012), and Landman (2016) to the effect that the analysis of IHRCs should not rely on the anaphoric E-type strategy, as maintained, e.g., by Hoshi (1995), Shimoyama (1999; 2001) and Kim (2007), has also been strengthened, at least insofar as this concerns idiolects that allow IHs to enter unbounded dependencies, but not in violation of islands.

Having established that Japanese IHRCs are island-sensitive, in contrast to Japanese EHRCs, which, according to the literature, are island-insensitive (see, e.g., Kuno 1973), we need to assume some analysis that accounts for this state of affairs. Before examining some of the mechanisms that have been proposed in the literature, we wish to note that we have no ‘grandiose’ explanation for the fact that the IHRCs of Japanese are island-sensitive, nor for the fact that Japanese EHRCs are not. To be sure, current theory makes available a number of standard technical devices for dealing with such states of affairs, but the situation could also have been described if the facts just mentioned had been different, e.g., the converse of what they actually are. We do not feel embarrassed by the lack of a profound explanation for the island-sensitivity of Japanese IHRCs because this type of situation is by no means unique. For example, the EHRCs of various Indo-European languages differ strikingly from each other with respect to their island-sensitivity properties (e.g., those of Germanic Scandinavian languages, unlike those of English, can violate the CNPC; see, e.g., Erteschik-Shir 1973), and there is also considerable variation in island-sensitivity among the IHRCs of various languages (see, e.g., Grosu 2012).

A standard way of dealing with island-insensitivity in gapped EHRCs is to analyze the gap as a base-generated *pro*, and by assuming that no (cyclic) A-bar movement takes place (Inoue 1978). A standard way of dealing with island-sensitivity in the absence of overt elements that have plausibly undergone A-bar movement is to assume that this type of movement applies to a phonetically null syntactic operator. For relatives that exhibit an obvious gap, such as the *that*- and ‘contact’ relatives of English, the most straightforward account is to assume a null syntactic operator that originates in the position of the gap. For the IHRCs of Japanese, which exhibit no obvious gap, it is necessary to find a plausible position for the gap assumed to be created by the A-bar (cyclic) raising of a null operator.

Watanabe (1992) proposed that the gap at issue is found in the IH’s Specifier. This solution is undoubtedly maximally simple, but Grosu & Landman (2012) pointed out that it is not general enough, in particular, it is not applicable to change IHRCs, which have no syntactic IH and it creates problems when there are multiple IHs (on this last point, see Grosu & Landman 2012, sections 3 and 6). Grosu & Landman proposed an analysis that avoids these difficulties, and which has been further refined in Landman (2016). The general idea is that the IH is coupled with a ‘co-argument’, which plays, in the same set

of eventualities as the IH, the same thematic role, so that the two co-arguments define in effect a single thematic participant. This co-argument is contained in a PP adjoined to the IP *that most immediately contains the IH*, and constitutes the syntactic position from which the null operator is launched. Given the *local* relation between the two co-arguments, it follows that with respect to any island either both are internal to that island, or both external. Therefore, deviance is automatically predicted whenever the IH is internal to an island, because the movement of the null operator will necessarily cross that island's boundary.

For a detailed presentation of the analysis in question, see Landman (2016). See, in particular, section 4 of that paper for a detailed analysis of change relatives, which, informally put, establishes a co-argument relation between the null-operator trace within PP and the stuff that results from the process of change. This state of affairs predicts that change-of-state verbs should not be allowed within syntactic islands, a prediction confirmed in section 6 of this article (see example (62) and comments thereon).

4 The definite description status of Japanese IHRCs

In the preceding section, we noted two properties of IHRCs which we proposed to view as holding of Japanese IHRCs in general: island-sensitivity and definite-description status. In the preceding section, we offered a refutation of a challenge to the former property, and in this section, we will offer a refutation of a challenge to the generality of the latter property.

Kubota & Smith (2007) (henceforth: KS) bring up contrasting data like those in (36a-b), and propose on this basis that Japanese IHRCs may be either definite or indefinite, depending on the pragmatic context. We reproduce these data with the translations assigned to them by KS (boldfacing ours), but note that we disagree with their translations, for reasons we will clarify below.

- (36) a. (At the security check of an airport:)
 dono zyookyaku-mo [[poketto-ni **koin-ga** haittei-ta]-no]-o
 every passenger pocket.DAT coin.NOM in.be.PAST.NML.ACC
 toridasi-te torei-ni nose-ta.
 pick.up tray.DAT put.PAST
 'Every passenger picked up **the coins** that s(he) had in (his/her) pocket
 and put them on the tray.'
- b. (At the ticket gate of a train station:)
 dono zyookyaku-mo [[saihu-ni **kaisuuken-ga** haittei-ta]-no]-o
 every passenger wallet.DAT coupon.ticket.NOM in.be.PAST.NML.ACC
 toridasi-te kaisatu-ni ire-ta.
 pick.up ticket.checker.DAT put.PAST
 'Every passenger picked up **a coupon ticket** that s(he) had in (his/her)
 wallet and put it in the ticket checker.'

As a preamble to indicating the reasons for our disagreement, we will put these data in a form more compatible with KS's syntactic assumptions, providing modified translations that preserve KS's semantic assumptions. Syntactically, KS assume that the matrix clause in data like (36) include the element *pro*, but do not specify whether they view it as forming a constituent with the relative clause, in which case, from the perspective we have adopted in earlier sections, the resulting larger constituent would be an IHRC, or as not forming a constituent, in which case, from the same perspective, these data include an

adverbial clause. In any event, the bracketed constructions in (36) end in *no-o*, and thus can in principle be either IHRCs or adverbials, a potential ambiguity we will indicate by putting *pro* in brackets. The ‘re-formatted’ data are shown in (37). The English translations marked as including an IHRC concern the reduced versions, and those marked as including an adverbial concern the full versions.

- (37) a. (At the security check of an airport:)
 dono zyookyaku-mo [[poketto-ni **koin-ga** haittei-ta]-no]-o
 every passenger pocket.DAT coin.NOM in.be.PAST.NML.ACC
 (*pro*) toridasi-te torei-ni nose-ta.
 pick.up tray.DAT put.PAST
 ‘Every passenger had coins in his/her pocket, and (s)he picked *them*
 up and put them on the tray.’ ← IHRC
 ‘As every passenger had coins in his/her pocket, (s)he picked *them*
 up and put them on the tray.’ ← Adverbial
- b. (At the ticket gate of a train station:)
 dono zyookyaku-mo [[saihu-ni **kaisuuken-ga** haittei-ta]-no]-o
 every passenger wallet.DAT coupon.ticket.NOM in.be.PAST.NML.ACC
 (*pro*) toridasi-te kaisatu-ni ire-ta.
 pick.up ticket.checker.DAT put.PAST
 ‘Every passenger had **coupon tickets** in his/her wallet, and
 (s)he picked *one* up and put it in the ticket checker.’ ← IHRC
 ‘As every passenger had **coupon tickets** in his/her wallet,
 (s)he picked *one* up and put it in the ticket checker.’ ← Adverbial

KS justify their assumptions with the observation that the (a) subcase is most naturally understood as implicating that every passenger put on the tray all the coins there were in his/her pocket, while the (b) subcase is most naturally understood as implicating that every passenger put a single ticket in the checker, even if there were multiple tickets in the wallets of some or all of the passengers, an intuition with which we fully agree. According to them, the pragmatic assumptions associated with the two matrices, i.e., that a passenger is expected to put all the coins in his/her pocket on the tray, but only one ticket into the checker, coerce a definite construal in the (a) subcase and an indefinite one in the (b) subcase. We note that, in Japanese, both bare nominals and *pro* are unmarked for number, and can thus in principle be construed either as singular (as in (37b)) or as plural (as in (37a)). Furthermore, as KS point out, citing Tomioka (2003), *pro* in discourse may have not only a definite construal, but also an indefinite one, much like the English ‘pro-noun’ *one*, as illustrated in (38) (their (10b)).

- (38) Taro-wa Tookyoo-de UFO-o mi-ta.
 Taro.TOP Tokyo.LOC UFO.ACC see.PAST
 Hanako-wa Oosaka-de *pro* mi-ta.
 Hanako.TOP Osaka.LOC see.PAST
 ‘Taro saw an UFO in Tokyo. Hanako saw one in Osaka.’

Now, observe that *one* in (37b), unlike *pro/one* in (38), purports to have a partitive interpretation, specifically, the interpretation of *one of them*, with *them* anteceded by *coupon tickets*. Importantly, however, such a construal is not available to *pro* in discourse, as can be gathered from (39), where only the version with an overt numeral allows the partitive construal ‘one of them’, but the one with *pro* allows only a plural definite construal, which is pragmatically odd (hence, the ‘#’ mark).

- (39) Bill_i-wa poketto-ni kaisuuken-o ni-mai mottei-ta.
 Bill.TOP pocket.DAT coupon.ACC two.CL have.PAST
 Kare_i-wa [*pro* iti-mai]/#*pro* toridasi-te kaisatu-ni ire-ta.
 he.TOP one.CL/#them pick.up ticket.checker.DAT put.PAST
 ‘Bill_i had two coupon-tickets in his pocket. He_i picked one of them/#them up
 and put it/#them in the ticket checker.’

Correlatively, if *ni-mai* ‘two-CL’ is inserted after *kaisuuken-ga* in (37b), as shown in (40), the outcome is pragmatically odd in exactly the way in which (39) with *pro* is. This points to the conclusion that interpreting *pro* as ‘one’ in (37b) is incorrect.

- (40) (At the ticket gate of a train station:)
 dono zyookyaku-mo [[saihu-ni kaisuuken-ga ni-mai
 every passenger wallet.DAT coupon.ticket.NOM two.CL
 haittei-ta]-no]-o *pro* toridasi-te kaisatu-ni ire-ta.
 in.be.PAST.NML.ACC pick.up ticket.checker.DAT put.PAST
 ‘#As every passenger had two coupon tickets in his/her wallet,
 (s)he picked them up and put them in the ticket checker.’

If so, how should *pro* in (37b) be interpreted? As a preamble to answering this question, let us consider the data in (41a-b), which were discussed in considerable detail in the earlier literature, e.g., in Schubert & Pelletier (1989), Yoon (1994), Kanazawa (1994), Krifka (1996), Lappin & Francez (1994).

- (41) a. (At the security check of an airport)
 mosi *pro* **kagi-o** motte-i-ru nara, *pro* torei-no ue-ni *pro*
 if you key.ACC have.AUX.PRES you tray.GEN on it
 okanakutewanarimasen.
 put.have.to.PRES
 ‘If you have **a key** with you, you have to put *it* on the tray.’
- b. (A tenant who has lost his key says to a locksmith he has called for help)
 mosi *pro* **kagi-o** motte-i-ru nara, *pro* *pro* zyoomae-ni irete doa-o akete kudasai.
 if you key.ACC have.AUX.PRES you it lock.in put door.ACC open please
 ‘If you have **a key** with you, please put *it* in the lock and open the door.’

These data have pragmatically reasonable interpretations exactly parallel to those in (37), and so do their English translations. In both languages, (41a) is construed as saying that ‘you’ have to put on the tray any key you have with you, and (41b) is construed as inviting the locksmith to put a suitable key in the lock, no matter how many suitable keys he may happen to have with him. Focusing on the English translation of (41b), we note that its reading is achieved with a **definite singular** pronoun, which implies that the antecedent is not merely morphologically singular, but also **construed as singular** (the fact that the morphologically singular antecedent and pronoun in (41a) may denote a plurality of keys falls under the well-known phenomenon of ‘donkey anaphora’, which need not concern us here).

One way to think about (41b) is to assume that here the singular construal of the antecedent is licensed by a ‘functional’ interpretation, made possible by the ensuing context, so that *a key* is construed as ‘the (unique) relevant thing needed to open the door’. This functional construal makes it possible for the boldfaced expression to be understood as a **randomly** chosen key, the remaining (suitable) keys, if any, being contextually irrelevant.

This kind of interpretation partly resembles Kadmon’s (1990) discussion of Heim’s (1982) sage-plant example in (42), in a situation where sage-plants come in pots of six:

- (42) Everybody who bought **a sage-plant** bought five others along with **it**.

The antecedent fits a context where a *sage-plant-buying event* is relevant, and where it is contextually salient that the *choice* of sage-plant is arbitrary. If we assume that this allows a functional interpretation of the antecedent as a choice function, then one can assume that the uniqueness requirement of the definite pronoun is satisfied *relative to* the choice.

Kadmon and others have argued that there is great merit to this view. Hence these data do not contradict the status of the E-type pronoun as a definite.

In view of the fact that the Japanese example in (41b) is construed just like its English translation, we submit that the boldfaced antecedent and the italicized *pro* need to be construed as singular, the latter being definite, because if the antecedent were construed as plural and *pro* as singular and indefinite, the result would be predicted to be deviant for the reason that (40) is, namely, Japanese *pro*'s inability to have a partitive interpretation. We extend this conclusion to the full version of (37b), whose intended reading is adequately rendered in English with singular expressions, in particular, as: *As every passenger had a coupon ticket in his/her wallet, (s)he picked it up and put it in the ticket checker.*

What of the reduced version of (37b)? To exclude the adverbial interpretation, we construct an SHRC parallel to (40), as in (43).

- (43) (At the ticket gate of a train station:)
- #dono zyookyaku-mo [[saihu-ni **kaisuken-ga**
 every passenger wallet.DAT coupon.ticket.NOM
 haittei-ta]-no]-o **ni-mai** toridasi-te kaisatu-ni ire-ta.
 in.be.PAST.NML.ACC two.CL pick.up ticket.checker.DAT put.PAST
 ‘#Every passenger had **two coupon tickets** in his/her wallet, and
 (s)he picked **them** up and put them in the ticket checker.’

Since (43) is just as odd as (40), we conclude that in the IHRC variant of (37b), the IH is construed as singular, and the complex DP as definite. Ergo, KS's argumentation in support of an indefinite construal of IHRCs collapses, and we submit that, barring more convincing proof to the contrary, Japanese IHRCs may be viewed as being definite in general.

5 The infelicitous status of IHRCs with definite referential IHs

Shimoyama (2001: Ch. 3) addressed contrasts like the one between (44a)⁷ and (44b), and proposed to trace this effect to the fact that Acc-marked constructions, as in (44a), are possible adverbial clauses (as indicated in the English translation), while constructions like that in (44b), which is Gen-marked, are necessarily IHRCs, a view with which we agree. Her proposal is essentially that proper names are not possible IHs of IHRCs (for reasons we indicate below). Since she assumes nothing comparable with respect to adverbial constructions, the contrast in (44) is predicted.

- (44) a. Ken-wa [[Naomi-ga ofisu-ni **Lucky-o** tureteki-ta]-no]-o
 Ken.TOP Naomi.NOM office.DAT Lucky.ACC bring.PAST.NML.ACC
 tukamae-ta.
 catch.PAST
 ‘As Naomi brought **Lucky** to the office, Ken caught her.’
- b. ?*Ken-wa [[[Naomi-ga ofisu-ni **Lucky-o** tureteki-ta]-no]-no ke]-o
 Ken.TOP Naomi.NOM office.DAT Lucky.ACC bring.PAST.NML.GEN hair.ACC
 kat-ta.
 cut.PAST
 ‘Naomi brought **Lucky** to the office and Ken cut **her** hair.’

⁷ (44a) is an adaptation of an example brought up by Shimoyama, which we have modified in inconsequential ways in order to create a minimal pair with (44b).

We agree with her judgment, as well as with her proposal that proper names are not felicitous IHs. We do not, however, agree with the particular way in which she proposes to account for this effect.

As a preamble to making clear the nature of our disagreement, we remind the reader that she analyzes IHRCs by relying on an E-type anaphoric dependency, i.e., a dependency in which the antecedent is a quantified, non-referential expression. In a discourse with an E-type dependency, the anaphor is typically restricted by the intersection of properties internal to the antecedent with a property restricted from the remainder of the sentence that includes the antecedent. For example, *them* in (45a) denotes not merely three sheep, but three sheep that Bill owns. In contrast, in a discourse with a definite referential anaphor, the antecedent suffices to characterize the anaphor. For example, in (45b), *them* refers to *these three sheep*. To be sure, the sheep in question are owned by Bill, but this information is not necessary for characterizing the denotatum of the anaphor.

- (45) a. Bill owns **three sheep**, and Mary feeds **them**.
 b. Bill owns these three sheep, and Mary feeds **them**.

We note that Grosu & Landman's (2012) analysis of Japanese IHRCs, while significantly different from Shimoyama's in a number of ways, nonetheless makes a comparable assumption, namely, that the definiteness operator σ (which in Shimoyama's analysis is denoted by *no* and in Grosu & Landman's analysis is denoted by the null D which heads the complex DP) applies to a property formed by intersecting properties internal to the IH with the property restricted by the remainder of the relative clause.

Shimoyama's suggested explanation for the infelicity of proper names as IHs is that such IHs do not include a property. But this cannot be the source of the deviance, because replacing the proper name in (44) with a definite referential expression that does include a property results in exactly the same type of contrast, as shown in (46).

- (46) a. Ken-wa [[Naomi-ga ofisu-ni **sono haiiro-no neko-o**
 Ken.TOP Naomi.NOM office.DAT that grey cat.ACC
 tureteki-ta]-no]-o tukamae-ta.
 bring.PAST.NML.ACC catch.PAST
 'As Naomi brought **that gray cat** to the office, Ken caught her.'
- b. ?*Ken-wa [[[Naomi-ga ofisu-ni **sono haiiro-no neko-o**
 Ken.TOP Naomi.NOM office.DAT that grey cat.ACC
 tureteki-ta]-no]-no ke]-o kat-ta.
 bring.PAST.NML.GEN hair.ACC cut.PAST
 'Naomi brought **that gray cat** to the office and Ken cut **her** hair.'

We suggest that the infelicity of (44b) and (46b) is due to the definite referential status of IH, which makes the contribution of the property defined by the remainder of the relative clause vacuous. More explicitly, we suggest that something like (47) is responsible for the infelicity of the data at issue.

- (47) If the relative CP denotes the singleton set restricted by the interpretation of the IH (and hence, after σ applies, the complex DP has the same denotation as the internal head), the DP is not felicitous. Alternatively put, CP minus the internal head must contribute in a *non-vacuous way* to the building up of the DP interpretation.

Consider (44b). The full relative clause has the same denotation as the IH, namely, Lucky. What this means in effect is that the IH could have been used instead of the relative,

the remaining material within the latter having at most the status of a pre-suppositional check. Such a meaning can be straightforwardly expressed by means of an **appositive** EHRC, as in (48), but not by means of an IHRC.

- (48) Ken-wa [[[Naomi-ga ofisu-ni [e] tureteki-ta] Lucky]-no ke]-o kat-ta.
 Ken.TOP Naomi.NOM office.DAT bring.PAST Lucky.GEN hair.ACC cut.PAST
 ‘Ken cut the hair of Lucky, which Naomi had brought to the office.’

A reviewer asks why (44) cannot be used to express what (48) expresses. To the best of our knowledge, there are no known languages in which IHRCs are used as appositives on their IH. Rather, all languages known to us that have IHRCs of some kind convey appositions by means of an expression that follows or precedes the DP it ‘appositively modifies’, but not by one which contains the DP. Conceivably, this may be a matter of optimal language design (in the sense of Chomsky 2004), but we will not try to construct an argument here, and leave further investigation of this issue to later research. But whatever the ultimate reason, if IHRCs may not be appositive constructions in which the IH is the appositively modified element, the infelicity of data like (44b) and (46b) is expected, because, as we have argued, the relative clause minus the IH could at best have appositive force in (44b) and (46b).

The view just expressed was challenged by Kitagawa (2005: section 5.1), who suggested that (44b) is degraded due to a failure to satisfy the KRC. He offered no argumentation in support of this suggestion, but we find it completely implausible, in view of the fact that substituting an indefinite expression for the IH, as in (49), results in a felicitous sentence.

- (49) Ken-wa [[[Naomi-ga ofisu-ni **haiiro-no neko-o**
 Ken.TOP Naomi.NOM office.DAT grey cat.ACC
 tureteki-ta]-no]-no ke]-o kat-ta.
 bring.PAST.NML.GEN hair.ACC cut.PAST
 ‘Naomi brought **a gray cat** to the office and Ken cut **her** hair.’

To support his thesis, Kitagawa offers the examples in (50), which he views as including IHRCs. We reproduce his examples with the translations he provides, with which we disagree.

- (50) a. [soba-no nagaisu-no ue-de Lucky-ga nete-i-ta]-no]-ga
 nearby.GEN couch.GEN on Lucky.NOM sleep.PROG.PAST.NML.NOM
 ookina akubi-o si-ta.
 big yawn.ACC do.PAST
 ‘Lucky, who was sleeping on a nearby couch, made a big yawn.’
 b. [[[[[Lucky-ga atama dake dasite-i-ru]-no]-no usiro]-ni
 Lucky.NOM head only show.PROG.PRES.NML.GEN behind.at
 ututte-i-ru]-no]-wa kimi ka?
 appear.PRES.NML.TOP you Q
 ‘Is it you in the photo standing behind Lucky, who is sticking out his head?’

However, these data do not support Kitagawa’s thesis, because the relevant constituents in (50) are not necessarily IHRCs. The constituent in (50a) ends in *no-ga*, and is thus a possible adverbial, so that the felicity of (50) cannot be viewed as demonstrating a property of IHRCs. As for the constituent in (50b), we submit that the felicity of this example is due to the fact that the constituent ending in *no-no* is a possible gapless light-headed EHRC, in particular, one analogous to the full-headed ones in (7). This proposal is supported by

the fact that the leftmost token of *no* can be replaced with a full nominal, as in (51a). We provide in (51b) the counterpart of (51a) with a light head (and a comparable interpretation), indicating what we view as the correct translation of both subcases of (51), changing the glossing of *no* in (51b). We also modify Kitagawa's gloss of *usiro*, which we feel is wrong as it stands, and we add an optional copula in the matrix, for the sake of clarity.

- (51) a. [[[[[*Lucky-ga* atama dake dasite-i-ru] siin]-no usiro]-ni
 Lucky.NOM head only show.PROG.PRES scene.GEN back.at
 ututte-i-ru]-no]-wa kimi (desu) ka?
 appear.PRES.NML.TOP you (COP) Q
 'Is it you (in the photo) who appears (standing) at the back of the scene in which Lucky is sticking out only her head?'
- b. [[[[[*Lucky-ga* atama dake dasite-i-ru] no]-no usiro]-ni
 Lucky.NOM head only show.PROG one.GEN back.at
 ututte-i-ru]-no]-wa kimi (desu) ka?
 appear.PRES.NML.TOP you (COP) Q
 'Is it you (in the photo) who appears (standing) at the back of the scene in which Lucky is sticking out only her head?'

That (50b) has only the interpretation shown in (51b), and not the one provided by Kitagawa, is shown by the fact that if the bracketed constituent is placed in a context where it can only denote an entity, not a scene, the result is unacceptable, as in (52).

- (52) ?*[[[[*Lucky-ga* atama dake dasite-i-ru]-no]-no sippo]-o
 Lucky.NOM head only show.PROG.PRES.NML.GEN tail.ACC
 tukan-da no-wa kimi (desu) ka?
 grab.PAST NML.TOP you (COP) Q
 'Intended: Lucky was sticking out only her head, and is it you that grabbed her tail?'

To complete the picture, we note that (52) becomes acceptable on the intended reading if *Lucky-ga* is replaced with *neko-ga* 'a cat', and that if the same substitution is made in Kitagawa's example, two distinguishable readings emerge, as shown in (53).

- (53) [[[[[*neko-ga* atama dake dasite-i-ru]-no] -no usiro]-ni
 cat.NOM head only show.PROG.{one, NML}.GEN back.at
 ututte-i-ru]-no]-wa kimi (desu) ka?
 appear.PRES.NML.TOP YOU (COP) Q
 'Is it you (in the photo) who appears (standing) at the back of the scene in which Lucky is sticking out only her head?' ← **Gapless light-headed EHRC**
 'A cat is sticking out only her head, and is it you who appears (standing) at the back of that cat (in the photo)?' ← **IHRC**

Note that the two readings of (53) do not have identical truth conditions. On the IHRC reading, 'you' are behind the cat, but may be quite far front relative to the entire scene (which may include, e.g., various furniture items), while on the gapless EHRC reading, 'you' are at the back of the entire scene.

6 'Change' IHRCs are not gapless light-headed EHRCs

In section 2, we noted that gapless light-headed EHRCs can be distinguished from homophonous change IHRCs by adjectivally modifying the light head *no*. In this section, we present an argument based on certain restrictions on coordination in support of the

view that change IHRCs need to be recognized as existing independently of gapless light-headed EHRCs.

We begin by noting that a full EHRC and a gapless light-headed EHRC may conjoin with a single Case marker borne by the coordination, as in (54).

- (54) John-wa [[[Mary-ga teeburu-no ue-ni oite-oi-ta] ringo] to
 John.TOP Mary.NOM table.GEN on put.AUX.PAST apple and
 [[[Sally-ga orenzi-o sibotte-oi-ta] oisisoona] no]]-o itadai-ta.
 Sally.NOM orange.ACC squeeze.AUX.PAST delicious-looking one.ACC have.PAST
 ‘John had the apple that Mary put on the table and the delicious-looking orange
 juice such that Sally squeezed oranges (to obtain it).’

Next, we note two non-change IHRCs may also conjoin, as in (55) (= adapted from Hoshi 1995: 267).

- (55) a. Ken-wa [[[Risa-ga teeburu-no ue-ni **ringo-o** oite-oi-ta]-no] to
 Ken.TOP Risa.NOM table.GEN on apple.ACC put.AUX.PAST.NML and
 [[Erika-ga sara-no ue-ni **momo-o** oite-oi-ta]-no]-no kawa]-o
 Erika.NOM dish.GEN on peach.ACC put.AUX.PAST.NML.GEN skin.ACC
 muite tabe-ta.
 peel eat.PAST
 ‘Risa put an apple on the table and Erika put a peach on the dish, and Ken
 peeled their skins and ate them.’
- b. Ken-wa [[[Risa-ga teeburu-no ue-ni **ringo-o** oite-oi-ta]-no] to
 Ken.TOP Risa.NOM table.GEN on apple.ACC put.AUX.PAST.NML and
 [[Erika-ga sara-no ue-ni **momo-o** oite-oi-ta]-no]]-o **ni-ko**
 Erika.NOM dish.GEN on peach.ACC put.AUX.PAST.NML.ACC two.CL
 totte tabe-ta.
 pick.up eat.PAST
 ‘Risa put an apple on the table and Erika put a peach on the dish, and Ken
 picked up and ate the two.’

In (55a), the conjuncts are incontrovertible IHRCs, for the following reasons: The Genitive Case of the coordination excludes an adverbial interpretation; gapless light-headed IHRC status is excluded, because the boldfaced nominals restrict the denotation of the corresponding conjuncts, so that their interpretation does not rely on an interpretation of the presumed pronominal *no* by resorting to eventive extension; finally, complement status is excluded by the fact that it would make no sense. The point made by (55a) is strengthened by (55b), where the coordination has SHRC status, with the boldfaced numeral expressing the cardinality of the sum of fruits denoted by the individual conjuncts.

The next step is to note that a non-change IHRC may conjoin neither with a full EHRC, nor with a gapless light-headed EHRC, as shown in (56) and (57) respectively. The rightmost conjunct in (56) and the leftmost conjunct in (57) are not possible gapless light-headed EHRCs, because they are construed as restricted by the explicit boldfaced nominals they include, just like the conjuncts in (55a); neither can they be adverbials or complements, because their co-conjuncts are incontrovertible entity-denoting DPs, and the coordination would make no sense. Furthermore, in the full version of (57), the use of a SHRC also excludes adverbial and complement construals.

- (56) *keesatu-wa [[[[e] nigete-i-ta] otoko]] to [[[**doroboo-ga san-nin**
 police.TOP run.away.PROG.PAST man and thief.NOM three.CL
 ie-no usiro-ni kakurete-i-ta]-no]]-o tukamae-ta.
 house.GEN back.at hide.PROG.PAST.NML.ACC catch.PAST
 ‘The police caught the man who was running away, and three thieves were hiding
 behind the house and the police caught them.’
- (57) *Bill-wa [[[John-ga **wain-o** dasitekure-ta]-no] to
 Bill.TOP John.NOM wine.ACC serve.PAST.NML and
 [[[Mary-ga ringo-o sibottekure-ta] oisisoona] no]]-o
 Mary.NOM apple.ACC squeeze.PAST delicious-looking one.ACC
 (san-bai) non-da.
 three.CL drink.PAST
 ‘John served wine and Mary squeezed apples, and Bill drank {it, three glasses of them
 altogether} (= the wine and apple juice).’

Finally, consider (58), where the leftmost conjunct can only be an IHRC, because the boldfaced nominal within it restricts the denotation of the entire conjunct, so that this denotation is not achieved by pragmatic eventive extension (furthermore, adverbial and complement construals are excluded by the use of a SHRC in the full version, just as in (57); moreover, a complement construal would make no sense in relation to *nom-u* ‘drink’, which selects a liquid-denoting Theme). The rightmost conjunct could in principle be either a change IHRC or a gapless light-headed EHRC, because it contains no nominal that can plausibly restrict the denotation of the entire conjunct, so that this denotation can only be achieved by eventive extension, in particular, by means of a change-of-state verb in the latter case. The felicity of (58) points to the conclusion that the second conjunct can only be a change IHRC, because if it were a gapless light-headed EHRC, this example should be infelicitous, just like (57).

- (58) Bill-wa [[[John-ga **wain-o** dasitekure-ta]-no] to
 Bill.TOP John.NOM wine.ACC serve.PAST.NML and
 [[Mary-ga ringo-o sibottekure-ta]-no]]-o (san-bai) non-da.
 Mary.NOM apple.ACC squeeze.PAST.NML.ACC three.CL drink.PAST
 ‘John served wine and Mary squeezed apples, and Bill drank {it, three glasses of them
 altogether} (= the wine and apple juice).’

The upshot of the above is that change IHRCs need to be viewed as existing independently of homophonous gapless light-headed EHRCs.

For the sake of completeness, we note two predictions made by the conclusion we have just reached. On the one hand, on the assumption that gapless (light-headed) EHRCs, just like gapped EHRCs, do not involve A-bar raising of a null syntactic operator, we expect a change-of-state verb to be able to occur within an island internal to the relative clause, so long as pragmatic coherence can be achieved. On the other hand, we expect change IHRCs to disallow a comparable configuration, on the assumption that they involve null operator raising, just like non-change IHRCs. These predictions are fulfilled reasonably well.

In (59) and (60), we have incontrovertible gapless (light-headed) EHRCs, due to the boldfaced adjective that modifies the boldfaced EH. The relative clause includes a ‘smaller’ EHRC whose own relative clause has a change-of-state verb. The EH is a full nominal in (59) and a light head in (60). Both examples are acceptable, with (60) slightly degraded relative to (59), presumably because the inexplicitness of the nominal part of the EH makes eventive extension harder.

- (59) Mary-wa [[[Bill-ga [[sinsenna gureepu-o sibot-ta] kokku]-ni
 Mary.TOP Bill.NOM fresh grapes.ACC squeeze.PAST cook.DAT
 tyuui-o muke-sase-ta] **oisisoona gureepu zyuusu**]-no azi]-o
 attention.ACC turn.CAUS.PAST delicious-looking grape juice.GEN taste.ACC
 totemo yorokonde tanosin-da.
 with. great.pleasure enjoy.PAST
 ‘Bill drew Mary’s attention to a/the cook who squeezed some fresh
 grapes, and she greatly enjoyed the taste of the resulting delicious
 grape juice.’

- (60) ?Mary-wa [[[Bill-ga [[sinsenna gureepu-o sibot-ta] kokku]-ni
 Mary.TOP Bill.NOM fresh grapes.ACC squeeze.PAST COOK.DAT
 tyuui-o muke-sase-ta] **oisisoona no**]-no azi]-o
 attention.ACC turn.CAUS.PAST delicious-looking one.GEN taste.ACC
 totemo yorokonde tanosin-da.
 with. great.pleasure enjoy.PAST
 ‘Bill drew Mary’s attention to a/the cook who squeezed some fresh
 grapes, and she greatly enjoyed the taste of the delicious one [= the
 resulting grape juice].’

We next consider (61), which is obtained from (60) by suppressing the boldfaced adjective. This example is potentially ambiguous between an IHRC and a gapless light-headed EHRC construal (note that adverbial construal is excluded by the use of the Genitive Case frame and complement construal would make no sense in connection with the head noun *azi* ‘taste’). The fact that it is quite bad, as indicated, implies the following: Although a gapless light-headed EHRC construal is potentially available in (61), due to the lack of an adjective modifying the EH *no* and its complete inexplicitness, coupled with the deep embedding of the change-of-state verb, accommodation with eventive extension is too much of an uphill task. Under a change IHRC construal, unacceptability is attributable to an island violation. This conclusion is confirmed by the deviance of (62), where the second conjunct is an incontrovertible change IHRC for the same reason that the second conjunct in (58) is.

- (61) *Mary-wa [[[Bill-ga [[sinsenna gureepu-o sibot-ta] kokku]-ni
 Mary.TOP Bill.NOM fresh grapes.ACC squeeze.PAST cook.DAT
 tyuui-o muke-sase-ta]-no]-no azi]-o
 attention.ACC turn.CAUS.PAST.NML.GEN taste.ACC
 totemo yorokonde tanosin-da.
 with .great.pleasure enjoy.PAST
 ‘Bill drew Mary’s attention to a/the cook who squeezed some fresh
 grapes, and she greatly enjoyed the taste of it [= the resulting grape juice].’
- (62) *Mary-wa [[[John-ga **hambaagaa**-o tyuumonsitekure-ta]-no] to
 Mary.TOP John.NOM hamburger.ACC order.PAST.NML and
 [[Bill-ga [[sinsenna gureepu-o sibot-ta] kokku]-ni
 Bill.NOM fresh grapes.ACC squeeze.PAST cook.DAT
 tyuui-o muke-sase-ta]-no]-no azi]-o
 attention.ACC turn.CAUS.PAST.NML.GEN taste.ACC
 totemo yorokonde tanosin-da.
 with .great.pleasure enjoy.PAST
 ‘John ordered a hamburger (for Mary) and Bill drew Mary’s attention
 to a/the cook who squeezed some fresh grapes, and she greatly enjoyed
 the tastes of them [= the hamburger and the resulting grape juice].’

7 Summary of results, and suggestions for further research

This paper started from the observation, made in earlier literature, that constructions consisting of a sentence followed by a *no* element may be either an IHRC, an adverbial clause, a complement clause, or a gapless light-headed EHRC. In section 2, we brought up a variety of tests, some old and some new, for constructing unambiguous exemplars of each kind, and for ensuring that a construction of a particular kind is not misanalyzed as being of some other type, a danger that in principle exists in cases of homophony. In the ensuing sections of the paper, we refuted a variety of challenges to the theses [i] that IHRCs are island-sensitive, [ii] that they are invariably definite descriptions, [iii] that they may not have a definite referential IH, and [iv] that change IHRCs exist. In so doing, we pointed out that those challenges failed to make their point mostly because they mistook one kind of construction with another, with which it happened to be homophonous.

We would like to note, with a view to providing useful ‘food for thought’ for future researchers, that this paper has focused exclusively on IHRCs and potentially homophonous constructions *in Japanese*. The descriptive and analytical proposals made in this paper do not automatically extend to the IHRCs of other languages, which may be quite different from those of Japanese insofar as syntax, semantics, and/or pragmatics are concerned, a point noted in some earlier literature (see, e.g., Grosu 2012 and references therein). At the same time, there is at least one language, Korean, for which striking similarities insofar as IHRCs are concerned have been noted in earlier literature, and for which the proposals made in this paper may well be appropriate, in part or in whole.

In an attempt to shed more light on this matter, we conducted a pilot study with two native consultants, in which we examined Korean data comparable to those brought up and discussed in this paper. The consultants were selected out of a larger pool, which exhibited cross-idiolectal variation of the kind found in Japanese, some speakers rejecting IHRCs in general, other accepting only data with simplex relatives, and others accepting data with complex relatives and deeply embedded IHs as well. The two consultants belong to the last category, and were selected precisely for this reason, since, as pointed out in section 1, such idiolects are arguably maximally revealing. The data we obtained led us to (still tentative) conclusions that are remarkably parallel to those we reached on the basis of Japanese data. Thus, our study suggests that Korean has genuine IHRCs that exhibit all the properties [i]-[iv], as well as homophonous adverbials, complements, and gapless light-headed EHRCs of the kind found in Japanese. We do not provide the data here, in order not to extend this paper beyond reasonable limits, but will post them on our websites as soon as this paper is published.

Abbreviations

ACC = accusative case, AUX = auxiliary, CAUS = causative element, CL = classifier, COMP = complementizer, COP = copula, DAT = dative case, GEN = genitive case, HON = honorific element, LOC = locative element, NEG = negative element, NML = nominalizer, NOM = nominative case, PAST = past tense, POL = polite element, PRES = present tense, PROG = progressive element, Q = question particle, TOP = topic marker

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Competing interests

The authors declare that they have no competing interests.

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