Bare Resumptives*

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1   Introduction—A Morphosyntactic Generalization?

McCloskey, in his Syncom article on resumption, points out the following:

> A fundamental question, which has not often been explicitly addressed, but
> which lies behind much of the discussion is why resumptive elements have
> the form that they do. That is, resumptive pronouns simply are (formally)
> pronouns. I know of no report of a language that uses a morphologically or
> lexically distinct series of pronouns in the resumptive function. If we take
> this observation to be revealing, there can be no syntactic feature which dis-
> tinguishes resumptive pronouns from ordinary pronouns, and any appeal to
> such a feature must be construed as, at best, an indication of the limits of
> understanding.   McCloskey (2006)

In this paper, I want to show that McCloskey's generalization is not strictly accurate,
at least when taken in a very strong form. The claim I wish to make is that resumptive pro-
nouns can, sometimes, appear stripped of their ϕ-feature specification, something which is
not true of contextually determined (referential) pronouns, which need a ϕ-specification.
So the core observation is the following:

(1)   Observation A: ResPro = CxtPro − ϕ

where ResPro stands for resumptive pronoun and CxtPro for contextually determined (i.e. referential) pronoun. Observation A is existential in import: it means that some pronouns in a resumptive function have a form which is different than that they would bear in a non-resumptive function, and moreover the form they have is the same as the default. I call resumptive pronouns with this property **bare resumptives**.

Observation A is about morphological form. However, it also connects with semantic interpretation in that, since a ResPro is bound by an operator and gets its interpretation via that operator, the ϕ-specification of such a ResPro is semantically somewhat redundant.

This in turn connects with some recent work in semantics, where it has been noted that bound pronouns (BndPro) can, and sometimes must, be interpreted as being stripped of their ϕ-specification (see, especially, Heim 2008 and Kratzer 2006 and Stechow 2003). I show in section 4.2 that, in some languages, BndPro may also lack a morphological specification of ϕ-features, giving us **Bare Bound Pronouns**. Thus:

(2)   Observation B: BndPro = CxtPro − ϕ

Of course, the similarities between A and B should not entirely surprise us, since resumptive pronouns and bound pronouns differ from contextually determined pronouns precisely in that their interpretation is determined by some operator, rather than by context.

The basic story I'd like to tell is that, at heart, all pronouns need to be bound: there are no variable assignment functions which can apply freely to give an interpretation to a pronoun. The inner core of a pronoun is a variable, and this variable needs an interpretation. It gets such an interpretation either by being bound within its own DP, by a definiteness operator, or by being bound outside its DP by some other operator. I call the inner core of a pronoun ID, following Adger and Ramchand 2005, and take it to be the lowest element in the extended projection that makes up the pronoun. A CxtPro is then just:

(3) $[_{DP}$ D[def] $[_{\phi P}$ ϕ ID $]]$

The [def] feature in (3) is interpreted as an ι-operator, which binds ID. Resumptive pronouns which are specified with ϕ-features have exactly the same structure, and are

essentially definite descriptions (see Freidin and Vergneaud 2001, Elbourne 2005, Malkawi and Guilliot to appear, Rouveret 2005). I will argue that to Merge D[def], ϕ must have been already Merged, as D[def] semantically requires a set of individuals as its argument, from which it returns the relevant definite description. Since ID is a variable of type e, D[def] cannot directly combine with it. It follows that for the definite description semantics, ϕ-features must be present on the pronoun, and I show how this leads to some correct predictions about locality.

However, bare resumptives and bare bound pronouns are syntactically indefinites. They lack a D-layer bearing a [def] feature and may have either of the structures in (4):

(4)   a.   ID
       b. $[_{\phi P}\ \phi\ \text{ID}\ ]$

In either case, ID must be bound before it is interpreted. On the assumption that interpretation takes place at the phase level, this means that ID must be locally bound and I will argue, following Adger and Ramchand (2005), that it is bound by the local phase head. The result is that bare resumptives must be local to their binders, while non-bare resumptives, being definite descriptions, are subject to no such locality constraint. The binding properties of the latter are negotiated semantically, rather than syntactically.

2   Bare resumptives

In Adger and Ramchand 2005, we showed that, for colloquial Skye Gaelic, A-bar dependencies terminating in prepositional phrases resulted in a default masculine singular form of the preposition, irrespective of the ϕ-specification of the A-bar binder.

The basic paradigm of prepositional agreement in Gaelic is given in (5):

(5)

	singular	plural
1st	rium/annam	rinn/annainn
2nd	riud/annad	riubh/annaibh
3fem	rithe/innte	riutha/annta
3masc	ris/ann	riutha/annta
DP[−def]	ri/ann an	ri/ann an
DP[+def]	ris/anns	ris/anns

As well as inflecting for ϕ-features (Gaelic has grammatical gender, person and number), Gaelic prepositions inflect for the definiteness of their complement. However, if the complement of the preposition is pronominal, it is obligatorily null:

(6)   Dh'èist   mi ris   a'   caileag
      Listen-PAST I   to-DEF the-FS girl
      'I listened to the girl.

(7)   Dh'èist   mi rithe   (*i)
      Listen-PAST I   to-3FS (*her)
      'I listened to her.

When a preposition is stranded under apparent extraction, we find the masculine form, even when the extractee is grammatically feminine.

(8)   Cò   a' chaileag a   bha   thu a' bruidhinn *rithe/ris/*ri?
      Which the girl   C-REL be-PAST you at speaking   with-3SF/with-3MS/*with
      'Which girl were you talking to?'

We see the same effect with number:

(9)   Cò   na caileagan a   bha   thu a' bruidhinn *riutha/ris/*ri?
      Which the girls   C-REL be-PAST you at speaking   with-3PL/with-3MS/*with
      'Which girls were you talking to?'

and with person:

(10)   Is   mise   a   bha thu a' bruidhinn *rium/ris/*ri
       Cop I-emph that was you asp talking   to-me/to-him/to
       'It's me that you were talking to.'

One might think that the form seen in these cases is the definite form, and that this is evidence for a trace conversion rule, following Fox 2002, which turns a trace into a definite.

However, the following examples show that this is not the case, since with the preposition *ann an*, the third masculine singular and definite forms are distinct.

(11) Chuir   thu am peann anns   a' bhocsa
      Put-PAST you the pen   in-DEF the box-DAT
      'You put the pen in the box.'

(12) Dè   am bocsa a   chuir   thu am peann ann/*anns
      which the box   C-REL put-PAST you the pen   in-3RD SG/*in-DEF
      'Which box did you put the pen in?'

Although we showed this effect only for prepositions in Adger and Ramchand 2005, it is more general and can also been seen when the object of a non-finite verb form (traditionally called the 'verbal noun') is extracted.

(13) Sin a' chaileag. Bha   mi ga   pògadh an-dè
      That the girl.   be-PAST I   at-her kissing yesterday
      'That's the girl. I was kissing her yesterday.'

The marker of gender here is lack of lenition on the verb form (*pògadh*, not *phògadh*, which would be masculine). Under extraction, the verb-form is lenited:

(14) Cò   a' chaileag a   bha   thu ga   phògadh?
      Which the girl   C-REL be-PAST you at-his kissing
      'Which girl were you kissing?'

Once again we see the same effect for number:

(15) Cò   na caileagan a   bha   thu ga   phògadh
      Which the girls   C-REL be-PAST you at-his kissing
      'Which girls were you kissing?'

And person:

(16) Is mise a   bha thu *gam/ga   phògadh
      Cop I-emph that was you at-my/at-his kissing
      'It's me that you were kissing.'

Adger and Ramchand (2005) argued that these cases of default agreement in extraction contexts had to be treated as a null default resumptive rather than as agreement with a (moved) copy. This was on the basis of a lack of reconstruction effects, a lack of case

identity effects, a lack of parasitic gap licensing, the impossibility of multiple-wh questions, etc. I'll simply assume that this analysis is correct here, rather than repeating the arguments. The representation of the preposition with an apparently extracted argument is then roughly something like (17).

(17)   P$[-\phi]$ pro$[-\phi]$

This is our first case of a bare resumptive.

The phenomenon of bare resumptives also occurs with overt pronominal forms. Adger and Ramchand (2005) give examples from São Tomense creole (Hagemeijer 2000)

(18)   Inen faka se   ku   n   va mpon ku-e/   *ku-inen
        3PL knife DEM REL 1SG cut bread with-3SG/ with-3PL
        'These knives that I cut the bread with.'

Other creoles show similar effects, as can be seen from the following Papiamentu examples (Nylander 1978):

(19)   kwa   homber-nan bo ta   hunga ku-ne
        which man-pl   you prog play   with-him
        'Which men are you playing with?'

(20)   *kwa homber-nan bo ta   hunga ku-nan
        which man-pl   you prog play   with-them
        'Which men are you playing with?'

Yoruba shows bare resumptives in subject positions, however, given the odd behaviour of subject extractions in general, one might take this to be a *que/qui* type effect, however that is to be explained:

(21)   àwọn ọkùnrin l' o gbé e wá
        PL   man   CP he took it came
        'It was the men that brought it.'

(21) shows a plural focused subject with a singular pronominal form marking the putative extraction site. (23) shows the same effect for a first person pronoun which has undergone clefting:

(22)   èmi ra   ewúrẹ́
        I   bought goat

'I bought a goat.'

(23) èmi l' o ra   ewúrẹ́
      I   CP he bought goat
      'It was me that bought a goat.'

However, perhaps the most striking cases come from Edo, a Nigerian Kwa language (and the substrate for São Tomense creole). In Edo, extraction from subject positions is marked by a bare resumptive, as in Yoruba, but we also find bare resumptives in a whole range of other constructions. Beermann, Hellan, and Ogie 2001 report bare resumptives (which they call 'plugs') appearing in double object constructions, certain possessor constructions, certain complex-verb type constructions and certain complex prepositions. In each case, even though the putative extractee is plural, the element that appears in the 'base' position is the third singular pronoun *èré* rather than the plural pronoun *íràn*.

We can see this in the examples below. The first pair is a double object construction; if we form a wh-question on the plural direct or indirect object, the resumptive pronoun is always bare:[1]

(24) Dè   èmwí èhá nè   Òtà mié Àmè (è)ré
      INTROG thing three COMPL Ota receive Ame 3SG
      'What three things did Ota receive from Ame?'

(25) Dè   èmwá   èhá nè Òtà mié ònrèn èbé
      INTROG Person.PL three Ota receive 3SG book
      'Who are the three persons that Ota received a book from?'

The 'plug' behaves just like a normal pronoun in its case form (as can be seen in (25), where it takes an accusative form).

The same facts hold for possessor extraction. (26) shows that the CxtPro form with a plural referent is *íràn*:

(26) a. Ímótò gbé   èwé (óghé) Òtà vbé Àmè
          car   kill.PST.H goat POSS Ota and Ame
          'A car killed Ota and Ame's goat.'

      b. ímótò gbé   èwé (óghé) íràn
          car   kill.PST.H goat POSS 3PL
          'A car killed their goat.'

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[1] I'd like to thank Dorothee Beermann and Ota Ogie for taking the trouble to expand on the data they presented in Beermann, Hellan, and Ogie 2001, allowing me to present the examples here.

However, if the possessor is focus-moved, the resumptive is the singular form *èré*:

(27)　Òtà vbé Àmè̱ ò̱ré ímó̱tò gbé　　èwé (è)ré
　　　Ota and Ame FOC car　　kill.PST.H goat 3SG
　　　'It happened to Ota and Ame that a car killed their goat.'

(28)　Íràn ò̱ré ímó̱tò gbé　　èwé (è)ré
　　　3PL FOC car　　kill.PST.H goat 3SG
　　　'It happened to them that a car killed their goat.'

In the final case, the plural pronominal object of a certain kind of verb particle construction is extracted and a singular pronoun marks the extraction site:

(29)　Òzó mú` íràn ègbé
　　　Ozo V1.PAST them body
　　　'Ozo dressed them up.'

(30)　íràn ò̱ré　　　　Òzó mú` èré èg̱bé
　　　Them FOCMARKER Ozo V.PAST him body
　　　'It is them that Ota dressed up.'

Edo shows bare resumptives very clearly: wh or focus moved plural NPs leave behind resumptives which are unmarked for plurality. Generalization A, then, seems to hold for at least some languages.

3　Locality Effects

The next generalization I want to discuss is a hypothesis, as it holds true of all the languages I know of which have bare resumptive structures, but to establish it properly would require much more empirical work. The generalization is that bare resumptives must be local to their binder:

(31)　Generalization C: *Binder ... [$_{Island}$ ... ResPro$[-\phi]$ ...]

This is clearly true in Gaelic for both prepositional stranding and 'extraction' from verbal-noun complement position:

(32)　Cò　　na caileagan as　　　toil leat　　an duine a　bha　a'
　　　Which the girls　　　C-REL-Cop liking with-you the man　that be-PAST at
　　　bruidhinn ??riutha/*ris/*ri?
　　　speaking　??with-3PL/*with-3MS/*with

'Which girl do you like the guy that was talking to those girls?'

(33) Cò   na caileagan as   toil leat   a' bhanaltram a   bha
      Which the girls   C-REL-Cop liking with-you the nurse   that be-PAST
      ??gan/*ga   phògadh?
      at-their/at-his kissing
      'Which girl did you like the nurse that was kissing those girls?'

In these examples, it is just possible to use a fully agreeing form, the form that would appear were the argument a referential pronoun, however speakers are uncomfortable with this and I take it to be akin to the use of an 'intrusive' resumptive in English (Sells 1984).

The generalization also holds for São Tomense creole (Hagemeijer 2000):

(34) Inen migu se   ku bo che di fesa se   fla ku-inen/ *ku-e   sa
      3PL friends DEM REL 2SG leave of party without talk with-3PL with-3SG are
      n'ai.
      in-here
      '*The friends that you left the party without talking to are here.'

In São Tomense the fully agreeing form is well-formed in an island according to Hagemeijer, while the bare resumptive, usually the only choice, is ungrammatical. I leave aside here the question of whether the contrast in judgments between the Gaelic and São Tomense sentences with a full resumptive is to be dealt with grammatically or extra-grammatically.

That the binder has to be very local to the bare resumptive is very clear in these languages, as they have an obligatory marker of the dependency on every intermediate CP in the dependency. This is well known for Gaelic, where we see the embedding complementizer *gun* in (35) being replaced with a relative complementizer in (36):

(35) Thuirt mi gun robh mi a'   bruidhinn ri   caileag
      Said   I that was I talking to   girl
      'I said I was talking to a girl.'

(36) Cò   na caileagan a   thuirt thu a   bha   thu a' bruidhinn
      Which the girls   C-REL said   you that-REL be-PAST you at speaking
      *riutha/ris/*ri?
      *with-3PL/with-3MS/*with
      'Which girls did you say you were talking to?'

The same effect is seen in São Tomense (see Hagemeijer (2000) for more examples and discussion).

(37) Bo ka kunda kuma Zon konta soya se ku gosto?
2SG ASP think that Zon tell   story DEM with joy
'Do you think Zon told the story with joy?'

(38) Ke   nge ku   bo ka kunda ku   konta soya se   ku gosto?
Which person C-[REL] 2SG ASP think C-[REL] tell   story DEM with joy
'Who do you think told the story with joy?'

We find the same sensitivity to island effects in Edo: a bare resumptive is impossible in an island.

(39) *Àmè (òré)   ì rèn   òvbiálèkè nè ó   hòémwè
Ame FocMarker I know.PRES lady   REL RelPlug like.PRES.TRANS
ònrèn
him
'*It is Ame I know the lady who likes him.'

Interestingly, things seem to work differently for resumptives with ϕ-features. For such non-bare resumptives, languages seem to vary in whether they allow binding across an island or not. That is, we have Generalization C' to complement Generalization C:

(40)   Generalization C': %Binder ... [$_{Island}$ ... ResPro$[+\phi]$ ...]

It is well known that in Irish (McCloskey 1990) it is possible to bind a resumptive in an island:

(41) An scríbhneoir aN   molann na mic léinn é
the writer   C-RES praised the students him
'The writer that the students praised.'

(42) Sin teanga   aN mbeadh meas   agam ar duine ar bith aL tá ábalta í
that language aN would-be respect at-me on person at all   aL is able   it-FEM
a labhairt
to speak
'??That's a language that I would respect anyone who could speak it'

The same facts hold for Hebrew (Borer 1984):

(43) ra?iti ?et ha-yeled she/?asher rina ?ohevet ?oto
saw-I acc the-boy that   rina loves   acc-3sm
'I saw the boy that Rina loves'

(44) ra?iti ?et ha-yeled she-/asher Dalya makira ?et ha-?isha   she-?ohevet ?oto
      saw-I acc the-boy that   Dalya knows acc the-woman that-loves   him.
      'I saw the boy that Dalya knows the woman that loves that boy.'

Schematically this gives us (45) as a possible structure:

(45) Binder ... [$_{\text{Island}}$ ... ResPro[$+\phi$] ...]

However, this doesn't seem to be true for all languages which have fully-phi-featured resumptives. For example, Tallerman (1983) shows that, in Welsh resumptives are ruled out in relative clause islands ((46)), but fine in wh-islands ((47)):

(46) ??dyma'r dyn y   cusanaist ti 'r ddynes a   siaradodd amdano
      here-the man that kissed   you the woman that talked   about-3MS
      'Here's the man that you kissed the woman that talked about him.'

(47) eiriau na   wyr   Mair ddim sut i'w   defnyddio
      words Neg-Rel knows Mair Neg   how to-them define
      'words which Mair doesn't know how to define (them)'

Overall, then, UG seems to allow phi-featured resumptives to be island-sensitive or not, unlike bare resumptives, establishing Generalizations C and C':

(48) a. Generalization C: *Binder ... [$_{\text{Island}}$ ... ResPro[$-\phi$] ...]
      b. Generalization C': %Binder ... [$_{\text{Island}}$ ... ResPro[$+\phi$] ...]

4 Bound Pronouns and Fake Indexicals

We established above that in at least some languages resumptive pronouns could be bare, that is devoid of any ϕ-feature specification. Resumptive pronouns are a variety of bound pronouns, in that both resumptive and bound pronouns' interpretations are controlled by some semantic operator. We might expect then, that a variant of our Generalization A might hold, where some languages have ϕ-featureless bound pronouns.

4.1 Fake Indexicals

This expectation, of course, connects with recent work on the semantic behaviour of so-callled 'fake indexicals'. The crucial examples were noted by Partee some time ago (Partee

1989, footnote 3), but their relevance for the nature of the syntax/semantic interface has been highlighted recently by Heim (Heim 2008), Kratzer (Kratzer 2006, Stechow 2003) and others. A fake indexical reading of a bound pronoun is essentially one that ignores the semantic import of the ϕ-features of the pronoun. Take Kratzer's example (modelled on Partee's):

(49)   I'm the only one around here who can take care of my children.

The relevant reading here is that no one else can take care of their own children. That is, for the relative clause, we have a representation something like (50):

(50) λx x takes care of x's children

The problem, as Kratzer points out, is how to ignore the semantics of the ϕ features on *my* in this example, while not ignoring their semantics on a referential reading. That is, we also need to allow the following semantics for the relevant part of (49):

(51) λx x takes care of my (= 'the speaker's') children

Since first and second person ϕ features pick out particular referents in any utterance, it's not obvious how to give a unified analysis which will allow these features to be either interpreted or not.

The consensus in the current literature is that at least some bound pronouns are semantically ϕ-featureless. Kratzer argues that these pronouns are born 'bare' and get their phi-feature specification via syntactic processes of agreement. If this consensus is correct, then we have an observation that connects to our observation about resumptives: bound pronouns can lack a ϕ-specification. The interpretative absence of ϕ correlates with its morphological absence.

4.2   Bare Bound Pronouns

Interesting morpho-syntactic evidence for the 'bareness' of bound pronouns is given from Malagasy by Zribi-Hertz and Mbolatianavalona (1999). Malagasy bound pronouns can be singular even when their antecedent is plural. (52) shows a simple case of a higher antecedent with the pronoun in the lower clause:

(52) Mieritreritra [io   ankizy io   ] fa faly   izy
      prs-think   [dm-sg child dm-sg] that pleased 3(sg)-nom
      'That child thinks that he/she is pleased.'

When the antecedent is plural, the pronoun is still singular (the alternation between *izy* and *azy* is one of case):

(53) Mieritreritra [ireo   ankizy ireo   ] fa faly   izy
      prs-think   [dm-pl child dm-pl] that pleased 3(sg)-nom
      'Those children think that they are pleased.'

(54) Mieritreritra [ireo   ankizy ireo   ] fa miresaka   azy   aho
      prs-think   [dm-pl child dm-pl] that prs-discuss 3(sg)-nom 1sg-nom
      'Those children think that I am discussing them.'

Zribi-Hertz and Mbolatianavalona (1999) characterise the data as follows:

> Our own survey of data leads us to the conclusion that simplex *izy/azy* may
> be read as plural if, and only if, it has a plural binder and behaves as a bound
> variable.   page 197

One might be surprised at the characterization of these pronouns as bound, given that the binder does not seem to be quantificational, but rather referential. However, Zribi-Hertz and Mbolatianavalona (1999) show that in VP-ellipsis contexts, these pronouns force a sloppy reading:

(55) Mieritreritra [ireo   ankizy ireo   ] fa miresaka   azy   aho,   Rasoa
      prs-think   [dm-pl child dm-pl] that prs-discuss 3(sg)-nom 1sg-nom, Rasoa
      koa
      too
      'Those children think that I am discussing them, and Rasoa too (thinks that I
      am discussing {*them/her}.'

If the pronoun has only a bound reading, then the semantics of the VP is:

(56) λx x thinks that I am discussing x

It seems then that we have morpho-syntactic as well as semantic evidence for the observation that, in some languages at least, bound pronouns can be ϕ-featureless.

(57) Observation B: BndPro = CxtPro $- \phi$

4.3 Locality Effects

Kratzer 2006 proposes that the ϕ-features on at least some bound pronouns get there via syntactic processes of feature transmission. On the assumption that such processes cannot operate over islands, we make the following prediction about locality of fake indexicals to their binders:

(58)   Generalization C": *Binder ... [$_{\text{Island}}$ ... BndPro[$u\phi$] ...]

Here the bound pronoun is behaving like a bare resumptive in needing to be bound locally. We need to be careful here about the data, as Kratzer points out, since third person bound pronouns are amenable to an analysis as D or E-type pronouns (see, for example, Elbourne 2005). Given this, we'll restrict attention here to non-third person pronouns.

It turns out that fake indexical pronouns can't have a bound reading when separated from their antecedent by an island:[2]

Complex Noun Phrase Constraint:

(59)   *Only I heard the rumour that Sue kissed me (No bound pronoun reading)

(60)   *I am the only one that heard the rumour that Sue kissed me

Wh-Island:

(61)   I'm the only one that said I could get home early.

(62)   ??I'm the only one that wondered how I can get home early

Coordinate Structure Constraint:

(63)   Only I did my homework.

(64)   *Only I met David early and did my homework.

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[2]This doesn't appear to be the case for Left Branch Condition Islands, as is clear from Kratzer's original example, which allows a bound reading of an indexical in a possessive position. I take it that this is because the Left Branch Condition is not universal, but is rather parameterized. We would have to say for English that the agreement process that allows appearance of the ϕ-features on the bound pronoun is possible even though extraction from that position is not. However, we have to allow Agree to take place where extraction cannot in any event (see Adger and Ramchand 2005 for some discussion.)

4.4 A puzzle

Generalizations C and C" look similar, connecting the behaviour of bare resumptives and bound pronouns. However, at first blush, it is a mystery as to why fake indexicals don't fall under something more like Generalization C', behaving more like non-bare resumptives, since they have overt ϕ-features. That is, given the surface similarity between non-bare resumptives and bound pronouns, why do they appear to behave differently with respect to locality?

The answer partly derives from the structures in which bound pronouns vs resumptives find themselves. A bound pronoun's antecedent has, at some point in the derivation, been in an A-position:

(65)   a.   Every girl thought I liked her.

          b.   Every girl λ x. x thought I liked her.

A resumptive's binder, in contrast, never has:

(66)   a.   Every girl that I liked her.

          b.   The girl λ x. I liked her.

Following Kratzer, the bound pronoun is linked to its antecedent which is in an A-position by a chain of agreement relations. For resumptives, there is no higher antecedent for A-agree.

We now have a difference to hook the explanation onto. The explanation itself will have to wait for the next section.

5   Deriving Generalizations C$^{(('')')}$

5.1   Syntax and Semantics of Pronouns

Pronouns are definite, they may have a ϕ-feature specification, and they can be interpreted as variables. Implementing these assumptions syntactically gives us a structure for pronouns that looks familiar from much recent work (see, especially, Déchaine and Wiltschko 2002, Kratzer 2006 and, most relevant to the question of resumption, Rouveret 2005, which develops a system similar to that developed here to tackle questions of

resumption and reconstruction).

Following Adger and Ramchand 2005, I assume that the core semantic need of a pronoun is to be identified by some operator. Adger and Ramchand implemented this via a feature ID, which took different kinds of values depending on how the pronoun was semantically identified (via variable assignment functions, or via context). Updating this idea, I'll take ID to be the lowest part of the extended projection of the pronoun, and I'll take its interpretation to be that of a variable of type $\langle e \rangle$. This is the equivalent to Kratzer's notion of a 'minimal pronoun', but whereas Kratzer takes the base of a pronoun to be some kind of a nominal predicate specified with ϕ features, I'll take it to be the category ID.

(67) ID : $[\![\text{ID}]\!] = x_e$

I take the semantics of the [def] feature to be fairly straightforward: it introduces an ι-operator, while imposing a uniqueness presupposition (e.g. Heim and Kratzer 1998).

(68) $[\![\text{[def]}]\!] = \lambda \, f \, \iota \, z \colon \exists! \, z \in c \wedge f(z). \ f(z)$

Note that [def] will be unable to combine with ID directly: ID is of type e, while [def] is a function from sets.

Given this, I take phi-features to be responsible for mapping ID to a set. There are a number of possible implementations here: some particular phi-feature's type maps from individuals to sets, or there is a category, say ΦP, which does this job; where ΦP is further specified with particular phi-features that narrow down the possibilities for elements in the set. I'll take the former route here for the reasons given directly below, but the basic idea is compatible with the latter.

There is evidence that number and person behave rather differently in binding. In Adger 2005, I showed that number is preserved in certain binding and predication configurations in contrast to person. Take, for example, the following relative clause constructions:

(69) I am the one that is proud of himself/myself

(70) We are the ones that are proud of themselves/ourselves

We see here that specification of the person feature on the reflexive is optional, with either

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a third person bound pronoun, or an indexical. Note, however, that number behaves differently:

(71)   *We are the ones who are proud of himself/myself

The number feature on the reflexive is obligatory. I argued that this showed that number was a matter of the ontology of the pronoun: number changes the sort of the pronoun but not its semantic type. Person, on the other hand, I argued to have the function of converting the denotation of the pronoun into a set that includes a speech act member.

Further evidence that this is the right way to go for number comes from the behaviour of nominal predicates, which are particular about the number of their argument:

(72)   a.   They are teachers
        b.   *He is teachers

(73)   a.   He is a teacher.
        b. ??They are a teacher.

I proposed in Adger 2005 that we capture this by assuming that there are different species of individual: atomic and plural. Following Kamp and Reyle (1993), I notated these as x, y, z and X, Y, Z.

(74)   ⟦ teacher[+plural] ⟧ = λX teacher*(X)

This is a function from the domain of plural individuals which picks out those individuals whose members are teachers (Following Link 1983 we use the predicate* notation to allow the predicate *teacher* to distribute over the atomic individuals that are members of the relevant plural individual).

(75)   ⟦ teacher[−plural] ⟧ = λx teacher(x)

Number, from this perspective, does not alter the type of ID, merely imposes a presupposition that ID ranges over only plural (/singular) individuals. Rather than sorting variables, we can state this in the notation that Heim and Kratzer 1998 develop for presupposition:

(76)   ⟦ [+plural] ⟧ = λx:x is plural.x

In contrast the person feature constrains the pronoun to include one of the speech act

participants: that is, it creates a set of individuals, one of whom is the speaker or hearer (see. e.g. Schlenker 2003). I'll call this feature [participant], following Halle 1997, and Noyer 1992, Harbour 2006:

(77) $\llbracket$ [+participant] $\rrbracket = \lambda x:$ speaker $\leq$ x $\vee$ hearer $\leq$ x. $\lambda y.$ x=y

Here the symbol $\leq$ signifies a mereological part relation and ensures that the source of the utterance is part of whatever ID ranges over.

This [participant] feature takes ID as an argument and ensures that the resulting set contains an individual who counts as the source or goal of the utterance in the context. The [±speaker] feature then simply filters out the possibility that one or the other of the speaker or hearer is in the relevant set.[3]

(78) $\llbracket$ [+speaker] $\rrbracket = \lambda f:$ speaker $\in$ f. f

With this much in place, we can now follow Elbourne 2005, Kratzer 2006 (and ultimately Postal 1966) and take the top layer of (many) pronouns to involve the Merge of a definite determiner with a classical Fregean semantics: it takes a set as its input and returns the unique individual in that set (mutatis mutandis for plural individuals, adopting Link 1983).

For example, if we take the pronoun *we* in English, it will have the following syntax and semantics:[4]
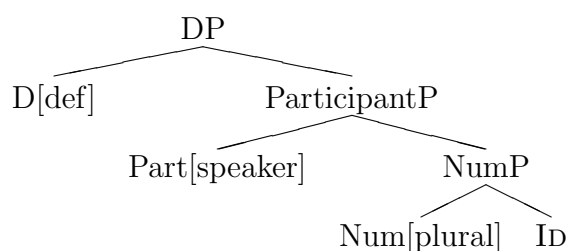
(79)   a. $\llbracket$ ID $\rrbracket = $ x

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[3]I think there's a great deal more work to be done on what the right features are for person and number, and the argument here is crucially one about semantic types, rather than semantic content. See, the discussion in Adger and Harbour 2008, the papers in Daniel Harbour and Béjar 2008 and, among many others, Harbour (2007) for discussion of the semantics of number features. Many questions arise about the representations of features given here to do with privativity, binarity of value etc. See Adger to appear for discussion.

[4]I've bundled together the [participant] and [speaker] features on a single head here: I take their composition to be type-driven, but a legitimate alternative is simply to Merge [speaker] after [participant].

b. ⟦ NumP ⟧ = x, with the presupposition that x is plural

c. ⟦ ParticipantP ⟧ λ y. y=x, with the presupposition that x is plural and contains the speaker

d. ⟦ DP ⟧ ι z. z=x, with the presuppositions that there is exactly one z in the context which is x and that x is plural and contains the speaker

Here the variable x is introduced by ID. [plural] then ensures that a presupposition is added that x is a plural individual. [+participant, +speaker] then converts this plural individual to a set of individuals one of whose members is the speaker. Finally, the definite determiner adds a uniqueness presupposition that there is exactly one maximal plural individual which contains the speaker in the context, which gives us the meaning of *we*. Intuitively, we satisfy the requirement that *Id* be semantically identified by equating it with a bound variable z.

For third person pronouns, we assume that they have a minus value for the [participant] feature, and that this contributes a negation to the semantics:

(80)   ιz. z=x, with the presupposition that neither the speaker nor hearer is ∈ x

It is a consequence of this system of ϕ-feature semantics that phi-features are necessary for the Merger of the [def] feature; since the definite feature requires a set, and ID provides an individual, the two cannot be Merged directly. At least person features must be Merged first, so that a set of entities is available for the semantic requirements of the definiteness operator.

5.2   Locality of Bare Resumptives

ID denotes a variable which must be identified to be interpreted. Pronominal syntax carries out this task by introducing a bound variable with which the interpretation of ID is equated. Assuming that sections of the syntactic derivation are delivered to the interpretative systems in phases (Chomsky 2005), it follows that identification of ID must take place before phase level. For non-bare resumptives this can be done via the ι-operator in the way just sketched.

A bare resumptive is simply ID, with no other structure. Following Adger and Ramchand (2005), I take bare resumptives to be bound from C, where C bears a feature which

is interpreted as lambda-abstraction. Schematically, we have:

(81) a. C[Λ] ... ID

      b. λ x ... x

See Heim and Kratzer (1998) or Büring (2005) for different implementations which ensure that the λ operator is interpreted as binding the variable semantically.

If C does not bear a Λ feature, ID is not semantically identified. It is then delivered to the interface but the interface has no means of providing ID with an interpretation. This is equivalent to saying that there are no freely applying variable assignment functions (recall that CxtPros are definite descriptions). It follows that ID in such a case has no interpretation. My claim is that this is exactly what happens when the binder is separated from ID by an island. In such cases, a phase head is reached before a Λ feature (cf. Chomsky 1991, 439–440, who claims that variables in natural languages are subject to a 'strong binding' constraint). It follows that a bare resumptive must be bound within its phase and Generalization C is captured.

The same explanation extends to the cases of indexicals inside islands. To have a bound reading, the ϕ-features on the indexical must not be interpreted (by whatever mechanism). If they are not interpreted, then [def] cannot be Merged, since [def] is not of the right type to combine directly with ID. In such a case ID will have to be locally bound. But ID will have no binder by the derivational point when the phase head is Merged, leading to the unavailability of bound readings inside islands. Third person pronouns, on the other hand, can always be treated as definite descriptions, with [−participant] features interpreted.

What then of languages like Welsh which have non-bare resumptives but impose a locality constraint on their binding. In the system developed here, these pronouns project ϕ-related structure (number and person), but no D-layer. They are therefore interpreted as bound indefinites. The ϕ features on these pronouns simply serve to add additional restrictions to the variable. The difference between languages which have a locality constraint on their resumptives and those which do not, reduces to this difference.

In summary:

- When a pronoun has a participant specification, D[+def] can Merge and bind ID resulting in a definite description: Generalization C' follows—when ϕ-features are

overt on a resumptive, it's at least possible to bind the resumptive non-locally.

- There's no way to Merge D[+def] with ID directly, so in such cases ID will have to be bound by phase head (e.g. the Λ feature). This will have to be local, since ID needs to be bound before it is interpreted, and Generalization C follows.

- Note that it's not necessary that D[+def] is Merged after Merge of [participant]. In such cases, we expect to see a requirement on the resumptive that it be locally bound (it's not a definite description): this is what we saw in Welsh.

5.3   Further consequences

The analysis developed above takes true resumptive pronouns to be definite descriptions (see also Rouveret 2005). This raises two issues: (i) since these pronouns are definite, we expect them to show true definite behaviour; (ii) if resumptives of this sort are definite descriptions, we might ask how they can be bound at all.

The first question seeems to have a rather positive answer. As has been known for quite some time, resumptives in Hebrew show general definiteness/wide scope effects. For example, Doron (1982) shows that a resumptive occuring within the scope of a universal syntactically, must be interpreted as outside the scope of the universal semantically (in contrast to the behaviour of traces):

(82)   ha-iša   še   kol   gever hizmin ota hodeta   lo.
       the-woman that every man   invited her thanked to-him
       The woman every man invited thanked him [individual reading only]

Under our analysis, (82) receives an interpretation like (83):

(83)   The woman x such that every man y invited the unique z = x, thanked v

Here the definite 'the woman' is forced to be unique, by virtue of the definite description it binds.

Further evidence for the definiteness of resumptives in Hebrew comes from D-linking: it is impossible to use a resumptive strategy in a non-D-linked environment in Hebrew (Sharvit 1999):

(84)   a.   *mi nifgašta it-o?
              who you-met with-him

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Who did you meet with?'

b. im mi nifgašta?
with who you   met
Who did you meet with?'

Here, in the out of the blue question in (84), a resumptive strategy is impossible and a movement strategy must be followed instead. This contrasts with (85), where the wh-element is itself definite (D-linked):

(85)   eyze   student nifgašta it-o?
which student you-met with-him
Which student did you meet with?'

Again this follows from the interpretation we have given to these pronouns, as the pronoun comes with the presupposition that the questioned entity is identifiable in the context.

Furthermore, in intensional contexts, only a De Re reading is possible for resumptives (while a De Dicto reading is possible for traces).

(86)   Dan yimca et   ha-iša   še hu mexapes ota
Dan will   find the-woman that hu look-for her
'Dan will find the woman he is looking for' [De Re reading only]

Once again, the uniqueness presupposition of the definite description which is the meaning of the pronoun captures this contrast.

None of these effects are found for Gaelic Bare Resumptives. Gaelic has a movement possibility with prepositional wh-extraction just like Hebrew, but there is no contrast in interpretation or grammaticality between the two variants. Specifically, the resumptive version does not have to be D-linked.

(87)   a.   Cò   a   bhruidhinn thu ris?
Who that talked   you to-3ms
Who did you talk to?

b.   Cò   ris   an   do   bhruidhinn thu?
Who to-def that talked you?
Who did you talk to?

Gaelic, unfortunately, does not appear to allow the universal to scope outside of its relative clause except for specificational sentences (again, see Sharvit 1999) and the syntax of these raises additional complications (see Adger and Ramchand 2003). For these reasons I leave

the the analogues to (82) aside here. However, as expected, Gaelic bare resumptives in intensional contexts readily allow a De Dicto reading:

(88)   Gheibh mi boireannach a   tha mi ag   iarraidh bruidhinn ris
        Get   I woman   that I   asp want talk   ti-3MS
        'I'll find a woman that I want to talk to.'

The second issue that the analysis raises is how definite descriptions can be bound at all. I have little to add here, apart from the fact that it is clear that definite descriptions can be bound (e.g Wilson 1991):

(89)   Every scientist who was fired from the observatory at Sofia was consoled by someone who knew *the fired scientist* as a youth

Here it seems that *the fired scientist* is behaving as a bound variable. Moreover, there are recent approaches which take all pronouns to essentially be kinds of definite descriptions, even the bound ones (see Elbourne 2005 for discussion).

6   Conclusions

I began this paper with McCloskey's Generalization. We've reached a point where Mc-Closkey's generalization has to be maintained in a slightly more fine-grained way: ResPros, BndPros and CxtPro's indeed share a common attribute (ID), but may differ in ϕ-feature specification, and in their [def] specification.

The bare ResPros which appear in many languages can be analysed as A-bar bound pronouns which lack ϕ-features (either number and person, or just person) and these Bare Resumptives need to be locally connected to their binder. I argued that this derives from the semantic need of ID to be identified.

The analysis is that pronouns have a category ID which must be semantically identified to be well formed. Such identification arises via binding by either D[+def] or by some higher binder (e.g. Λ). If ID is bound by D, then it is a definite description and can itself then be bound non-locally by an operator such as a quantifier or wh-expression. If ID is not bound by D, then it will have to be locally bound by some other operator, before its phase is completed, and will hence always display locality effects.

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