Control Theory and the Relationship between Logophoric Pronouns and Logophoric Uses of Anaphors

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PSST Workshop, 1-2 April 2022
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0. The Larger Context

I am working on a unified theory of:

- Upward C-agreement (in African languages)
- Allocutive agreement (esp. Magahi)
- Indexical shift
- *Logophoric pronouns (in African languages)*
- *(Some) LD anaphors (e.g. in Japanese)*
- Switch-reference marking

The unifying thread: "Funny things Cs do to relate to NPs in their environment"

Hypothesis: Each of these is a crosslinguistically rare construction, but they are all constructed out of a common UG infrastructure that is not rare.
Analogy: Wings {flippers, arms…} are a rare feature of mammals (bats only), but they are constructed out of a common "syntax" of the forearm, which is universal in mammals.

1. Introduction

One of the more striking crosslinguistic comparisons in the history of generative linguistics is between dedicated logophoric pronouns and LD uses of anaphors. However, there have been few detailed point-by-point comparisons. Here we compare *imo* in Ibibio with Japanese *zibun*.

We confirm that the two are very similar when the key element is in a complement clause:

(1) a. Okon á-ké-dọ̀kkọ́ Edem [ké Emem í-maá-ghá ímọ̀]. (Ibibio)
Okon 3.SG-PST-tell Edem that Emem 3.SG-like-NEG LOG
'Okon$_i$ told Edem$_k$ [lOp$_{i,*k}$ that [Emem does not like him$_{i,*k}$]].'

b. Okon a-ke-kop a-to Emem [ke imọ i-ma-i-dia nsa-akʌk].
Okon 3.SG-PST-hear 3.SG-from Emem that LOG 3.SG-PST-3.SG-win lottery
'Okon$_i$ heard from Emem$_k$ [lOp$_{i,k}$ that [he$_{i,k}$ won the lottery]].'

(2) a. Keizi-wa sono seizika-ni [booryokudan-ga zibun-o sagasi-te-i-ru-koto-o] osie-ta.
dectective-TOP the politician-DAT gangsters-NOM self-ACC search-AUX-PRS-C-ACC tell-PST
'The detective$_i$ told the politician$_k$ [zOp$_{i,*k}$ that gangsters are blackmailing self$_{i,*k}$].

b. Keizi-wa sono seizika-kara [booryokudan-ga zibun-o odosi-te-i-ru-koto-o] kii-ta.
dectective-TOP that politician-from gangsters-NOM self-ACC blackmail-AUX-PRS-C-ACC heard
'The detective$_i$ heard from the politician$_k$ [zOp$_{i,k}$ that gangsters are blackmailing self$_{i,k}$].

On the other hand, there are stark differences in other syntactic positions: a relative clause, a TP-level adjunct clause, or a matrix clause. Ibibio's *ímọ̀* is generally impossible in these contexts:

(3) a. *Okon a-ma a-duọk [ngwet odo [se imọ i-k-i-dep]].
Okon 3.SG-PST-3.SG-lose book the REL LOG 3.SG-PST-3.SG-buy
('Okon$_i$ lost [the book [lOp$_{*i}$ that he$_{*i}$ bought]].')

b. *Obuut a-ma a-mʌm Okon sia ayín ímọ̀ a-ma-a-sọng Emem ayin.
shame 3.SG-PST-3.SG-hold Okon because son LOG 3.SG-PST-3.SG-strong Emem eye
('Okon$_i$ is ashamed [lOp$_{*i}$ because his$_{*i}$ son insulted Emem].')

In contrast, *zibun* in Japanese is possible in these contexts, although with different antecedents:

(4) a. Takasi-wa [[zibun-o sonkee-suru] onna-to] kekkon-si-ta.
Takasi-TOP self-ACC admire-do woman-with marry-do-PST
'Takashi$_i$ married [a woman [zOp$_i$ that admires self$_i$]].' (Nishigauchi 2014: 185)

b. Takasi-wa [Yosiko-ga zibun-o tazunete-ki-ta node] uresigat-ta.
Takasi-TOP Yosiko-NOM self-ACC visit-come-PST because happy-PST
'Takasi$_i$ was happy [zOp$_i$ because Yosiko came to visit him$_i$].' (Sells 1987: 464)

We claim that control theory—Landau's (2013) "OC signature"—sheds light on both aspects:
- In contexts of OC, control applies, neutralizing intrinsic differences between lOp and zOp.
- In other contexts, zOp can undergo NOC, whereas lOp is ruled out.

2. Basic assumptions: A-bound anaphor versus A-bar bound pronoun

2.1 *Zibun* as an A-bound anaphor

It is uncontroversial that *zibun* in Japanese is intrinsically an anaphor. It can have a local clause-internal antecedent, which must c-command it. It thus shows Condition A behavior.

(5) a. Taroo-ga zibun-o seme-ta.
Taroo-NOM self-ACC blame-PST
'Taroo$_i$ blamed (him)self$_i$.'

b. *Taroo-no otosimono-ga zibun-o toraburu-ni makikon-ta.
Taroo-GEN lost.bag-NOM self-ACC trouble-into involve-PST
('Taroo$_i$'s lost bag got self$_i$ in trouble.')

How then is LD *zibun* possible? We follow Nishigauchi (2014) and Charnavel (2019, 2020) in assuming that in cases like (6) *zibun* is locally bound by a null DP **zOp** in Spec PoVP (see also Huang and Liu 2001: Sec. 5.2, (Tenny 2006, Sundaresan 2012, Park 2018, Sundaresan 2018).

(6) a. Taroo-wa [Hanako-ga zibun-o kiratte-i-ru-to] omotte-ir-u
Taroo-TOP Hanako-NOM self-ACC hate-AUX-PRS-C think-AUX-PRS
'Taroo$_i$ thinks Hanako hates self$_i$'

b. Taroo$_i$ thinks [$_{CP}$ that [zOp$_i$ PoV [Hanako hates self$_i$]]]

As an A-position at the top of the TP space, this is possible in any complement CP:

(7) Hanako-wa [doroboo-ga zibun-no kaban-o nusumu-no/tokoro-o mi-ta.
Hanako-TOP thief-NOM self-GEN bag-ACC steal-C-ACC see-PST
'Hanako$_i$ saw the thief steal self$_i$'s bag.' (Contrast (13b)) in Ibibio.)

Two LD *zibuns* in the same embedded clause must have the same antecedent (see Huang and Lui 2001: (13) and Park 2018 for similar paradigms in Chinese and Korean).

(8) Taroo-wa Hanako-ga zibun$_1$-no yuuzin-ga zibun$_2$-o
Taroo-TOP Hanako-NOM self-GEN friend-NOM self-ACC
semete-i-ta-to it-ta-to omot-ta
blame-AUX-PST-C say-PST-C think- PST
'Taroo thinks that Hanako said that self$_1$'s friend was blaming self$_2$.'
a. OK: zibun$_1$=zibun$_2$=Taroo b. OK: zibun$_1$=zibun$_2$=Hanako
c. ??zibun$_1$=Taroo, zibun$_2$=Hanako d. ??zibun$_1$=Hanako, zibun$_2$=Taroo
e. OK: zibun$_1$=Taroo or Hanako, zibun$_2$=zibun$_1$'s friend

(9) Taroo$_i$ thinks that Hanako$_k$ said [$_{PoVP}$ zOp$_n$ PoV[[self$_n$'s friend]$_m$ was blaming self$_{m,n}$]]
n=i or n=k

2.2 *Imo* as an A-bar bound pronoun

In contrast to *zibun*, *imo* cannot have a clause-internal c-commanding antecedent. It obeys Condition B.

(10) a. *Okon a-ke-bo ke ímọ̀ i-m-i-kpi ímọ̀.
Okon 3.SG-PST-say that LOG 3.LOG-PERF-3.LOG-cut LOG
('Okon said that he$_i$ cut him$_{*i}$.') (OK with …*idem ímọ̀* 'Log self')

b. Obuut a-ma-a-mʌm Okon ke ayín ímọ̀ a-ma-i-miem ímọ̀.
shame 3.SG-PST-3.SG-hold Okon that son LOG 3.SG-PST-3.LOG--insult LOG
'Okon$_i$ is ashamed that his$_i$ son insulted him$_i$.'

We follow Koopman and Sportiche (1989) on Abe in saying that logophoric pronouns must be bound by an operator **lOp** (see also adopted in Baker (1999), Speas (2004), Adesola (2005), Anand (2006), and Deal (2020: 69, 114-116), among others).

(11) a. lOp is licensed by a certain set of C-like heads: *ke*, *mme*, *yak*, …
b. A logophoric pronoun must be bound (c-commanded) by a coindexed lOp.

Logophoric pronouns are only possible in embedded clauses—in the scope of C.

(12) a. Emem a-ma-a-dọkkọ eka omo/*imọ ke imọ i-ma-i-dep ebot.
Emem 3.SG-PST-3.SG-tell mother his/*LOG that LOG 3.LOG-PST-3.LOG-buy goat
'Emem$_i$ told his$_i$ mother that he$_i$ bought a goat.'

b. Emem$_i$ told his$_i$/*Log$_i$ mother [lOp$_i$ C [Log$_i$ bought a goat]]

Some Cs license logophoricity and others don't (more striking in some related languages).

(13) a. Okon a-ma-a-kit ke Emem a-ma-a-yip ebot ímọ̀.
Okon 3.SG-PST-3.SG-see that Emem 3.SG-PST-3.SG-steal goat LOG
'Okon$_i$ saw that Emem stole his$_i$ goat.'

b. Okon a-ma-a-kit naña Emem a-yip ebot ọmọ/*imọ.
Okon 3.SG-PST-3.SG-see how Emem 3.SG-steal goat his/*LOG
'Okon$_i$ saw Emem steal(ing) his$_i$ goat.' (cf. Clements 1975: 157; contrast (7))

Logophoric pronouns are not possible inside derived nominals as opposed to CPs:

(14) a. Okon i-kit-te n-dudue eka ọmọ/*imọ.
Okon 3.SG-see-NEG NMLZ-commit.fault mother his/*LOG
'Okon$_i$ did not see his$_i$ mother's mistake/fault.'

b. Okon i-kit-te ke eka imọ a-ma-a-due.
Okon 3.SG-see-NEG that mother LOG 3.SG-PST-3.SG-commit.fault
'Okon$_i$ does not see that his$_i$ mother committed a fault.'

(There are also WCO effects involving *imo* bound by quantifiers; cf. Baker 1999.)

Note that since *imo* is a pronoun, it does not have to be bound in the local clause. Two instances in the same clause need not have the same antecedent. Contrast (15) with (8) in Japanese.

(15) a. Okon á-kére ké Edem á-ké-n-dọ̀kkọ̀ ké èkà ímọ̀ é-kpóno ímọ̀.
Okon 3.SG-think that Edem 3.SG-PST-1.SG-tell that mother LOG 3.SG.3.LOG-respect LOG
'Okon$_i$ thinks that Edem$_k$ told me that his$_{i,k}$ mother respects him$_{k,i}$.'
(4 ways ambiguous: 'his'=Okon or Edem, 'him'=Okon or Edem) (contrast with (22))

b. Okon$_i$ thinks [lOp$_i$ that [Edem$_k$ told me [lOp$_k$ that [his$_{i,k}$ mother respects him$_{k,i}$]]]].

3. Uniform logophoric behavior in CP complements

Zibun and *imo* have different intrinsic properties, as do the null DPs that bind them. Therefore, it is somewhat surprising that they behave (almost) identically in complement CPs. We account for this by saying that both zOp and lOp undergo the same obligatory control.

(16) *The OC signature:* (Landau 2013: 29; see also Manzini (1983), Landau (2001))
In a control construction […X$_i$ … [$_S$ PRO$_i$ …] …], where X controls the PRO subject of the clause S:
a. The controller(s) X must be (a) co-dependent(s) of S.
b. PRO (or part of it) must be interpreted as a bound variable.

(17) The Generalized OC Signature: (GOCS, preliminary)
If a clause with an intrinsically null DP (PRO, ***lOp, zOp,*** …) at its edge is generated inside VP, then the null DP is controlled by an argument of the verb. Which argument of the verb is the controller is determined by the "thematic roles" of the DPs involved.

3.1 The core pattern

The subject of a dyadic verb can antecede *imo* in its complement regardless of its theta-role:

(18) a. Okon a-ma a-kañ ke imọ i-k-i-yip ebot.
Okon 3.SG-PST-3.SG-deny that LOG 3.LOG-PST-3.LOG-steal goat
'Okon$_i$ denied that he$_i$ stole a goat.'

b. Eno a-nim/ a-diọññọ́ ke Edem i-mma-gha ímọ̀.
Eno 3.SG-believe/3.SG-know that Edem 3.SG.3.LOG-like-NEG LOG
'Eno$_i$ believes/knows that Edem doesn't like her$_i$.'

c. Okon a-me-kop ngkpa idem ke Emem í-maá-ghá ímọ̀.
Okon 3.SG-PERF-hear death body that Emem 3.SG.3.LOG-like-NEG LOG
'Okon$_i$ is surprised that Emem does not like him$_i$.'

A similar range of verbs allows LD *zibun* with the matrix subject as the antecedent in Japanese:

(19) a. Taroo-wa zibun-ga okane-o nusun-da-koto-o hitee-si-ta.
Taroo-TOP self-NOM money-ACC steal-PST-C-ACC deny-do-PST
'Taroo$_i$ denied that self$_i$ stole the money.'

b. Taroo-wa Hanako-ga zibun-no hon-o nusun-da-to sinzite-i-ru.
Taroo-TOP Hanako-NOM self-GEN book-ACC steal-PST-C believe-AUX-PRS
'Taroo$_i$ believes that Hanako stole self$_i$'s book.'

c. Taroo-wa Hanako-ga zibun-o kiratte-i-ru-koto-ni odoroi-ta
Taroo-TOP Hanako-NOM self-ACC hate-AUX-PRS-C-DAT- get.surprise-PST
'Taroo$_i$ got surprised that Hanako hates self$_i$.'

Possessors of arguments of the matrix verb cannot in general antecede *imo* or *zibun*:[1]

(20) a. Nditọ Okon e-kere ke Edem i-mma-gha mm-ímọ̀/*ímọ̀.
children Okon 3.PL-think that Edem 3.SG.3.LOG-like-NEG PL-LOG/*LOG
'Okon$_i$'s children$_k$ thinks that Edem doesn't like *him$_i$/them$_k$.'

b. ??Ukpọk ekpat Okon a-ma-n-toiyo ke ng-kpina n-dep adesi n-nọ imọ.
empty bag Okon 3.SG-PST-1.SG-remind that 1.SG-should 1.SG-buy rice 1.SG-give LOG
('Okon$_i$'s empty bag reminded me that I should buy rice for him$_i$.')

(21) a. Taroo-no hahaoya-wa Ziroo-ga zibun-o kiratte-i-ru-to omotte-i-ru.
Taroo-GEN mother-TOP Ziroo-NOM self-ACC hate-AUX-PRS-C think-AUX-PRS
'Taroo$_i$'s mother$_k$ thinks Ziroo hates self$_{*i,k}$.'

b. #Taroo-no asiato-wa zibun-ga mada tikaku-ni i-ru-koto-o sisasi-ta.
Taroo-GEN footprint-TOP self-NOM still around-at be-PRS-C-ACC suggest-PST
(not: 'Taroo$_i$'s footprint suggested that self$_i$ was still around.')

[1] This is possible in the special case of "X's letter said that…" We assume that this is a case of metonymy.

With triadic verbs, one of the arguments can antecede: the agent, not the goal.

(22) a. Okon á-ké-dọ̀kkọ́ Edem [ké Emem í-maá-ghá ímọ̀]. (Ibibio)
Okon 3.SG-PST-tell Edem that Emem 3.SG-like-NEG LOG
'Okon$_i$ told Edem$_k$ [lOp$_{i,*k}$ that [Emem does not like him$_{i,*k}$]].'

b. Eno a-ke-bip Okon mme Emen a-ma-i-kid imọ.
Eno 3.SG-PST-ask Okon Q Emen 3.SG-PST-3.LOG-see LOG
'Eno$_i$ asked Okon$_k$ [lOp$_{i,*k}$ whether [Emen saw her$_i$/him$_{*k}$.]]' (Clements 1975: 154)

(23) a. Keizi-wa sono seizika-ni [booryokudan-ga zibun-o sagasi-te-i-ru-koto-o] osie-ta.
dectective-TOP the politician-DAT gangsters-NOM self-ACC search-AUX-PRS-C-ACC tell-PST
'The detective$_i$ told the politician$_k$ [zOp$_{i,*k}$ that gangsters are blackmailing self$_{i,*k}$].

b. Taroo-wa Hanako-ni Ziroo-ga zibun-o yonde-i-ru-to tutae-ta.
Taroo-NOM Hanako-DAT Ziroo-NOM self-ACC call-AUX-PRS-C convey-PST
'Taroo$_i$ conveyed to Hanako$_k$ that [zOp$_{i,*k}$ Ziroo is calling self$_{i/*k}$].'

The *by*-phrase of a passive can antecede just as the agent of an active can (Japanese only):
(24) Sono seizika-wa keizi-kara [booryokudan-ga zibun-o sagasi-te-i-ru-koto-o] osiet-rare-ta.
that politician-TOP detective-from gangsters-NOM self-ACC search-AUX-PRS-C tell-PASS-PST
'That politician$_i$ was told by the detective$_k$ that [zOp$_{i,k}$ gangsters are searching for self$_{i/k.]}$

Like a passive agent, an oblique source can antecede:

(25) a. Emem a-ma-a-bọ etop a-to Okon ke imọ i-ya-i-di mfin.
Emem 3.SG-PST-get message 3.SG-from Okon that LOG 3.LOG-FUT-3.LOG-come today
'Emem$_i$ got a message from Okon$_k$ [lOp$_{i,k}$ that he$_{i,k}$ will come today].'

b. Okon a-ke-kop a-to Emem [ke imọ i-ma-i-dia nsa-akʌk].
Okon 3.SG-PST-hear 3.SG-from Emem that LOG 3.SG-PST-3.SG-win lottery
'Okon$_i$ heard from Emem$_k$ [lOp$_{i,k}$ that [he$_{i,k}$ won the lottery]].'

(26) a. Taroo-wa Hanako-kara sono gainen-wa zibun-no hatumei-da-to osowat-ta.
Taroo-TOP Hanako-from the idea-TOP self-GEN invention-COP-C learn-PST
'Taroo$_i$ learned from Hanako$_k$ that [zOp$_{i,k}$ the idea was self$_{i,k}$'s invention.]'

b. Keizi-wa sono seizika-kara [booryokudan-ga zibun-o odosi-te-i-ru-koto-o] kii-ta.
dectective-TOP that politician-from gangsters-NOM self-ACC blackmail-AUX-PRS-C-ACC heard
'The detective$_i$ heard from the politician$_k$ [zOp$_{i,k}$ that gangsters are blackmailing self$_{i,k}$].

Also an experiencer object can antecede a logophor/anaphor within the surface (extraposed) subject. This fits the GOCS on the assumption that CP originates below the experiencer.[2]

[2] Also an experiencer object can control lzOp if there is no external argument, or if the external argument is an inanimate causer, but not if the external argument is a true agent.

(27) A-ma-a-kpa Okon idem ke ímọ̀ i-ma-i-dia nsa-akʌk.
3.SG-PST-3.SG-die Okon body that LOG 3.SG-PST-3.LOG-win lottery
'It surprised Okon$_i$ [lOp$_i$ that [he$_i$.won the lottery]].'

(28) C kyoozyu-ga zibun-o in'yoo-sita koto-ga Takasi-o utyooten-ni si-ta.
Prof C-NOM self-acc quote-past that-nom Takasi-acc crazy-dat make-past
'That [zOp$_{i,}$ Prof C quoted self$_{i,}$] made Takashi$_{i,}$ crazy.' (see also Sells 1987: 453)

So in complement clauses logophoric and LD anaphoric items are virtually identical. This follows from the hypothesis that lOp and zOp both undergo control via the GOCS.

3.2 Toward a unified theory of controller choice

lOp/zOp constructions are like control of PRO in that theta-roles determine which matrix argument is the controller.
However, they are different in which thematic roles are preferred controllers: theme arguments are at the bottom of the list for lOp/zOp, but they can be at the top of the list for control of PRO.

(29) a. Okon a-ma-a-temme Emem edi-kpóno ímọ̀.
Okon 3.SG-PST-3.SG-instruct Emem INF-respect LOG
'**Okon$_i$** instructed Emem$_k$ [**lOp$_i$**$_{,*k}$ C [PRO$_k$$_{,*i}$ to respect **him$_i$**$_{,*k}$]].'

b. Taroo-wa Hanako-ni zibun-o itawaru-yoo meizi-ta.
Taroo-TOP Hanako-DAT self-ACC take.care.of-C order-PST
'**Taroo$_i$** ordered Hanako$_k$ [**zOp$_i$** C [PRO$_k$$_{,*i}$ to take care of **self$_i$**$_{,k}$].'

This disanalogy has dissuaded many from pursuing an OC approach to logophoric constructions. We want to diffuse this concern (without managing a complete theory of controller choice now).

Step one: Subject control of PRO is actually regular with verbs of commitment, including *swear*, *vow*, *pledge*, *threaten*,… as well as *promise* (Sag and Pollard 1991), Landau 2013: 129).

Step two: The phenomenon of "control shift" shows that controller choice is a function not only of the thematic roles of the matrix arguments but also of the thematic role of the controlled item.

(30) a. John$_i$ promised Mary$_k$ [PRO$_i$ to come to the party].
b. John$_k$ promised Mary$_i$ [PRO$_i$ to be allowed to stay up late for the party].
c. (?)John$_k$ promised Mary$_i$ [PRO$_i$ to be given an extra piece of cake].

(31) a. John$_k$ persuaded Mary$_i$ [PRO$_i$ to come to the party].
b. John$_i$ persuaded Mary$_k$ [PRO$_i$ to be allowed to stay up late for the party].
c. (?)John$_i$ persuaded Mary$_k$ [PRO$_i$ to be given an extra piece of cake].

Given that which matrix argument controls PRO is influenced by properties of the controlled item, a path opens up to understand the paradoxical (29): PRO and l/zOp are different elements, with different semantic roles, so it is not surprising that they can have different controllers.

Step three: Panther and Köpcke (1993): when PRO bears a beneficiary role but not an agent, as in (30b,c) and (31b,c), its controller is the NP that counts as the beneficiary of the matrix verb.

(32) The semantic-pragmatic roles of the controller and PRO are (nearly) identical.

We generalize this to (30a) and (31b) with the help of Jackendoff and Cullicover (2003): Here quasi thematic notions like OBLIGATED have to match between the controller and PRO. OBLIGATED in the infinitival clause is added to the subject by a null modal head.

Step four: We hypothesize that lOp and zOp get a particular kind of thematic role:

(33) LOp/zOp receives (only) an agent-(like) thematic role from C/PoV
(cf. Speas &Tenny 2003)

Note that in plenty of cases the C that licenses logophoricity is cognate with the verb 'say':

(34) Ama (gblo) be yè-Do+Nku nyOnuGi…. (Ewe, Clements 1975: 156)
Ama say that(=say) LOG-remember girl
'Ama$_i$ said that she$_i$ remembered the girl who….'

This makes it plausible that the thematic role of Spec CP would be similar to that of 'say'. Therefore an agent (source, experiencer) argument in the matrix clause matches the role of lOp/zOp in the complement, whereas a theme argument or a goal argument does not. QED.

Bonus: If the infinitival complement has no modal head to influence control, we predict that agent control should happen in the presence of a goal even with PRO—propositional verbs.

(35) Mary$_i$ claimed [PRO$_i$ to have paid the fine].

(36) a. Mary$_i$ claimed to the judge$_k$ [PRO$_i$ to have paid the fine].
b. *Mary$_k$ claimed to the (male) judge$_i$ [PRO$_i$ to have contradicted himself$_i$].

We conclude that it is very possible that the same theory of controller choice—rooted in the matching of fine-grained and multilayered thematic roles—applies both to PRO and l/zOps.

3.3 On super-LD anaphors and logophors

The antecedent of *imo* or *zibun* can be the agent/source/experiencer argument not of the immediately superordinate clause, but of an even higher clause. This seems unlike OC.

(37) Okon á-kére ké Edem á-ké-n-dọ̀kkọ̀ ké Mfọn é-kpóno ímọ̀.
Okon 3.SG-think that Edem 3.SG-PST-1.SG-tell that Mfon 3.SG.3.LOG-respect LOG
'Okon$_i$ thinks that Edem$_k$ told me that Mfon respects him$_{i,k}$.'

(38) Takashi-wa [Mari-ga [minna-ga zibun-o erabi soo-da-to] iw-ta-to] omow-ta.
Takashi-TOP Mary-NOM everyone-NOM self-ACC elect likely-COP-C say-PST-C think-PST
'Takashi$_i$ thought that Mary$_k$ said that everyone is likely to elect self$_{i,k}$.'

On this basis, others conclude that zOp does not undergo OC, but rather NOC (Nishigauchi (2014: 171-172) or syntactically unconstrained pronominal coreference (Charnavel 2020, 2021).

For Ibibio, we already saw the answer (in (15)): a remote lOp can bind the logophoric pronoun.

(39) Okon$_i$ thinks [lOp$_i$ that [Edem$_k$ told me [lOp$_k$ that [Mfon respects Log$_{i,k}$]]]].

But the anaphoric nature of *zibun* requires a bit more. Here we can that the nearby zOp can be obligatory controlled by the next highest zOp ("chained control"):

(40) Takashi$_i$ thought [C [zOp$_i$ PoV [Mary$_k$ said [C [**zOp$_i$** PoV [everyone elect zibun$_i$]]]].

This fits into control theory if stated in terms of extended projections—as it should be anyway.

(41) *The Generalized OC Signature:* (GOCS, final)
If a clause with an intrinsically null DP (PRO, lOp, zOp, …) at its edge is generated inside VP, then the null DP is controlled by an argument *of a head in the extended projection of* V. Which of these arguments is the controller is determined thematically.

The chained control analysis makes interesting predictions. Consider a structure like this:

(42) John thinks [that Mary said [that zOp$_1$ zibun$_1$'s mother hopes [that zOp$_2$ zibun$_2$ will win]]].

Our prediction: zibun$_2$=Mary → zOp$_2$ = Mary → *zOp$_1$ =Mary* → zibun$_1$ =Mary, *John

(43) John-wa Mary-ga zibun$_1$-no hahaoya-ga zibun$_2$-ga katu-koto-o
John-TOP Mary-NOM self-GEN mother-NOM self-NOM win-C-ACC
negate-i-ru-to it-ta-to omotte-i-ru.
hope-AUX-PRS-C say-PST-C think-AUX-PRS
'John thinks Mary said self$_1$'s mother hopes that self$_2$ will win.'
a. John$_i$ thinks Mary$_k$ said self1$_i$'s mother hopes that self2$_i$ will win.
b. John$_i$ thinks Mary$_k$ said self1$_k$'s mother hopes that self2$_k$ will win.
c. *John$_i$ thinks Mary$_k$ said self1$_i$'s mother hopes that self2$_k$ will win.
d. *John$_i$ thinks Mary$_k$ said self1$_k$'s mother hopes that self2$_i$ will win.

4. Logophors and LD anaphors outside of OC contexts

Generalization:
(44) a. If lOp does not undergo OC in accordance with the GOCS, it is ruled out.
b. If zOp does not undergo OC, it is assigned a prominent [+empathetic] antecedent.

4.1 Relative clauses

Ímọ̀ is generally not licensed in relative clauses in Ibibio:

(45) a. Okon a-ma-a-duọk ngwet odo se anye/*imọ i-k-i-dep.
Okon 3.SG-PST-3.SG-lose book the REL he/*LOG 3.LOG-PST-3.LOG-buy
'Okon$_i$ lost the book that he$_i$ bought.'

b. Okon a-ke-dọ awonwaan a-(i)-maa-gha anye/?*imọ.
Okon 3.SG-PST-marry woman 3.SG-(3.LOG)-PST-like-REL him/?*LOG
'Okon$_i$ married a woman who likes him$_i$.'

(Qualifications: *Ímọ̀* is possible in a relative clause if the whole structure is embedded in a larger complement clause, as in 'Okon$_i$ thinks that I lost the book that LOG$_i$ gave me.' More surprisingly, it is OK in the object of an intentional verb because of a form of reanalysis.)

In contrast, LD *zibun* in Japanese is readily available inside relative clauses.
(46) a. Takasi-wa [[zibun-o sonkee-suru] onna-to] kekkon-si-ta.
Takasi-TOP self-ACC admire-do woman-with marry-do-PST
'Takashi$_i$ married [a woman [zOp$_i$ that admires self$_i$]].' (Nishigauchi 2014: 185)

b. sono hito-wa Hanako-ni Ziroo-ga zibun-ni nokosi-ta kotoba-o osiete-kure-ta.
that person-TOP Hanako-DAT Ziro-NOM self-DAT leave-PST words-ACC tell-BEN-PST
'That person$_i$ told Hanako$_k$ [the words [Ziroo left for self$_{i,k}$]].'

4.2 Adjunct clauses

Most adjunct clauses do not allow lOp in Ibibio:
(47) a. *Okon á-ma-á-dat íbṍk ké ìnì dṍktṍ á-ké-tèmméké imọ i-bó i-dát.
Okon 3.SG-PST-3.SG-take drug at time doctor 3.SG-PST-instruct LOG 3.LOG-say 3.LOG-take
('Okon$_i$ took the medicine when the doctor told him$_i$ to take it.')

b, Okon a-mé-nèm-ésít sia Emem a-ma i-nọ anye/*imọ íbṍk.
Okon 3.SG-PERF-sweet-heart because Emem 3.SG-PST-3.LOG-give him/*LOG drug
'Okon$_i$ is happy because Emem gave him$_i$ a drug.'

c. Akpedo Emem i- koot-to anye/*imo usọrọ odo, Okon i-di-kan-na a-di-di
If Emem 3s-call-Neg him/*Log party the, Okon 3s-Fut-can-Neg 3s-Inf-come
'If Emem doesn't invite him to the party, Okon will not be able to come

(Qualification: a logophoric pronoun can be in an adjunct if it is bound by a higher lOp.)

Note that a 'when' clause can license a logophoric pronoun when it functions as the complement. It is the position of the containing clause that is crucial, not the structure of its left periphery:
(48) Enọ a-ma-a-bip nditọ-ideen ini ọmmọ e-dighi-nwam ímọ̀.
Eno 3.SG-PST-3.SG-ask children-male time they 3.PL-FUT-help LOG
'Eno$_i$ asked the boys when they will help her$_i$.'

In contrast, zOp binding *zibun* is possible in a wide range of adjunct clauses in Japanese, including 'because' clauses, 'when'-clauses, and 'if' clauses.

(49) a. Takasi-wa [Yosiko-ga zibun-o tazunete-ki-ta node] uresigat-ta.
Takasi-TOP Yosiko-NOM self-ACC visit-come-PST because happy-PST
'Takasi$_i$ was happy because Yosiko came to visit him$_i$.' (Sells 1987: 464).

b. Mari-ga zibun-ni mizu-o kake-ta toki, Takasi-wa hidoku odoroi-ta
Mary-NOM self-DAT water-ACC pour-PST when Takasi-TOP greatly be.surprised-PST
'Takasi$_i$ was surprised when Mary poured water on self$_i$.' (Nishigauchi 2014:165)

Refinement: One class of CP adjuncts that does license logophors is purposive clauses:

(50) Okon a-ma a-dibe mbaak Emem a-di-kit ímọ̀. (Ibibio)
Okon 3.SG-PST-3.SG-hide so.that Emem 3.SG-PROHIB-see LOG
'Okon$_i$ hid so that Emem would not find him$_i$' (see Clements 1975: 155, Culy 1994: 1071)

(51) Taroo-wa Hanako-ga zibun-ni kizuka-nai-yooni kakure-ta. (Japanese)
Taroo-TOP Hanako-NOM self-DAT notice-NEG-C hide-PST
'Taroo$_i$ hid so that Hanako would not notice self$_i$'

We assume that purposive clauses can be generated lower, inside VP, so that they can undergo OC, making lOp licit in Ibibio. (Evidence: purposive clauses are weaker islands for extraction than e.g. temporal adjuncts in Ibibio as in English.)

4.3 Matrix clauses

Japanese allows *zibun* in a root clause to take an antecedent in discourse in "free indirect discourse" contexts: (Oshima 2004: 12; see also Sells 1987: 455, Nishigauchi 2014: 172).

(52) Tokiko-wa aozame-ta. Masaki-wa zibun-o okizari-ni-site itte-simat-ta-no-da.
Tokiko-TOP pale-PST Masaki-TOP self-ACC leave.behind go-end.up-PST-EMPH-COP
'Tokiko$_i$ turned pale. Masaki had gone leaving self$_i$ behind.'

In contrast, *ímọ̀* is bad in matrix clauses, even in a "free indirect discourse" context.[3]

(53) *Idem a-maa-kpa Okon adi-kit ndise omo ke ngwet odo. Nso se ímọ̀ i-di-dokko eka ímọ̀?
body 3.SG-PST-3.SG-die Okon INF-see picture his in book the what C LOG 3.LOG-FUT-tell mother LOG
'Okon$_i$ was surprised to see his$_i$ picture in the book. What would he$_i$ tell his$_i$ mother?'

The languages also differ in whether *imo*/*zibun* can be in a matrix clause after "In X's opinion".

(54) a. Ke akikere Okon, Emem/*imo i-ma i-due . (Ibibio)
in thought Okon, Emem/*LOG 3s-past 3s-guilty
'In Okon's opinion, Emem/*he himself was guilty.'

b. Taroo-ni.yoruto zibun-wa waruku-nai-?(n(o)-da-)soo-da. (Japanese)
Taroo-according.to self-TOP bad-NEG-n(o)-da-Evid-COP
'According to Taroo, self is not bad.'

[3] It is, however, possible in modal subordination contexts like "Okon said that LOG cooked rice. Then LOG ate the rice" as long is "I ate rice" is also something Okon said. We leave the exact implementation open.

4.4 Theoretical and typological reflection

(55) a. If lOp does not undergo OC in accordance with the GOCS, it is ruled out. (=(44))
b. If zOp does not undergo OC, it is assigned a prominent [+empathetic] antecedent.

Note also that *zibun* in relative clauses and adjuncts takes a different range of antecedents than *zibun* in complements does (Kuno 1987, Oshima 2004): determined by prominence and empathy rather than thematic role.

(56) a. #Yuuzin-wa Hanako-kara [[Taroo-ga zibun-ni tutae-ta] nyuusu-o] kii-ta.
friend-TOP Hanako-from Taroo-NOM self-DAT tell-PST news-ACC hear-PST
'The friend heard from Hanako$_i$ [the news [zOp$*_i$ that Taro told self$*_i$]].'

b. sono hito-wa Hanako-ni Ziroo-ga zibun-ni nokosi-ta kotoba-o osiete-kure-ta.
that person-TOP Hanako-DAT Ziro-NOM self-DAT leave-PST words-ACC tell-BEN-PST
'That person$_i$ told Hanako$_k$ [the words [Ziroo left for self$_{i,k}$]].'

(57) #zibun-ga takarakuzi-ni atta-ta-toki, Hanako-wa yokuzitu Taroo-kara sore-o kii-ta/tutae-rare-ta
self-NOM lottery-DAT win-PST-when Hanako-TOP next.day Taro-from it-ACC heard/told-PASS
'When self$*_i$ won the lottery, Hanako {heard it from/was told it by} Taroo$_i$ the next day.'

Why does the generalization in (44) hold? We conjecture that:

(58) Only controllable null DPs in A-positions can undergo NOC.
Yes: PRO in English, zOp in Japanese
No: lOp in Ibibio (also the Op in upward C-agreement, Sp in indexical shift)

Then in the spirit of Charnavel (2019, 2020), LD anaphors should generally have a wider distribution: possible in relative clauses, adjunct clauses, (subject clauses), and matrix clauses. In contrast, logophoric pronouns should have a narrower distribution: possible only in complement clauses and low adjuncts.

This seems to be true for Korean, Japanese, French, and English as opposed to (e.g.) Ewe.
(A possible problem: Icelandic, based on Sells 1987)

We also predict no NOC in other sorts of null operator constructions hinted at in Section 0: e.g. in upward C-agreement constructions and indexical shift constructions. *This seems to be true…*

5. Conclusions

- Logophoric pronouns and LD anaphors behave very similarly in CP complements.
- Logophoric pronouns and LD anaphors behave quite differently in other contexts.
- The pattern of similarities and differences is induced by the OC signature, taken as an active principle of grammar at the heart of the theory of obligatory control.
- (More tentatively) the kind of control involved in these constructions analyzed as having a null operator can be unified with control of PRO in languages like English.