Toward a formal analysis of "proxy control"

We present evidence from dialects of German and Italian for a hitherto unobserved species of obligatory control (OC), which we term "proxy control" – this is illustrated in Italian (1):

(1) Maria$_i$ ha chiesto al sindaco$_j$ [di PRO$_{f(i)}$ poter manifestare in piazza].
Maria has asked to.the mayor C may$_{inf}$ rally$_{inf}$ in square
"Maria$_i$ asked [the mayor]$_j$ [$_{CP}$ (to be allowed PRO$_{f(i)}$ to rally in the square]."

In (1), Maria can, but need not, herself rally — she could e.g. be a union-rep asking the mayor *on behalf of* her union who will actually be rallying. Proxy control thus involves a set of individuals i asking on behalf of another set of individuals j to be allowed to do x; j is discourse-contextually related to i wrt. x: i.e. $j = f(i)$. The typological environments that license proxy control are a proper subset of those that license partial control. Given that partial control has been shown to be obligatory control (OC) (Landau, 2013, a.o.), we then predict that proxy control too should be a type of OC. This is confirmed: for the languages tested, structures like (1) yield sloppy readings under ellipsis (see (2)), and the controller must be local to the controlled clause — both diagnostics for OC under Landau (2013)'s "OC Signature":

(2) Maria$_i$ di Roma ha chiesto al sindaco$_j$ [di PRO$_{f(i)}$ poter manifestare in piazza] e Pietro$_k$
Maria of Rome has asked to.the mayor C may$_{inf}$ rally$_{inf}$ in square and Pietro
di Milano uguale ... [EC$_{f(k),*f(i)}$]..
of Milan same
"Maria$_i$ from Rome asked [the mayor]$_j$ [$_{CP}$ (to be allowed PRO$_{f(i)}$ to rally in the square] and Pietro$_k$ from Milan ~~asked [the mayor]$_l$ [$_{CP}$ (to be allowed) PRO$_{f(k)}$ to rally in the square]~~ too."

The OC fingerprint helps distinguish true proxy control from structures involving (i) NOC PRO/pro, attested in e.g. Hindi, Russian and potentially Tamil: these can yield strict readings under ellipsis; and (ii) "metonymic shift" ("Sue$_i$ plans [PRO$_{f(i)}$ to park on Broad Street]") (Nunberg, 1979; Jackendoff, 1992): unlike these, proxy control only obtains in a complex modal structure involving buletic + deontic predications.

A central, unresolved question with non-exhaustive OC is where in the grammar it should be modelled. Here, we present novel empirical evidence simultaneously for a syntactic treatment of partial control and against a syntactic treatment of proxy control. Floating quantifiers (FQ) in Italian show overt ϕ-agreement with subjects, thus can be used to diagnose subject ϕ-features. In (3), when the FQ bears M.PL agreement, a partial control reading ($i \rightarrow i+$) is available: i.e. the (male) teacher (i) asks permission for himself and the girls ($i+$) to have breakfast. But when the FQ bears F.PL, the partial control reading is excluded, yielding what looks like proxy control ($i \rightarrow f(i)$): i.e. the teacher asks permission for the girls alone (3):

(3) (Quando noi ragazz-e$_{f(i)}$ della 4F andiamo in gita), il nostro maestr-o$_i$ chiede alla
when we girls-F.PL of.the 4F go.1PL in excursion the our teacher-M.SG asks to.the
responsabilie [di EC$_{f(i)}$ poter fare colazione tutt-e nella stessa sala].
responsible C may$_{inf}$ do$_{inf}$ breakfast all-F.PL in.the same room
"(When [we girls]$_{f(i)}$ go on a school trip), [our teacher]$_i$ asks the person in charge for permission [to all EC$_{f(i)}$ have breakfast in the same room]." (Literal)

This first looks like strong evidence *for* a syntactic analysis of proxy (and partial) control, as it suggests that proxy control can feed FQ ϕ-agreement. But where the partial control structure (with M.PL FQ) allows only sloppy readings under ellipsis, thus bears the hallmarks of OC, (3) with the F.PL FQ can actually yield strict readings under ellipsis, a clear difference from (2). This data suggests that, *for a proxy reading*, the controllee's ϕ-features cannot *syntactically* differ from the controller's in an OC structure. As soon as such a syntactic difference is forced (as by the FQ in (3)), a proxy dependency based on OC is ruled out, and only an NOC analysis (mimicking true proxy, but presumably involving a different structure) is viable. Thus, while the dependency identifying controller and controllee might still be syntactic, the $i \rightarrow f(i)$ mapping in (1)/(2) must be semantic (vs. the $i \rightarrow i+$ partial control mapping, which itself seems to be modelled in syntax).

Analysis: Pearson (2016) develops a semantics for partial control by treating partial control predicates as attitude verbs that quantify over "centered worlds" (world-time-individual triples). The partial control relation obtains when the property expressed by the controlled complement applies, not directly to these coordinates, but to world-time-individual arguments that stand in a part-whole $extension$ relation with each of them. Pearson (2016, p. 702, Ex. 27) thus defines an extension as a 'part of' relation: simply broadening the notion of extension to be an $i \rightarrow f(i)$ relation, allows us to accurately capture the proxy control data introduced here. Proxy control structures in German and Italian allow the time-variable of the control complement to covary from that of the matrix; we thus base our lexical entry for a proxy control predicate on the lexical entry for a Candidate II-style partial-control predicate (in Pearson, 2016, Ex. 31, p. 703) where all the modal base coordinates may be potentially extended. Turning to the structure of proxy-control sentences, under the non-existent object control proxy reading for (1), 'ask' would have a purely buletic reading: i.e. Maria desires that the mayor bring about X, for X = mayor rallies in the square. In the actually attested (control-shifted) subject-control reading, Maria still desires that the mayor bring about X, but X = that the mayor allow Y (for $Y = f(Maria)$) to do Z ($Z = Y$ rallies in the square). Still, the true trigger for proxy control is not control-shift, but the buletic + deontic modal predication: e.g. in German/Italian, proxy control obtains with 'promise' with no control shift, but with the same complex modal reading described above. We thus propose that (1) has the complex buletic + deontic modal structure given in (4), and derive the denotations in (5)-(9):

(4) $[_{CP_{root}}$ Maria$_i$ asked$_{bul}$ $[_{CP_1}$ PRO$_{f(i)}$ BE-ALLOWED$_{deon}$ $[_{CP_2}$ PRO$_{f(i)}$ to rally]]]

(5) $[\![ask]\!]^{c,g}$ =
$\lambda P_{<e,<i,<s,t>>>} : P$ is deontic.$\lambda x_e \lambda t_i \lambda w_s . \forall < w'', t'', y > [< w'', t'', y > \in Bul_{x,w,t} \rightarrow \exists < w''', t''', z > [< w''', t''', z > is\ an\ extension\ of\ < w'', t'', y >\ \&\ P(z)(t''')(w''')]]$, where for any pair of world-time-individual triples $< w, t, x >$ and $< w'', t'', y >$, $< w'', t'', y >$ is an extension of $< w, t, x >$ iff for every α, β such that α is a coordinate of $< w, t, x >$ and β is a coordinate of $< w'', t'', y >$ of the same type as α, $\beta = f(\alpha)$, for f = a discourse-contextual function, and for $Bul_{\alpha_e,\beta_s,\gamma_i} = \{< {\beta_s}', {\gamma_i}', {\alpha_e}' >$: it is compatible with the fulfillment of α's desires in β at γ for α to be α' in β' and it is compatible with α's beliefs in β at γ for γ to be $\gamma'\}$.

(6) $[\![$BE-ALLOWED$]\!]^{c,g} = \lambda P_{<e,<i,<s,t>>>} \lambda x_e \lambda t_i \lambda w_s . \forall < w', t' > [< w', t' > \in Allowed_{x,w,t} \rightarrow P(x)(t')(w')]$ for $Allowed_{\alpha_e,\beta_s,\gamma_i} = \{< {\beta_s}', {\gamma_i}' >$: α does what α is allowed to do in β' at $\gamma'\}$

(7) $[\![CP_2]\!]^{c,g} = \lambda x_6 \lambda t_7 \lambda w_8 [PRO_6$ rallies in w_8 at $t_7]$

(8) $[\![CP_1]\!]^{c,g} = \lambda x_3 \lambda t_4 \lambda w_5 [\forall < w', t' > [< w', t' > \in Allowed_{x_3,w_5,t_4} \rightarrow [PRO_3$ rallies at t' in $w']]]$

(9) $[\![CP_{root}]\!]^{c,g} = \lambda t_i \lambda w_s . \forall < w'', t'', y > [< w'', t'', y > \in Bul_{maria,w,t} \rightarrow \exists < w''', t''', z > [< w''', t''', z >$ is an extension of $< w'', t'', y > \& \forall < w', t' > [< w', t' > \in Allowed_{z,w''',t'''} \rightarrow [z$ rallies at t' in $w']]]]$, for $extension$ and $Bul_{\alpha_e,\beta_s,\gamma_i}$ defined as in (5), & $Allowed_{\alpha_e,\beta_s,\gamma_i}$ as in (6).

(5) treats 'ask' as a predicate quantifying over an enriched buletic modal base, and presuppositionally restricts its complement to deontic predications (can be seen as a selectional restriction of sorts). Since BE-ALLOWED is non-attitudinal (can take inanimate subjects), its deontic modal base in (6) is not a set of centered worlds but of simple world-time pairs. The individual $extension$ function (which yields proxy and partial control) is only defined on enriched modal bases, so predict that the complement of BE-ALLOWED can only yield exhaustive OC. This is confirmed: as (4) shows, the reference of the lower PRO exhaustively matches that of the higher one: a partial ($f(i)+$) or proxy ($f(f(i))$) reference is ruled out. (7)-(9) are the result of step-wise function-application built on Pearson's assumption that non-exhaustively controlled PRO is an extension of a λ-abstracted (individual) variable quantified over by the immediately higher attitude-predicate (yielding OC). (9) asserts that given a time t_i and a world w_s, for every world-time-individual triple $< w'', t'', y >$ where it is compatible with Maria's desires for her to be y in w'' at t'', there is a corresponding world-time-individual triple $< w''', t''', z >$ such that $w''' = f(w'')$, $t''' = f(t'')$, and $z = f(y)$, and for every world-time pair $< w', t' >$ such that z does what z is allowed to do in w''' at t''', z rallies in t' at w' — the desired reading.

Selected Reference: Pearson, Hazel. 2016. The semantics of partial control. *NLLT* 34:691-738.