Chapter 10
Control of PRO

We have studied various syntactic phenomena that are related to ergativity in Tongan. It has been shown that ergativity plays a significant role not only in terms of morphology but also with regard to syntax. Our hypothesis that ERG is a structural case that is intrinsic to Agrs and is assigned to an NP in [Spec, Agrs] by means of feature checking has gained support from a substantial amount of evidence. However, the reason why we assume that the feature [ERG] is intrinsic to Agrs rather than to T has not been clarified. This assumption becomes particularly meaningful when we consider the phenomenon of control in Tongan and other ergative languages. It is generally assumed that PRO bears Null case. Null is a structural case intrinsic to the minimal Infl of infinitival clauses. This analysis in combination with the active Agr hypothesis incorrectly predicts that PRO can appear only as A in ergative languages. In an ergative system, Agrs is inert in intransitive constructions. Consequently, PRO (S) would fail to check off its case feature in intransitive constructions and so the derivation would crash. However, empirical evidence shows that PRO occurs both as A and S in Tongan as well as other ergative languages. In order to account for this fact, some modification is necessary. Thus, we propose that the feature [Null] is checked in [Spec, TP] instead of [Spec, Agrs]. Since T exists in intransitive constructions as well as transitive constructions, PRO, whether it is S or A, will

successfully check its case feature. In the current approach, [ERG] and [Null] are intrinsic to Agrs and [–tense] T, respectively. Why do we not assume that [ERG] is intrinsic to [+tense] T instead of Agrs? If we assume that [ERG] is intrinsic to [+tense] T, we would have to assume also that [ERG] is checked in [Spec, TP]. As a result, ERG would be available in intransitive constructions as well and this would undermine the idea of active Agr. The question of which Agr is active in a certain system would become irrelevant.

In this chapter, we will study some data concerning the control phenomenon in Tongan. §10.1 introduces the standard account of control, namely the Null case hypothesis proposed by Chomsky and Lasnik (1993). Some problems with the Null case approach will be noted: a) PRO in ergative languages, b) coexistence of PRO and overt NP's in apparently the same position, and c) PRO that seems to bear case other than Null. Bearing these problems in mind, we will put forth our alternative analysis in §10.2. Specifically, we will argue that a) PRO checks its case feature in [Spec, TP] by [–tense] T and that b) Tongan *ke*-clauses are on a par with what Raposo (1987) calls inflected infinitives, containing both [–tense] T and Agrs. The latter accounts for the puzzling fact that *ke*-clauses can have both PRO and overt NP's in the subject position; in *ke*-clauses, [–tense] T and Agrs license PRO and overt NP's, respectively. §10.3 is a study of Tongan data. Our data confirm that in Tongan PRO may occur both as A and S, but not O, as is generally assumed to be the case of PRO. It will be also shown that the empty object occurring in *ke*-clauses is not PRO but *pro*. This conclusion is based on the observation that the empty O necessarily has disjoint reference and an overt pronoun in the same position is interpreted as coreferential with

an argument of the matrix clause. The latter would not be permitted by the Avoid Pronoun Principle (Chomsky 1981) if the empty O were PRO. Finally, in §10.4, we will attempt to account for various problematic instances of control: in particular, coexistence of PRO and overt NP's found in Malagasy, Icelandic, and Modern Greek. We will also consider an alternative analysis proposed by Watanabe (1993a,b) and discuss why the current approach is preferable. The other major problem is PRO bearing case other than Null such as those found in Icelandic (Sigurđsson 1991) and Russian (Franks and Hornstein 1992). Although some questions have to be left open, overall it will be shown that the current analysis provides a simple and coherent account of control as part of universal grammar.

10.1 Control theory

The so-called control theory in the generative grammar was first proposed by Chomsky (1981). See (10.1) below. The empty category in the infinitival clause in (10.1) is obligatorily coreferential with the matrix subject *John*.

(10.1) John$_i$ wants [e_i to go].

Since this element can be neither a trace nor *pro*, it is assumed to be another type of empty category and labelled as PRO. The empty category PRO can be bound by an antecedent, as illustrated by (10.1) above. We refer to the relation between the antecedent and PRO as control: in (10.1), PRO is controlled by the matrix subject. The matrix object can also control PRO, as illustrated by (10.2) below.

(10.2) John persuaded Bill$_i$ [PRO$_i$ to come to the party].

It should be noted that in the above examples PRO is obligatorily controlled. On the other hand, there are some cases in which PRO need not be controlled. See (10.3) below.

(10.3) It is important [PRO to attend the meeting].

In (10.3), there is no antecedent for PRO. In such a case, PRO typically has arbitrary reference: it is interpreted as arbitrary *one* or generic *people*. PRO without a controller is specifically called PRO$_{arb}$. Note also that occurrence of PRO is restricted to the subject position of infinitival clauses. PRO is excluded from the object position of an infinitival clause or the subject position of a finite clause. See (10.4) below.

(10.4) a. *John$_i$ wants [Mary to like PRO$_i$].

b. *John$_i$ wants [that PRO$_i$ goes].

Chomsky (1981) observed that PRO appears to be both [+anaphor] and [+pronominal] in terms of the binding principle.[1] For instance, in (10.1) and (10.2) above, PRO is necessarily coindexed with a matrix argument, i.e., it must be bound by an antecedent. On the other hand, in (10.3), PRO does not have any antecedent and have arbitrary reference. In this case, PRO is free, like a pronominal. However, if PRO is both [+anaphor] and [+pronominal], it must be both bound and unbound in its governing category, which is a contradiction. As a way out of this puzzling situation, Chomsky (1981) proposed that PRO must be ungoverned because the binding theory is relevant only if there is a governing category. This also explains why PRO cannot occur in the object position and the subject position of a finite clause. This claim, the PRO

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[1] Binding Principles (Chomsky 1981:188)
(A) An anaphor is bound in its governing category.
(B) A pronominal is free in its governing category.
(C) An R-expression is free.

theorem, however, was challenged by a number of other theorists (cf. Manzini 1983, Hornstein and Lightfoot 1987, Sigurđsson 1991, Franks and Hornstein 1992 among others). Some linguists even question the existence of the empty category PRO itself. For example, Huang (1984, 1989) and Borer (1989) argue that PRO is merely a special instance of *pro*. The intention of this argument is to integrate the control theory into some more general component of the universal grammar. Similarly, O'Neil (1995) and Hornstein (1999) propose that PRO is an instance of NP-trace.[2]

10.1.1 The Null case hypothesis

The standard theory, on which the current study is based, maintains the view that the above examples involve an independent class of empty category PRO. However, PRO is considered in terms of case and not in terms of government. Note that the theory of control must account for the following properties of PRO: a) PRO can occur only in the subject position of infinitival clauses and b) PRO and NOM-marked arguments are in complementary distribution. We assume, following Chomsky and Lasnik (1993), that PRO bears Null case. Null case is a structural case and its feature is intrinsic to Infl of infinitival clauses. Bobaljik (1993) paraphrases this in terms of the feature checking theory (Chomsky 1991, 1993) i.e. the feature [Null] is checked in [Spec, Agrs] of infinitival clauses. Agrs of infinitives is defective in that it fails to check [NOM/ERG] but instead checks [Null]. The Null case hypothesis also accounts for the distribution of PRO. First, PRO can occur only in the subject position of infinitival clauses because only Infl of infinitival clauses can check the feature [Null]. Second,

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[2] To be precise, Hornstein (1999) argues that PRO of obligatory control is identical to NP-trace while that of non-obligatory control is equivalent to *pro*.

NOM-marked arguments are excluded from the same position as the feature [NOM] cannot be checked there. Reasonably well accepted as it is, the Null case hypothesis is not free from problems. First, in the active Agr approach, this analysis incorrectly predicts that PRO cannot occur as S in ergative languages because Agrs is inert in intransitive constructions. Second, there is evidence that in some cases PRO bears NOM rather than Null (Sigurđsson 1991, Franks and Hornstein 1992). Third, in some languages PRO and NOM-marked arguments can appear in the same position (Sigurđsson 1991, Watanabe 1993a, b). We will discuss each of these problems below.

10.1.2 Semantic approach

It should be noted that many linguists have argued that control is fundamentally constrained by semantics rather than syntax. For example, Sag and Pollard (1991) argue that control verbs can be classified into three kinds, COMMITMENT-type (e.g., promise, try, intend, etc.), INFLUENCE-type (e.g., persuade, order, etc.), and ORIENTATION-type (want, need, hate, etc.) and show that the identity of the controller is predictable from the semantic type of the matrix verb, always corresponding to the commitor, influenced participant, or experiencer. In his study of the Tagalog control constructions, Kroeger (1993:76) postulates the following two universal semantic constraints on control: a) the complement must express a volitional action and b) the controllee must be the Actor of that action. These control constraints predict that the controllee cannot be a direct object.

Kroeger (1993) argues that there are two different kinds of control relation in Tagalog: one involving a semantic identification of the controller with the controllee and the

other involving a syntactic unification of the two.[3] Kroeger's assumption is that control is universally semantically constrained, but is also subject to some language-specific syntactic constraints. In Tagalog, control verbs take an action-type complement, in which the Actor variable (i.e. the controllee) is bound by the semantically determined argument of the matrix verb. Thus, the argument structure of "John persuaded Mary to eat Brussels sprouts" is as follows.

(10.5) persuade <John, Mary$_i$, eat <PRO$_i$, Brussels sprouts>

There is, however, an exception: some ORIENTATION-type verbs allow the controllee to be a non-Actor subject (i.e., the NOM-marked argument).[4] In this type of control construction, the controller must also be the subject. Kroeger (1993) assumes that the verbs of this type take an event-type complement rather than an action-type complement and argues that these counterexamples are due to the following language-specific syntactic constraint: the controller and the controllee must agree in case (i.e. NOM) and grammatical relation (i.e. subject). Thus, the phrase structure of a sentence "Maria insisted on being given money by John" is as follows.

(10.6) insist Maria Ø   give *ec* money John
       Pred SUBJ Comp PRED SUBJ OBJ ACTOR

Here, control is essentially constrained by syntax. Kroeger (1993) argues that because this is a syntactic control, the semantic constraints does not have any effect. Hence, the embedded verb can be not only in volitive mood, but also in non-volitive mood. It should be noted that the ORIENTATION-type verbs may also appear in the normal

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[3] Bresnan (1982) calls the former anaphoric control and the latter, functional control.

[4] Note that in Tagalog the subject does not always coincide with the NOM-marked argument. For this reason, it is sometimes claimed that the NOM-marker, *-ang* is a topic marker rather than the subject marker. However, Kroeger argues that the NOM-marker *-ang* marks the grammatical subject.

control construction, in which the controllee is the Actor. Note that these verbs may also appear in the normal (semantic) control constructions. When they appear in the normal control constructions, these constructions are subject to the above-mentioned semantic constraints. Based on this observation, Kroeger (1993) concludes that there are two kinds of control and that the Tagalog ORIENTATION-type verbs allow both. The semantic account of control sketched above explains the fact that the controllee cannot be an object. Kroeger (1993) suggests that the only syntactic constraint on control that is universal is that the controllee must be terms (i.e. the direct arguments of a verb) and all the rest is language-specifically determined. Acknowledging that this type of semantic account consistently accounts for various control facts, in the following discussion, we will seek a syntactic account of control. One strong motivation for the syntactic approach is that the null argument (i.e. the controllee) cannot appear in the embedded subject position of a tensed clause even if the complement expresses a volitional action. In other words, we would like to know why the sentence "John promised that PRO will come" cannot have the semantic representation (10.7) below.

(10.7) a. John$_i$ promised that PRO$_i$ would come.

b. promise <John$_i$, come <PRO$_i$>>

One explanation is to assume that *to*-infinitives are action-type complements and *that*-clauses are event-type complements and that the English control verbs can only take action-type complements. However, this begs a question: what makes *to*-infinitives action-type and *that*-clauses event-type? One noticeable difference is that the former seems to lack tense, which we assume is responsible for licensing PRO.

Thus, we will take a syntactic approach to the control constructions. We will seek syntactic licensing conditions on the controllee. In doing so, we will assume that following Chomsky and Lasnik (1993), the key factor is case: namely, the controllee (i.e. PRO) must bear Null case and the feature of Null case cannot be checked in finite clauses. In contrast to Kroeger's approach, which assumes that control is fundamentally a semantic phenomenon, but is also subject to some language-specific syntactic constraints, we will consider control essentially a syntactic phenomenon, which is sometimes subject to some idiosyncratic semantic constraints.[5]

10.1.3 PRO in ergative languages

The Null case hypothesis stipulates that PRO checks its case feature [Null] by T. This explains the distribution of PRO in accusative languages. Both A and S check their case feature in [Spec, Agrs]. Therefore, PRO can be either A or S, but not O, as the latter cannot move to [Spec, Agrs]. However, with regard to ergative languages, the Null case analysis predicts incorrectly that PRO can occur only as A. According to the active Agr hypothesis discussed in Chapter 4, it is assumed that only Agro can be active in intransitive constructions in ergative languages. Consequently, S checks its case feature in [Spec, Agro] and not [Spec, Agrs]. Since Agrs is inert, PRO (S) would fail to check its case feature and the derivation would crash. However, this prediction is wrong. For example, in Tongan PRO can be S as well as A. See (10.8) below.

(10.8) a. 'Oku loto 'a Sione [ke PRO 'alu].
        Prs want ABS Sione to   go
      "Sione wants to go."

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[5] For example, we will see below how semantics affects the distribution of PRO when the matrix verb belongs to the COMMITMENT-type.

(10.8) b. 'Oku loto 'a Sione [ke PRO kai 'a e ika].
      Prs want ABS Sione to eat ABS def fish
      "Sione wants to eat the fish."

    c. *'Oku loto 'a Sione [ke 'ofa'i 'e Mele PRO].
       Prs want ABS Sione to love ERG Mele
       "Sione wants Mele to love (him)."

Moreover, as illustrated by (10.8c), PRO cannot occur as O.

This subject-oriented property of control is observed in various so-called ergative languages. Anderson (1976), for example, notes that only the subject NP in the lower clause is deleted by the operation of Equi-NP deletion.[6] Dixon (1979, 1994) argues that since the subject oriented property of control phenomenon is universal, it should not be regarded as a sign of accusativity of a particular language. Dixon points out that imperatives cross-linguistically have a second person pronoun as (stated or understood) S or A. This is because the addressee is assumed to be the performer of the instruction. Dixon extends this argument to the verbs such as "order" and "tell". These verbs are regarded as "indirect imperatives" and therefore imply that the Goal argument is the performer of the instruction referred to by the embedded verb. According to Dixon, another class of verbs that cross-linguistically involve control includes "begin", "finish", "can", "must", and "try". These verbs, when occurring as matrix verbs, share the subject of the embedded clause.[7] Bittner and Hale (1996b) also observe the fact that control treats S and A as equivalents, excluding O. Bittner and

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[6] Anderson (1976) argues that the notion "subject" covers S and A in ergative languages, as opposed to the views that there are no grammatical relations such as "subject" or "object" in ergative languages, or that S and O are "subjects" in an ergative language (Hale 1970, Keenan 1976b, Marantz 1984). He cites some examples from Basque to support his argument. However, it is not quite appropriate because Basque, which shows an ergative case marking, is known to be syntactically accusative (Comrie 1989, Dixon 1994).

Hale argue that syntactic ergativity is respected in phenomena that involve A-bar positions. Control, on the other hand, involves A-positions, namely, the subject position. Hence, ergativity does not play a role.[8]

The Null case hypothesis outlined above cannot explain this subject-oriented nature of PRO. In order for S to check its case feature [Null], we need to stipulate either a) that Agrs can be activated in an intransitive construction if it contains PRO or b) that [Null] can be checked in both Agrs and Agro so that PRO (A) checks its case feature in [Spec, Agrs] and PRO (S) in [Spec, Agro]. We cannot assume the former, as it would undermine the fundamental assumption of the active Agr approach. The latter alternative is also highly problematic because it also necessarily assumes that [Null] is intrinsic not only to T but also to V. Furthermore, if V can check off [Null], another question arises: namely, what prevents PRO from occurring as O?

Facing these problems, we have proposed an alternative case assignment mechanism in Chapter 4 (§4.4). We assume that case features are intrinsic to Agr's and not to T and V: Agrs has [T-case] and Agro, [V-case]. T-case is equivalent to NOM/ERG and V-case is a general label for ACC/ABS. On the other hand, T and V have an associated case feature just like NP's. It is also assumed that the case feature of an NP is unspecified. As for Null case, we argue that the feature [Null] is intrinsic to [–tense] T

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[7]As to the latter class of control verbs, Dixon (1979) does not provide any argument concerning why these verbs also treat S and A as equivalents, rather than S and O.

[8] Bittner and Hale (1996b) propose a model based on their notions "raising" and "transparent" ergative languages and argue that syntactic ergativity is found in "raising" ergative languages, in which O ends up occupying a higher position than A in the tree structure, due to the raising. The position in the tree structure determines which argument overrides the other in A-bar dependent syntactic operations. See Bittner and Hale (1996b) for details.

and PRO has an associated case feature specified for [Null]. In short, we assume the

following features.

(10.9) Case features
      Agr   [T-case]
      Agr   [V-case]
      [–tense] T   [Null]

      Associated case features
      T   [T-case]
      V   [V-case]
      NP   [case]
      PRO   [Null]

Another crucial assumption is that associate case features must be checked and

deleted. We assume that associated case features of T and V are checked when they

adjoin to Agrs and Agro, respectively. Associate case features of an NP are checked in

a Spec-head configuration with Agr. Specifically, an NP in [Spec, Agro] will receive

ABS and one in [Spec, Agrs], ERG, as a result of checking its case feature. Due to the

active Agr hypothesis, S moves up to [Spec, Agro] and checks its case feature there.

How about PRO? We cannot assume that PRO checks its case feature in [Spec, Agrs]

for the reasons mentioned above. Thus, we propose an alternative analysis: PRO

checks its case feature in [Spec, TP]. Note that in our analysis [Null] is intrinsic to [–

tense] T. Thus, PRO can check its case feature in a Spec-head configuration with T,

without involving Agr. Note also that crucially, TP exists in both intransitive and

transitive constructions. In this view, prohibition of PRO being generated as O can be

explained as follows. In a transitive construction, O cannot move into [Spec, TP]

skipping [Spec, Agro], due to the Shortest Move constraint (Chomsky 1991, 1993).

On the other hand, A must move to [Spec, Agrs] via [Spec, TP] for the same reason.

Thus, [Spec, TP] is already occupied by a trace of A and no longer available for O to

move into.   As a result, PRO (O) cannot check its [Null] case feature and the derivation crashes.

10.1.4 Case-marked PRO

Apart from the problem concerning ergative case marking, some weakness of the Null case hypothesis has been pointed out in the literature. It has been shown that there are some instances in which PRO arguably bears a structural case other than Null. For example, Sigurđsson (1991) argues that PRO bears NOM in sentences like (10.10) below.

(10.10) Icelandic (Sigurđsson 1991:337)

　　Strákana　　langaði til [að PRO komast allir　　í veisluna].
　　the boys(ACC) wanted for to　　get all(NOM.pl.m) to the party
　　"The boys all wanted to get to the party."

In (10.10), the agreement on the quantifier shows that the subject with which it agrees has the phi-features [plural, masculine] and the case feature [NOM]. It cannot be the matrix subject, *strákana* that triggers the agreement because it bears ACC. Consequently, we assume that the case of PRO in (10.10) is NOM, presumably by checking its case feature in [Spec, Agrs] of the embedded clause. As NOM is arguably a structural case, this goes against the Null case hypothesis, which assumes that T of infinitives has [Null], but not [NOM].

Another counterexample is found in Russian. Franks and Hornstein (1992) argue that in Russian, PRO must be governed in some cases. In Russian, secondary predicates, *odin* ("alone") and *sam* ("oneself"), are required to agree with the NP they are modifying. When *odin/sam* modifies PRO, it sometimes shows NOM agreement and

otherwise DAT agreement. See (10.11) below.

(10.11) Russian (Franks and Hornstein 1992:6-7)

      a. Nadja ljubit PRO gotovit' sama.
        (NOM) likes   to-cook herself (NOM)
        "Nadja likes to cook herself."

      b. Ljuda priexala PRO pokupat' maslo sama.
        (NOM) came   to-buy butter herself(NOM)
        "Ljuda came to buy the butter herself."

      c. PRO pojti tuda odnomu rasstroilo by menja.
        to-go there alone(DAT) upset MODAL I (ACC)
        "It would upset me to go there alone."

      d. Ivan dumaet čto PRO pouti domoj odnomu važno.
        (NOM) thinks that   to-go home alone(DAT) important
        "Ivan thinks that it is important to go home alone."

Franks and Hornstein (1992) argue that PRO can trigger NOM agreement only if it is governed by the antecedent, as illustrated by (10.11a,b). On the other hand, if PRO is not governed, then *odin/sam* will show DAT agreement. In (10.8c), there is no antecedent that can control PRO. In (10.11d), government by the matrix subject is blocked by the complementiser *čto*. In other words, DAT agreement can be considered as default. What is problematic about this agreement is that *odin* and *sam* agree with PRO in case. According to the Null case hypothesis, the case feature of PRO is [Null] and nothing else. Therefore, *odin* and *sam*, if they agree with PRO in case, are expected to appear in Null form (whatever that form turns out to be). Contrary to this prediction, in (10.11a, b) PRO induces NOM agreement.[9, 10]

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[9] Incidentally, this observation is similar to that of Sigurđsson (1991) regarding the Icelandic PRO. As illustrated by (10.10), PRO in Icelandic also seems to bear NOM case feature.

[10] Note that Franks and Hornstein (1992) do not claim that the governed PRO's in Russian are also case-marked. Instead, they stipulate that Russian PRO's can be "case-active", that is, they can transmit case, but crucially not case-marked. Presumably, PRO transmits NOM case from the matrix subject to the embedded *odin/sam*. It seems that Franks and Hornstein rely on this stipulation for the sake of retaining the assumption that PRO is case-less. This "case-active" assumption, however, becomes

10.1.5 Coexistence of PRO and overt NP's

Another challenge for the Null case approach is instances where an overt NP is allowed to appear in the subject position of infinitives, i.e., the position which is assumed to be reserved exclusively for PRO. Such a phenomenon is found in Malagasy (Keenan 1976a, Randriamasimanana 1986, 1998), Icelandic (Sigurđsson 1991), and Balkan languages such as Modern Greek and Romanian (Watanabe 1993a,b).

Malagasy is a Malayo-Polynesian language with an accusative case marking system. Malagasy has three types of subordinate clauses introduced by *ny*, zero-complementiser, and *fa*, respectively. Both *ny*-clauses and zero-clauses allow only PRO to appear in the subject position.[11] However, PRO as well as overt NP's can appear in *fa*-clauses. See (10.12) below.

(10.12) Malagasy[12]

    a. N-ilaza i Paoly [fa h-andeha PRO].
      Pst-say NOM Paul fa Fut-come
     "Paul said that (he) would come."

    b. N-ilaza i Paoly [fa h-andeha i Jaona].
      Pst-say NOM Paul fa Fut-come NOM John
     "Paul said that John would come."

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irrelevant if one is to take the Null case hypothesis. Since PRO is assigned Null case, it *is* case-marked and therefore, cannot involve another case. Either way, their Russian data raise a significant problem.

[11] *Ny*-clauses involve control by subject and *zero*-clauses, control by object (Randriamasimanana 1986). However, it should be noted that complementisers *ny* and *fa* can optionally be dropped and consequently, *zero*-clauses apparently can be used in all environments. We distinguish such clauses without an overt complementiser from those containing *zero* complementiser. The former arises when the complementiser *ny/fa* is not overtly realised. Clauses without an overt complementiser demonstrate properties similar to those of *ny*-clauses when occurring in control-by-subject construction. Similarly, they behave like *fa*-clauses and not like *zero*-clauses when occurring in an environment in which *fa*-clauses are used. Therefore, we consider that zero-clauses are used exclusively in control-by-object constructions.

[12] All the examples are provided by Charles Randriamasimanana (p.c.) unless indicated otherwise.

Although Malagasy freely allows the deletion of understood arguments, the empty

subject of sentences like (10.12a) cannot be an instance of such a deletion. For one

thing, if it were a case of argument deletion, any argument regardless of its type would

be able to appear as an empty element. However, this is not the case. As (10.13) below

illustrates, the embedded O cannot be the empty element; a result naturally expected if

one is to assume this type of construction to be an instance of control.

(10.13) Malagasy (Keenan 1976a: 277)

M-ihevitra Rabe$_i$ [fa m-itady azy$_i$/*PRO Rasoa].
Prs-think Rabe fa Prs-look-for him   Rasoa
"Rabe thinks that Rasoa is looking for *(him)."

Secondly, Keenan (1976a) notes that the embedded clause may have an overt pronoun

as subject and that in such a case, the pronominal subject has a disjoint reference from

the matrix subject. The latter observation is important in two respects. First, it

suggests that the empty element in the embedded subject position is not the deleted

argument. Since the deletion of arguments is optional, a pronoun should also be

allowed in the same position and it should be coreferential with the matrix subject.

Second, the fact that a pronoun of disjoint reference can appear in the embedded

subject position indicates that NOM can be checked there. This in turn suggests that

PRO in (10.13a) is in a position in which NOM is checked.

Balkan languages such as Modern Greek and Romanian use subjunctive clauses in

constructions in which Romance and Germanic languages use infinitives. For

example, in Modern Greek, the verb "want" takes a subjunctive complement

introduced by an element *na*. *Na*-complements, being subjunctive, may contain overt

subjects as well as *pro*. See (10.14) below.

(10.14) Modern Greek (Terzi 1992 cited by Watanabe 1993a: 285)

    O Yannis theli na doulevo mazi sou.
    John wants subj-prt work-1s with you
    "John wants me to work with you."

In (10.14), the embedded *na*-clause contains *pro* in the subject position as the agreement on the embedded verb *doulevo* indicates. What raises problem is that *na*-complements also allow PRO in the subject position.

(10.15) Modern Greek (Terzi 1992 cited by Watanabe 1993a: 286)

    $Pion_i$ nervriazi to e_i na   pleni to aftokinito tou t_i?
    whom upsets the subj-prt washes the   car his
    "Who_i does washing his_i car upset?"

Watanabe (1993a) assumes, following Terzi (1992), that the empty subject of the *na*-clause in (10.15) is PRO, and not *pro*, because the weak crossover effect is not observed in (10.15). As noted by Higginbotham (1980), PRO escapes the weak crossover violation. It should be mentioned that with the indicative *oti*-clause, the sentence is ruled out due to the weak crossover violation because indicatives can only have *pro* but not PRO as the subject. This is problematic because subjunctives, being finite by definition, should not permit PRO as their subjects. T of subjunctives is assumed to check NOM (in accusative languages). This means that it bears NOM case feature and not Null case feature. Consequently, PRO should not be licensed, as its Null case feature will never be able to be checked off.[13]

These data show that in certain constructions, PRO and overt NP's are allowed to appear in the same position. If we are to assume the Null case hypothesis, we need to account for these apparently contradictory examples. We will return to this point

shortly.

10.2 Tongan *ke*-clauses

As discussed in Chapter 7, Tongan *ke*-clauses demonstrate some properties of infinitives: a) they do not contain a tense marker and b) they frequently contain a null subject, which could not be either *pro* or trace. As for the latter, we assume that this null element is PRO. See (10.16) below.

(10.16) a. 'Oku loto 'a Sione [ke 'alu PRO].
     Prs want ABS Sione to go
     "Sione wants to go."

    b. *'Oku loto *pro* [ke 'alu 'a Sione].
     Prs want   to go ABS Sione

    c. 'Oku ou$_i$ loto [ke kai PRO$_i$ 'a e ika].
     Prs 1.s.want to eat   ABS def fish
     "I want to eat the fish."

As illustrated by (10.16b), *loto* cannot have an expletive subject. This denies the possibility of the empty element in (10.16a) being a NP-trace. On the other hand, (10.16c) shows that the empty element in the *ke*-clause cannot be *pro*: as discussed in Chapter 3, the use of *pro* is restricted to third person singular in Tongan. Consequently, the empty element in (10.16c) cannot be coreferential with the matrix subject, which is first person singular, if it were *pro*.[14]

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[13] Watanabe (1993a,b)'s proposal and its implications will be discussed in §10.4 below.

[14] As Gillian Ramchand and Lisa Travis (p.c.) point out, this restriction on coreference does not necessarily argue for the existence of PRO. In Chapter 5, we argued that the empty category in the *pea*-construction is a special kind of *pro* (i.e., co-*pro*) that does not have to be [3.s.]. One may wonder why the empty category in (10.16c) cannot also be interpreted as an instance of co-*pro*. However, the empty category in (10.16c) is different from the co-*pro* in the following respects. First, we argued that a co-*pro*

On the other hand, as mentioned earlier, *ke*-clauses may also contain an overt subject.

See (10.17) below.

(10.17) a. 'Oku loto 'a Sione [ke 'alu 'a Mele].
　　　　　 Prs want ABS Sione to go ABS Mele
　　　　"Sione wants Mele to go."

　　　b. Na'e feinga 'a Mele [ke tapuni'i 'e Pita 'a e matapaa].
　　　　 Pst try ABS Mele to close ERG Pita ABS def window
　　　　"Mele tried for Pita to close the door."

Sentences in (10.17) are problematic in that the overt subject NP appears in the presumably infinitival *ke*-clauses. According to the Null case hypothesis, T of *ke*-clauses can only assign Null case. Consequently, sentences in (10.17) should be ruled out. Nonetheless, they are perfectly grammatical. This suggests that *ke*-infinitives can also assign ERG.[15, 16]

Given the two contradictory properties of *ke*-clauses, we propose that *ke*-clauses are on a par with what Raposo (1987) calls inflected infinitives in European Portuguese

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must be licensed by means of the feature identification, including the case feature. This constraint should rule out (10.16c) because a co-*pro* with the feature [ERG] cannot be coreferential with a matrix argument that has the feature [ABS]. Secondly, as shown in Chapter 5, a co-*pro* can freely be replaced with an overt pronoun. However, as we will see shortly, the empty category in (10.16a, c) cannot be replaced with an overt pronoun. Thus, the empty category in (10.16a, c) is different from co-*pro*. Although it is still possible to assume that the empty pronoun is another kind of *pro*, which appears only in the subject position of *ke*-clauses and does not have to be third person singular, this characterisation is incidentally the same as that of PRO: its distribution is restricted to the subject position of apparently non-finite clauses. Therefore, instead of assuming it to be another type of *pro*, we will call it PRO in the following discussion.

[15] Niuean, another language that belongs to the Tongic subgroup, also has *ke*-clauses, which exhibit similar properties (Levin and Massam 1986).

[16] One may wonder whether PRO actually bears a structural case other than Null, in a way similar to Icelandic NOM-marked PRO: specifically, PRO (S) bears ABS and PRO (A), ERG. However, this speculation is not borne out. PRO is not permitted in the object position although supposedly it is able to check its case feature in [Spec, Agro].
(i) 'Oku loto 'a Sione [ke 'ofa'i 'e Mele PRO].
　　 Prs want ABS Sione to love ERG Mele
　　"Sione wants Mele to love (him)."

(see Chapter 7, §7.4.4). Adapting Raposo's proposal, we assume that *ke*-clauses contain not only [–tense] T but also Agrs. We propose that [–tense] T is a kind of tense anaphora, which is phonologically realised in Tongan as *ke*. With regard to case, we assume that [–tense] T bears a case feature [Null] and Agrs, [T-case] (i.e., ERG/NOM).[17] In this view, PRO can check its case feature in [Spec, TP] and so can an overt NP in [Spec, Agrs].

A question may arise with regard to case feature checking. When an overt NP checks its case feature by Agrs, the case feature of T will be left unchecked. Similarly, when a *ke*-clause contains a PRO subject, then the case feature of Agrs will necessarily remain unchecked. What about these unchecked case features? Here our assumption that associated case features must be checked off becomes significant. We assume that a derivation crashes if an associated case feature is left unchecked. Let us paraphrase it as follows: a derivation converges as long as all the associated case features are checked off. This in turn means that intrinsic case features need not be checked. Suppose that the function of the case features of Agrs, Agro and [–tense] T is to check off associated case features. These features are there to license other elements so that the derivation would not crash. This obviously is a divergence from the standard account. Nevertheless, this modification does not violate the fundamental assumption of the minimalist approach proposed by Chomsky (1991, 1993): movement of an element is driven by a self-serving purpose (Greed). In the following study of control phenomenon in Tongan, we will assume the case checking mechanism described

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[17] Note that Raposo's (1987) proposal is based on the GB approach. Thus, it is proposed that in the absence of [+tense] T, Agr in inflected infinitives inherits case-assigning ability from the matrix Infl.

above.

10.3 Control in Tongan

In this section we will study the data concerning control constructions in Tongan. As mentioned in the previous sections, we assume that the phenomenon of control necessarily involves an empty category PRO. It is also assumed that PRO characteristically bears Null case. As to the feature checking of Null case, we assume that it is checked by [–tense] T in [Spec, TP]. We also assume that *ke*-clauses are inflected infinitives, containing both [–tense] T and Agrs.

There are roughly four types of control constructions in Tongan: control by subject, obligatory control by object, obligatory control by OBL-argument, and non-obligatory control (i.e., PRO_{arb}). We will first look at constructions involving control by full NP's (§10.3.1). Our data show that PRO occurs as A as well as S, but never as O. We will also discuss what gives rise to the subject-oriented nature of PRO. In §10.3.2, we will consider the data concerning control by pronominal arguments. It will be shown that the Tongan control constructions respect ergativity as long as the controller is a pronominal argument: PRO can occur as A but not as S or O.

10.3.1 Control by full NP's

Let us start with obligatory control by the subject. These include verbs like *loto* ("want"), *feinga* ("try") and *manatu'i* ("remember"). The first two take an ABS-

marked subject and a *ke*-clause complement. *Manatu'i*-type verbs take an ERG-marked subject and either a NP, tensed clause, or *ke*-clause as a complement. First, consider *loto*-type verbs. As illustrated by (10.18) below, *ke*-clauses may contain either PRO or an overt NP as a subject. Note also that PRO can occur as either S or A

(10.18) a. 'Oku loto 'a Sione [ke 'alu PRO].
      Prs want ABS Sione to go
      "Sione wants to go."

    b. 'Oku loto 'a Sione [ke 'alu 'a Mele].
      Prs want ABS Sione ke go ABS Mele
      "Sione wants Mele to go."

    c. 'Oku loto 'a Sione [ke fakatau PRO 'a e me'alele].[18]
      Prs want ABS Sione to buy   ABS def car
      "Sione wants to buy the car."

    d. 'Oku loto 'a Sione [ke fakatau 'e Mele 'a e me'alele].
      Prs want ABS Sione to buy ERG Mele ABS def car
      "Sione wants Mele to buy the car."

Mantu'i-type verbs show a similar property: PRO can occur both as S and A. See (10.19) below. [19]

(10.19) a. Na'e manatu'i 'e Sione [ke 'alu PRO ki kolo].
      Pst remember ERG Sione to go   to town
      "Sione remembered to go to town."

    b. Na'e manatu'i 'e Sione [ke tapuni'i PRO 'a e matapaa].
      Pst remember ERG Sione to close   ABS def door
      "Sione remembered to close the door."

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[18] (10.18c) above can also mean "Sione$_i$ wants him$_j$ to buy the car", with the empty element referring to someone whose reference is established in the context. We assume that this interpretation is available only if the empty element is *pro*, just like the overt NP *Mele* in (10.18d). We assume that the empty element is PRO and not *pro* in (10.18a) and (10.18c) because replacement of the empty element with an overt pronoun will yield ungrammaticality. If an overt pronoun occurs in the embedded subject position of these sentences, that pronoun cannot be coreferential with the matrix subject.

[19] Note that the matrix clause does not contain an argument marked in ABS. This suggests that ABS has been assigned to the sentential complement *ke*-clause (cf. Levin and Massam 1986). Alternatively, we may assume that there is a null expletive in the matrix object position, which in turn is coindexed with the sentential argument. We assume the latter, as it is generally held that sentential arguments are not case-marked.

However, *manatu'i*-type verbs do not allow an overt NP to appear in the subject position of *ke*-clauses.

(10.20) *Na'e manatu'i 'e Sione [ke tapuni'i 'e Mele 'a e matapaa].
   Pst remember ERG Sione ke close ERG Mele ABS def door
   Intended meaning: Sione remembered for Mele to close the door."

The fact that sentences like (10.20) are ungrammatical argues against the possibility that the empty subject in the embedded clause is *pro*. If it were *pro*, then, (10. 20) would be grammatical. This analysis receives further support from the following data. (10.21) shows that an overt pronoun is not allowed in the embedded *ke*-clause either.

(10.21) *Na'e manatu'i 'e Sione$_i$ [ke ne$_i$ tapuni'i 'a e matapaa].
   Pst remember ERG Sione ke 3.s. close ABS def door
   "Sione reminded him(self) to close the door."

(10.21) is ruled out even if coreference is intended between the clitic pronoun *ne* with the matrix subject *Sione*. These data provide strong evidence for the existence of PRO in these constructions.

Why do *manatu'i*-type verbs disallow overt subjects in *ke*-clauses? Does this mean that *ke*-clause complements of *manatu'i*-type verbs are not inflected infinitives but pure infinitives that do not contain Agrs? The answer is no because an overt NP cannot occur not only A but also S in the *ke*-clause complements of *manatu'i*-type verbs. See (10.22) below.

(10.22) *Na'e manatu'i 'e Sione [ke 'alu 'a Mele].
   Pst remember ERG Sione to go ABS Mele
   "Sione reminded Mele to go."

In order to rule out (10.22), we have to assume that *ke*-clauses lack Agro as well. However, this is an incorrect speculation because *ke*-clauses can contain an ABS-marked object, as illustrated by (10.19b) above. Thus, an overt NP is banned in the

subject position of *ke*-clauses in these constructions not because it fails to check its

case. There must be some other reason. Note that the use of *ke*-clause is restricted to

the meaning "remember to do". Therefore, (10.19b) cannot mean "Sione remembered

closing the door". The complement must bfe a tensed clause in order to mean

"remember doing", as illustrated by (10.23) below.

(10.23) 'Oku manatu'i 'e Sione_i [na'a ne _i tapuni'i 'a e matapaa].
      Prs remember ERG Sione Pst 3.s. close ABS def window
     "Sione remembers that he (himself) closed the door."

In other words, *manatu'i* when used with a *ke*-clause complement implies an

order/duty. It can only mean "remember to do" and never "remember doing".

Therefore, the performer of this duty is necessarily the experiencer of the

remembering. Consequently, *ke*-clause complements of *manatu'i*-type verbs

necessarily contain PRO that is obligatorily controlled by the matrix subject. Thus, we

conclude that sentences like (10.23) are ungrammatical due to the semantic reason,

and not because an overt NP fails to check its case feature within the *ke*-clause.

Subject to a similar restriction are *kole*-type verbs. Verbs like *kole* ("to request") and

tala ("to tell") are three-place predicates taking an ERG-marked subject, OBL-marked

indirect object and a *ke*-clause complement. *Ke*-clause complements of *kole*-type

verbs also obligatorily contain PRO in the subject position. See (10.24) below.

(10.24) a. Na'e kole 'e Sione kia Mele [ke 'alu PRO ki kolo].
       Pst request ERG Sione to Mele to go   to town
     "Sione asked Mele to go to town."

      b. Na'e kole 'e Sione kia Mele [ke tapuni'i PRO 'a e matapaa].
      Pst request ERG Sione to Mele to close   ABS def door
     "Sione asked Mele to close the door."

(10.24) c. *Na'e kole 'e Sione kia Mele [ke tapuni'i 'e Pita 'a e matapaa].
    Pst request ERG Sione to Mele to close ERG Pita ABS def door
   "Sione asked Mele for Pita to close the door."

The empty subject is not replaceable with an overt pronoun.

(10.25) *Na'e kole 'e Sione kia Mele$_i$ [ke ne$_i$ tapuni'i 'a e matapaa].
    Pst request ERG Sione to Mele to 3.s. close ABS def door
   "Sione asked Mele for her to close the door."

We assume that *kole*-type verbs are also subject to a semantic constraint. Following

Dixon (1979), let us consider that verbs like "tell" and "ask" are indirect imperatives.

For this reason, the subject of the embedded verb (i.e., the instruction) is necessarily

the addressee, the Goal argument. Consequently, the subject of *ke*-clause complements

of *kole*-type verbs can only be PRO that is obligatorily controlled by the indirect

object of the matrix clause.

There is also a phenomenon of control by object. Verbs like *ako'i* ("to teach") and

fakangofua'i ("to allow") take an ERG-marked subject, an ABS-marked object, and a

ke-clause that necessarily contains PRO, which is controlled by the matrix object. See

(10.26) below.

(10.26) a. Na'e ako'i 'e Sione 'a Mele [ke kakau PRO].
    Pst teach ERG Sione ABS Mele ke swim
    "Sione taught Mele to swim."

   b. Na'e fakangofua'i 'e Sione 'a Mele [ke 'ave PRO 'ene ta'ahine].
   Pst allow ERG Sione ABS Mele ke take poss.3.s. girl
   "Sione allowed Mele to take her daughter."

Whether a *ke*-clause can have an overt NP in the subject position is determined by the

semantic nature of the matrix verb. For example, *fakangofua'i* ("to allow") could take

a *ke*-clause with an overt NP in the subject position, as illustrated by (10.27) below.

(10.27) Na'e fakangofua'i 'e Sione 'a Mele [ke 'alu 'a 'ene ta'ahine ki kolo].
Pst allow ERG Sione ABS Mele ke go ABS poss.3.s. girl to town
"Sione allowed Mele for her daughter to go to town."

To summarise, we have shown a) that the empty element in the subject position of *ke*-clauses is PRO, b) that both PRO and overt NP's may appear in *ke*-clauses, and c) that PRO can occur both as S and A. These findings support our hypothesis that *ke*-clauses are inflected infinitives that can license both PRO and overt NP.

10.3.2 PROarb

As mentioned earlier (Chapter 3), there is a class of intransitive verbs that subcategorise for sentential subjects. These verbs are unaccusatives in that they do not assign an external theta-role. Thus, we assume that there is a null expletive *pro* in the matrix subject position. Verbs of this class cannot take a thematic subject, as illustrated by (10.28) below.

(10.28) a. Kuo pau *pro* [ke 'alu 'a Sione ki kolo].
Perf determined ke go ABS Sione to town
"Sione must go to town."
Lit. "It has been decided that Sione go to town."

b. *Kuo pau 'a Sione.
Perf determined ABS Sione
Intended meaning: "Sione has determined."

Ke-clause complements of unaccusative verbs may contain PRO in the subject position. However, in this case PRO must have an arbitrary interpretation. See (10.29) below.

(10.29) a. Kuo pau *pro* [ke tui PRO 'a e sote hinehina].
   Perf decide ke wear ABS def shirt white
   "(One) must wear a white shirt."
   Lit. "It has been decided that (one) wear a white shirt."

   b. 'Oku tapu *pro* [ke ifi tapaka PRO 'i heni].
    Prs prohibited ke smoke tobacco in here
    "Smoking is prohibited here."
    Lit.: It is prohibited that (one) smoke here."

Since the matrix clause contains no arguments that could serve as a controller, PRO in the *ke*-clause in these examples is necessarily interpreted as arbitrary.

10.3.3 PRO as O

We have shown that A as well as S can be PRO in *ke*-clauses. Our hypothesis that PRO checks its case feature in [Spec, TP] accounts for this fact. Since feature checking of [Null] does not take place in [Spec, Agrs], PRO can be licensed in intransitive constructions despite their lack of Agrs. So far, we have not mentioned whether PRO is allowed to occur as O. An intriguing fact is that the embedded object position may contain an empty element. For example, see (10.30) below.

(10.30) 'Oku loto 'a Sione [ke 'ave 'e Mele *e*].
   Prs want ABS Sione ke take ERG Mele
   "Sione wants Mele to take *e*."

Native speakers find (10.30) incomplete if uttered without a specific context. The sentence is incomplete because the referent of the empty object is not identifiable. Given an appropriate context, the empty object is understood to be coreferential with someone other than *Sione*. Thus, we assume that the empty object is *pro*, and not PRO.

(10.31) 'Oku loto 'a Sione$_i$ [ke 'ave 'e Mele *pro*$_{i*/j}$].
   Prs want ABS Sione ke take ERG Mele
   "Sione wants Mele to take him."

The fact that only the disjoint reference reading is possible indicates that the null

object in (10.31) is *pro* rather than PRO.

It would be useful to compare the empty objects in Tongan with those in Chinese.

Chinese also permits null objects in embedded clauses. However, Huang (1984)

argues that there are two kinds of null arguments in Chinese, *pro* and variables bound

by a topic, and that the former may occur only in the subject position. Chinese permits

both null subjects and null objects, as illustrated by the following examples.

(10.32) Chinese (Huang 1984: 533)

> a. *e* kanjian ta le.
>   "(He) saw him."

> b. ta kanjian *e* le.
>   "He saw (him)."

They may also occur in embedded clauses. See (10.33) below.

(10.33) Chinese (Huang 1984: 537)[20]

> a. Zhangsan$_i$ shuo [$e_{i/j}$ bu renshi Lisi].
>   Zhangsan say   not know Lisi
>   "Zhangsan said that (he) did not know Lisi."

> b. Zhangsan$_i$ shuo [Lisi bu renshi $e_{i*/j}$].
>   Zhangsan say Lisi not know
>   "Zhangsan said that Lisi did not know (him)."

However, note   that while the null subject may be coreferential with a matrix

argument, the null object must have a disjoint reference in an unmarked context.

Coreference is permissible only when the matrix subject happens to be the topic.[21] For

this reason, Huang (1984) argues that the empty object in Chinese cannot be *pro*. For

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[20] Indices are mine.
[21] We define "topic" as what is under discussion, whether previously mentioned or assumed in discourse
(cf. Bresnan and Mchombo (1987).

pro, being [+pronominal], should be able to refer to a matrix argument just like the empty subject can.[22] In contrast, an overt pronominal object gives rise to ambiguity: the pronoun may either be coreferential with the matrix subject or have a disjoint reference.

(10.34) Chinese (Huang 1984: 538)

> Zhangsan$_i$ shuo Lisi bu renshi ta$_{i/j}$.
> Zhangsan say Lisi not know him
> "Zhangsan said that Lisi didn't know him."

Thus, Huang (1984) argues that the empty objects in Chinese are variables bound by a topic.

It should be noted also that Huang considers that the null subjects that are coreferential with a matrix argument are instances of *pro* while those which have a disjoint reference are variables like the null objects. Thus, the null subject in (10.32) is regarded not as *pro*, but as a variable bound by a topic. In this view, what we have been calling *pro* in Tongan is also considered a variable bound by a topic. The behaviour of the Tongan *pro* appears to coincide with Huang's characterisation of the Chinese topic variables. However, in Tongan, there is yet another constraint, i.e. an empty argument must be third person singular. In other words, what we call *pro* in Tongan is actually a variable bound by a topic and this variable is subject to another constraint, i.e. the antecedent must be third person singular. In the following discussion, we will refer to what we have been calling *pro* as a topic variable.

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[22] Note also that Huang assumes that the null subject coreferential with a matrix argument is *pro*, not PRO. Huang (1984: 552) postulates the following two constraints to account for the coreference possibilities between the empty subject and a matrix argument: a) a pronoun must be free in its governing category (Disjoin Reference) and b) coindex an empty pronominal with the closest nominal element (Generalised Control Rule).

Note also that there is a significant difference between the null subject and the null object in *ke*-clauses. Strictly speaking, the null subject of a *ke*-clause can be a topic variable as well as PRO. Thus, we have two possible structures for *'Oku loto 'a Sione ke 'alu*.

(10.35) a. 'Oku loto 'a Sione [ke PRO 'alu].
    Prs want ABS Sione to go
   "Sione wants to go."

   b. 'Oku loto 'a Sione$_i$ [ke $e_{i*/j}$ 'alu].
    Prs want ABS Sione to 3.s. go
    "Sione wants him/her to go."

Note, however, that coreference is not permissible in (10.35b): the topic variable in *ke*-clause is obligatorily disjoint in reference. It should be noted also that (10.35b) requires an appropriate context that provides a discourse antecedent for the topic variable. It might be surprising that the variable cannot be bound by the matrix subject under any circumstances. Coreference between the topic variable and the matrix subject would be possible only if the matrix subject happens to be the topic. However, this scenario is not possible in Tongan for the following reason. It seems that in Tongan the use of a topic variable is much preferred to that of a pronoun to refer to the topic. Therefore, if the matrix subject is the topic, it should be a variable as well. The fact that the matrix subject is not a variable in turn suggests that it is not the topic. Hence, the coreference is impossible.

Another intriguing fact is that an overt pronoun, when it occurs in the embedded clause, must have disjoint reference just like the topic variable. See (10.36) below.

(10.36) 'Oku loto 'a Sione$_i$ [ke ne$_{i*/j}$ 'alu].
    Prs want ABS Sione to 3.s. go
    "Sione wants him/her to go."

This is unexpected, because given the Binding Principle B, a pronoun should be able to refer to anything outside its governing category. Incidentally, this restriction on coreference is predicted by the Avoid Pronoun Principle (Chomsky 1981): namely, coreferential pronouns are excluded from the positions where PRO can occur. Thus, an overt pronoun is necessarily disjoint in reference from the matrix subject.[23]

In contrast, a pronominal object in *ke*-clauses is required to be coreferential with the matrix subject. As illustrated by (10.31), a null object in *ke*-clauses is obligatorily disjoint in reference from the matrix subject. However, an overt pronoun in the relevant position is most naturally interpreted as coreferential with the matrix subject in an unmarked context. See (10.37) below.

(10.37) 'Oku loto 'a Sione$_i$ [ke 'ave ia$_{i/j*}$ 'e Mele].
      Prs want ABS Sione ke take 3.s. ERG Mele
    "Sione wants Mele to take him."

The third person pronoun *ia* in the *ke*-clause is naturally interpreted as coreferential with the matrix subject when (10.37) is an independent utterance. This contradicts Huang's prediction: since a pronoun can either be coreferential with a matrix argument or refer to something outside the sentence, a sentence with a pronominal object must be ambiguous. However, in Tongan, the presence of a pronominal object does not give rise to ambiguity. On the contrary, the sentence is strictly unambiguous, with the pronoun being obligatorily coreferential with a matrix argument. What is

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[23] This kind of functional explanation has an inherent weakness since there are many cases of languages having things they do not strictly need. It should also be noted that it is difficult to state a global economy condition such as the Avoid Pronoun Principle in the minimalist framework, since the numerations of the two constructions being compared are crucially different. However, as we will see shortly, restrictions on coreference between the pronouns in *ke*-clauses and a matrix argument in Tongan seem to be best explained by the Avoid Pronoun Principle.

noteworthy is that an overt pronoun prefers the coreference reading. In contrast with the topic variable, which is used exclusively to refer to a discourse topic and thereby cannot refer to a sentence-internal antecedent, the overt pronoun *ia* generally has its referent inside the same sentence. Interestingly, disjoint reference is possible if the referent is the topic. This patterns with the Chinese empty object, which must be disjoint in reference from the matrix subject unless the latter happens to be the topic. Examples of control by object seem to support this hypothesis. See (10.38) below. Note that the embedded subject must always be PRO, which is controlled by the matrix object.

(10.38) a. Na'e fakangofua'i 'e Sione$_i$ 'a Mele$_j$ [ke PRO$_j$ sivi $e_{i*/j*/k}$].
        Pst allow   ERG Sione ABS Mele ke examine
      "Sione allows Mele to examine (him/her)."

      b. Na'e fakangofua'i 'e Sione$_i$ 'a Mele$_j$ [ke PRO sivi ia$_{i/j*/k}$].
          Pst allow   ERG Sione ABS Mele ke examine 3.s.
         "Sione allows Mele to examine him/her."

The topic variable in (10.38a) obligatorily has a disjoint reference interpretation. It cannot be coreferential with either the matrix subject *Sione* or the matrix object *Mele*. This restriction on coreference in turn indicates that the null object in (10.38a) is not PRO. As for the overt pronoun *ia*, it is interpreted as coreferential with the matrix subject *Sione* unless some particular context is provided. In summary, there is a crucial difference between the Chinese and Tongan pronominal objects: pronominal objects in Chinese may refer to anything outside their governing category, while those in Tongan must have a sentence-internal antecedent if there is one available. This rule can be violated only if the pronominal objects refers to the discourse topic.

Our Tongan data show that the empty object is a topic variable, not PRO. In the

current approach, the fact that PRO cannot occur as O is predictable for the following

reasons. As mentioned earlier, PRO must check its case in [Spec, TP]. In a transitive

construction, O cannot move to this position because it contains a trace of A. A (i.e.,

the NP base-generated in [Spec, VP]) has to move to [Spec, TP] on its way to [Spec,

Agrs] where it has its case feature checked.[24] Consequently, PRO fails to check off its

case feature and thereby the derivation would crash.

10.3.4 Control by pronominal arguments

We studied various instances of control in which the controller is a full NP. We have

seen that *ke*-clauses may contain null elements, both PRO and a topic variable. In

determining whether a null element is PRO or a topic variable, we noted the following

properties that distinguish the two: a) the topic variable in Tongan must have an

antecedent that is third person singular in its feature specification; b) an overt pronoun

may occur in place of the topic variable, but not in lieu of PRO; and c) the topic

variable obligatorily has disjoint reference, whereas PRO must be coreferential with a

matrix argument.[25] This observation led us to conclude that the general restriction on

control that PRO must be subject applies in Tongan as well. We have also come across

some peculiar nature of the third person singular pronouns. In an unmarked context,

sentences with a topic variable in the embedded object position have the disjoint

reference reading, while those with an overt pronoun require the coreference reading.

This is because the topic variable must be bound by the discourse topic. It should be

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[24] In this sense, it is self-evident that the null object in (10.32a) cannot be PRO. A single clause cannot contain more than one PRO: since only one of them can check its case feature, other PRO(s) would fail to check their case feature. Hence, ungrammaticality is inevitable.
[25] An exception is PROarb in the case of the one-place predicates such as *pau* and *tapu*.

noted also that coreference is not possible for pronouns in the embedded subject position. In what follows, we will study the aforementioned peculiar properties of the Tongan pronouns in relation to the control phenomenon.

The data studied below present three puzzles. First, it appears that PRO can be controlled by a pronominal argument only if it is A, but not if it is S. Considering that PRO cannot occur as O, this in turn suggests that as far as the pronominal controllers are concerned, control phenomenon in Tonga also exhibits a certain degree of ergativity: control by pronominal arguments is permissible with A but not with S or O. The second puzzle concerns the coreference possibility of the third person pronouns. We find two consistent differences between clitic pronouns and independent pronouns. First, a topic variable in the embedded subject position must have disjoint reference while both coreference and disjoint reference are possible for a topic variable in the embedded object position. Although the native speakers consider sentences with an empty element in the embedded subject position ambiguous, we assume that this ambiguity is because of the superficial resemblance between the two constructions given in (10.39) below.

(10.39) a. ‘Oku loto ‘a Sione [ke PRO ‘alu].
            Prs want ABS Sione ke   go
           “Sione wants to go.”

         b. ‘Oku loto ‘a Sione [ke *e* ‘alu].
            Prs want ABS Sione ke   go
           “Sione wants (him) to go.”

The empty subject may be either PRO or *a topic variable*. If it is PRO, coreference is required. If it is *a topic variable*, it must have disjoint reference. In (10.39a), the matrix subject is coreferential with the empty subject of the embedded clause. In

contrast, the empty subject of the *ke*-clause in (10.39b) has disjoint reference. Thus, we assume that (10.39b) is not ambiguous: the topic variable cannot be coreferential with the matrix subject. It should also be noted that the variable reading (10.39b) is not available unless an appropriate context is provided. Secondly, as for overt pronouns, the subject clitic *ne* necessarily has disjoint reference, while the independent pronoun *ia* is required to be coreferential with the matrix subject. There seems to be a correlation between these peculiar constraints on coreference and the availability of PRO in the relevant positions. In the subject position in which PRO may occur, the appearance of an overt pronoun is prohibited if coreference is implied. In other words, PRO cannot be replaced by an overt pronoun. Therefore, any occurrence of an overt pronoun in the subject position must have disjoint reference. On the other hand, the object position cannot contain PRO. Therefore, theoretically, it is possible for an overt element to be coreferential with any argument, including the matrix arguments. Nevertheless, coreference with a matrix argument is the preferred option for *ia*. We will propose that the distribution of *ia* is governed by an elsewhere condition: the topic variable is used to refer to the discourse topic, while an overt pronoun is used otherwise.

10.3.4.1 Control of S

A curious fact is that control of S by a pronominal argument is forbidden. The embedded S cannot be PRO if the NP with which it is coreferential is a pronoun. Instead, an overt pronoun must appear in *ke*-clauses even under coreference. See (10.40) below.

(10.40) a. 'Oku ou loto [ke *(u) 'alu].
   Prs 1.s. want ke 1.s. go
   "I want to go."

  b. 'Oku ou manatu'i [ke *(u) 'alu ki he 'uafu].
    Prs 1.s. remember ke 1.s. go to def wharf
   "I remember to go to the wharf."

  c. Na'e kole mai 'e Sione kiate au [ke *(u) 'alu ki ai].
    Pst request toward-me ERG Sione to-person 1.s. ke 1.s. go to there
   "Sione asked me to go there."

Sentences in (10.40) are illicit if the first person singular pronoun *u* is omitted. In other words, the control construction of the form (10.41) below is not permissible.[26]

(10.41) *'Oku ou loto [ke 'alu PRO].
   Prs 1.s. want ke go

To generalise, a matrix argument that is [+pronominal] cannot control S of the embedded clause.

As far as the third person singular pronoun *ne* is concerned, there is yet another principle to be considered. As shown above, the third person singular subject pronouns cannot be coreferential with the matrix argument. Hence, the matrix subject *Sione* and *ne* in (10.42a) below must be disjoint in reference. On the other hand, the aforementioned principle rules out (10.42b).

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[26] Of course, the embedded subject may be empty, as illustrated by (i) below, provided that coreference is not implied. This possibility again requires an appropriate context, in which the topic variable can identify its features with those of a discourse antecedent.
(i) 'Oku ou loto [ke *e* 'alu].
   Prs 1.s. want ke go
   "I want (him/her) to go."

(10.42) a. 'Oku loto 'a Sione$_i$ [ke ne$_{*i/j}$ 'alu].
       Prs want ABS Sione ke 3.s. go
       "Sione$_i$ wants him$_{*i/j}$ to go."

    b. *'Oku ne loto [ke 'alu PRO].
       Prs 3.s. want ke go
       "He wants to go."

The question is, then, what if both the matrix and embedded clauses contain *ne*.

Consider (10.43) below.

(10.43) a. 'Oku ne$_i$ loto [ke ne$_{i/*j}$ 'alu].
       Prs 3.s. want ke 3.s. go
       "He$_i$ wants him$_{i/*j}$ to go."

    b. 'Oku ne$_i$ loto [ke *e*$_{*i/j}$ 'alu].
       Prs 3.s. want ke   go
       "He$_i$ wants him$_{*i/j}$ to go."

(10.43a) shows that *ne* in the embedded clause must be coreferential with the pronominal subject of the matrix clause. Note that disjoint reference is not permissible. In contrast, if the embedded subject pronoun is a topic variable, the constraint on interpretation is the opposite: the matrix subject pronoun *ne* and the topic variable must be disjoint in reference, as illustrated by (10.43b). This striking contrast between (10.43a) and (10. 43b) confirms the following hypothesis. First, pronominal arguments fail to control S of the embedded clause. As a result, the embedded subject must be realised as an overt pronoun if coreference is implied. This constraint rules out the disjoint reference reading in (10.43a). On the other hand, (10.43b) indicates that the topic variable does not qualify as a coreferential subject. This restriction can be explained as follows. Recall our observation that a topic variable in the embedded object position is generally disjoint in reference, while the overt pronoun *ia* is coreferential with the matrix subject. Put differently, the overt pronoun *ia* requires a sentence-internal antecedent whereas the topic variable seems to

avoid the sentence-internal antecedent in an unmarked context. Coreference is prohibited in (10.43b) because the empty subject is a topic variable, which must be bound by the discourse topic. Bearing this hypothesis in mind, see (10.44) below.

(10.44) a. 'Oku loto 'a Sione [ke 'alu 'a Pita].
　　　　　Prs want ABS Sione ke go ABS Pita
　　　　　"Sione wants Pita to go."

　　　b. = *'Oku ne$_i$ loto [ke ne$_j$ 'alu].

　　　c. = 'Oku ne$_i$ loto [ke e_j 'alu].

　　　d. = 'Oku loto 'a Sione$_i$ [ke ne$_j$ 'alu].

(10.44a) can be paraphrased as (10.44c) but not as (10.44b). (10.44b) is ruled out because coreference is obligatory when the coreferential arguments are both pronominal. In contrast, the pronominal subject of the embedded clause in (10.44d) is interpreted as disjoint in reference because the matrix subject is a full NP.

To summarise, there are three points to note: a) a pronominal argument cannot control the embedded PRO (S); b) if the matrix subject is pronominal, the coreferential embedded subject cannot be PRO but must be realised overtly as an overt pronoun; and c) the topic variable cannot refer to the matrix subject.

10.3.4.2 Control of A

In contrast, A behaves differently from S in the constructions with a pronominal antecedent. PRO can occur as A in *ke*-clauses even if the controller is a pronoun. See (10.45) below.

(10.45) a. 'Oku ou loto [ke (*u) fakatau 'a e me'a lele].
    Prs 1.s. want ke 1.s. buy ABS def car
  "I want to buy a car."

    b. Na'a ku manatu'i [ke (*u) tapuni'i 'a e matapaa].
     Pst 1.s. remember ke 1.s. close ABS def door
    "I remembered to close the door."

    c. Na'e kole 'e Sione kiate au [ke (*u) tamate'i 'a e maama].
     Pst request ERG Sione to-person 1.s. ke 1.s. kill ABS def light
    "Sione asked me to turn off the light."

The occurrence of the first person singular pronoun *u* in the embedded clause leads to

ungrammaticality. We therefore assume that the sentences in (10.46) are legitimate in

Tongan, with PRO (A) controlled by a pronominal argument.

(10.46) a. 'Oku ou loto [ke fakatau PRO 'a e me'alele].
    Prs 1.s. want to buy   ABS def car
  "I want to buy a car."

    b. Na'a ku manatu'i [ke tapuni'i PRO 'a e matapaa].
     Pst 1.s. remember to close   ABS def door
    "I remembered to close the door."

    c. Na'e kole 'e Sione kiate au [ke tamate'i PRO 'a e maama].
     Pst request ERG Sione to-person 1.s. to kill ABS def light
    "Sione asked me to turn off the light."

Examples such as (10.47) below provide evidence for the PRO analysis. In (10.47),

the third person dual pronoun *na* cannot be coreferential with the matrix subject. The

sentence is grammatical only if the two pronouns are interpreted as disjoint in

reference.

(10.47) 'Oku na$_i$ loto [ke na$_{*i/j}$ fakatau 'a e me'alele].
    Prs 3.d. want to 3.d. buy ABS def car
  "They want them to buy a car."

(10.47) shows that a coreferent overt pronoun is not permitted in the position in which

PRO can occur.

Applied to the third person singular pronoun *ne*, this principle predicts that an occurrence of *ne* in the embedded clause necessarily implies disjoint reference. This hypothesis is borne out, as illustrated by (10.48).

(10.48) a. 'Oku ne$_i$ loto [ke ne$_{*i/j}$ fakatau 'a e me'alele].
      Prs 3.s. want ke 3.s. buy ABS def car
    "He wants him to buy a car."

   b. 'Oku ne loto [ke fakatau PRO 'a e me'alele].
     Prs 3.s. want ke buy   ABS def car
    "He wants to buy a car."

   c. 'Oku ne$_i$ loto [ke *e*$_{*i/j}$ fakatau 'a e me'alele].
     Prs 3.s. want ke   buy ABS def car
    "He wants him to buy a car."

Note that the embedded subject *ne* in (10.48a) could be replaced with a topic variable, given an appropriate context. In that case, coreference between the topic variable and the matrix subject is disallowed, as illustrated by (10.48c). The empty subject of the embedded clause must be PRO if it is coreferential with a matrix argument, as a topic variable cannot be bound by a matrix argument.

The data cited above clearly indicate that the embedded clause contains PRO in the subject position. In other words, it is shown that pronominal arguments can serve as a controller if the controllee is A. This is a puzzling property of the Tongan control phenomenon. Pronominal arguments can control A but not S. Where coreference is implied between a pronominal argument and the embedded S, the latter must be realised as an overt pronoun.

10.3.4.3 Coreference between O and a pronominal argument

The generalisation that control of O is banned also holds of the structures whose

matrix subject is a pronominal argument. See (10.49) below.

(10.49) a. 'Oku ou loto [ke 'ave *(au) 'e Mele].
    Prs 1.s. want ke take 1.s. ERG Mele
   "I want Mele to take me."

   b. Na'a ku fakangofua'i 'a Sione [ke 'ave *(au) PRO].
    Prs 1.s. allow   ABS Sione ke take 1.s.
   "I allowed Sione to take me."

The first person singular pronoun *au* cannot be omitted: otherwise, the sentences would be ungrammatical. A similar condition applies with regard to the sentences in (10.50) below. The pronominal matrix subject requires a coreferential overt pronoun in the embedded object position. The empty object in the embedded clause renders the sentence illicit if coreference is intended. These data confirm that PRO cannot occur in the embedded object position.

(10.50) a. 'Oku ne$_i$ loto [ke 'ave ia$_{i/*j}$ 'e Mele].
    Prs 3.s. want ke take 3.s. ERG Mele
   "He$_i$ wants Mele to take him$_i$."

   b. 'Oku ne$_i$ loto [ke 'ave $e_{*i/j}$ 'e Mele].
    Prs 3.s. want ke take ERG Mele
   "He$_i$ wants Mele to take him$_j$."

Thus, our data have revealed an interesting fact about the control phenomenon in Tongan. Control constructions with a full NP matrix subject behave differently from those with a pronominal subject. The former respects the general constraint on control that PRO may occur only in the subject positions: PRO is excluded from the embedded object position. The latter, on the other hand, abides by yet another rule: namely, PRO may occur only as A. Not only O but also S must be realised as an overt pronoun. Put differently, as far as the control by pronominal arguments is concerned, A is distinguished from S and O. Although Tongan does demonstrate the subject-

oriented property of control, its ergative tendency protrudes at the same time. This is a finding worthy of note, as it has been widely accepted that the concept of subject cross-linguistically overrides ergativity in the control phenomenon. Our data demonstrate a remarkable case, in which ergativity has its effect over the subject-oriented nature of control phenomenon.[27] However, it is not clear why this is so. We will leave this question open to future research.

10.4 Problems

The Tongan data studied in the previous section confirm the general assumption that occurrence of PRO is restricted to the subject position. This subject-oriented nature of PRO is explained by our proposal in combination with the Null case hypothesis: PRO must check its case feature by [–tense] T in [Spec, TP]. Thus, PRO can occur as S as well as A in ergative languages, since case checking of PRO does not involve Agrs. On the other hand, PRO cannot be O because it would not be able to move to [Spec, TP] and as a result, fail to check its case feature. This is so because [Spec, TP] is already occupied by (a trace of) A: A has to stop at [Spec, TP] on its way to [Spec, Agrs], in which its case feature is checked off.

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[27] Craig (1976:105) reports another interesting case. In Jacaltec, it is only S-arguments that can be PRO. Consider (i) below. It seems that Jacaltec respects both the subject-oriented nature (hence *PRO (O)) as well as ergativity (hence *PRO(A)).

（i）   a. xc-ach to sajchon.
   ASP-ABS2 go to play
   "You went to play."
  b. xc-ach to hin-aw-ila.
   ASP-ABS2 go ABS1-ERG2-see
   "You went to see me."

However, we are aware of two problems: a) PRO and overt NP's are allowed to occur in the same position and b) PRO cannot be S if the controller is a pronominal argument. The first problem can be accounted for by our hypothesis that *ke*-clauses are inflected infinitives in the sense of Raposo (1987). Since they contain both [–tense] T and Agrs, PRO as well as overt NP's are able to check off their case feature in *ke*-clauses: specifically, PRO in [Spec, TP] and overt NP's in either [Spec, Agro] or [Spec, Agrs]. As mentioned earlier, a similar phenomenon is found in some accusative languages, e.g., Icelandic (Sigurðsson 1991) and Modern Greek (Watanabe 1993). As for the second problem, an explanation is yet to be sought. However, we leave this issue open to future research. In addition to the problem of coexistence of PRO and overt NP's, there is another question of NOM-marked PRO. In the data regarding the quantifier agreement in the Icelandic infinitives and the agreement on the secondary predicates in the Russian infinitives, PRO seems to trigger the NOM agreement. This seemingly suggests that PRO in such instances bears NOM instead of Null case. In this section, we will reconsider the data and attempt to provide a coherent account for the aforementioned problems.

10.4.1 Coexistence of PRO and overt NP's

In this subsection, we will study the data concerning Icelandic, Malagasy and Modern Greek. These languages have a type of clause that allows both PRO and overt NP's in the subject position. We will also consider Watanabe's (1993a) proposal with regard to the controversial phenomenon found in Modern Greek.

10.4.1.1 Icelandic *að*-clauses

Icelandic *að*-clauses, like Tongan *ke*-clauses, can have lexical subjects as well as PRO.

See (10.51) below.

(10.51) Icelandic (Sigurðsson 1991: 340)

    a. María segir að þú lesir alltaf bókina.
       Mary says that you read always the book

    b. María lofaði að PRO lesa alltaf bókina.
       Mary promised to   read (inf) always the book
       "Mary promised always to read the book."

Sigurðsson argues that Infl in the *að*-clause of (10.51a) is Infl/+Agr and that of

(10.51b) is Infl/–Agr. It is assumed that Infl/–Agr is not a proper governor and

therefore lexical arguments cannot be licensed in the infinitive *að*-clauses. Note that

the notion of (proper) government is crucial to Sigurðsson's account. Presence of a

proper governor determines whether a lexical subject is permitted in an *að*-clause. In

terms of the Null case approach, this amounts to saying that Infl/+Agr checks NOM

but Infl/–Agr checks Null. Interestingly, Sigurðsson's hypothesis is in accordance

with our observation: case feature checking of NOM is dependent on the presence of

Agr(s) while that of Null is related to T.

10.4.1.2 Malagasy *fa*-clauses

In Malagasy, subordinate clauses introduced by *fa* apparently allow PRO as well as

overt NP's to appear in the subject position. If the embedded subject is coreferential

with the matrix subject, *fa*-clauses contain a null subject. See (10.52) below.

(10.52) Malagasy

> N-ilaza i Paoly [fa h-andeha PRO].
> Pst-say NOM Paul fa Fut-come
> "Paul said that (he) would come."

Keenan (1976a) notes that a pronoun can also appear in the embedded subject position. However, in such a case, the pronoun is interpreted as disjoint in reference.[28] With coreference implied, *fa*-clauses must have PRO in the subject position. What is particularly puzzling about Malagasy *fa*-clauses is that these clauses seem to be finite. The verb shows inflection for tense in *fa*-clauses. Note that in (10.52), the verb in the *fa*-clause is inflected for future tense. In sum, Malagasy *fa*-clauses allow PRO even though they contain [+tense] T. The problem is that according to the Null case hypothesis, [+tense] T does not have the feature [Null]. On the other hand, empirical evidence demonstrates that the empty subject in *fa*-clauses is PRO and cannot be *pro*. First, this empty subject is not replaceable with an overt pronoun. If an overt pronoun appears in this position, coreference is not possible. If it were *pro*, it should be freely replaced with a corresponding overt pronoun. Secondly, *fa*-clauses do not permit an empty object despite the fact that generally *pro* can appear as O in Malagasy. The Malagasy *fa*-clauses and the Tongan *ke*-clauses are very much alike except for one significant difference is that the verb shows overt inflection for tense in the former. We therefore need to explain why PRO is allowed in the characteristically finite *fa*-clauses, assuming that PRO bears Null case and that Null case is checked by [–tense] T.

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[28] Note that the Tongan *ke*-clauses exhibit the similar effect. An overt pronominal subject of the *ke*-clause cannot be coreferential with the matrix subject.

10.4.1.3 Modern Greek *na*-clauses

Another instance of the coexistence of PRO and lexical subjects is found in Balkan languages, e.g., Modern Greek and Romanian. Watanabe (1993a,b) cites some data showing that the Balkan subjunctives allow PRO as well as lexical subjects. Subjunctives are by definition finite: the verb inflects as in indicative clauses. Consider (10.53) below. The verb appears in an identical form in the finite *oti*-clause and the subjunctive *na*-clause.[29]

(10.53) Modern Greek (Terzi 1992 cited by Watanabe 1993a:285)

      a. O Yiannis kseri [oti doulevo mazi sou].
         John   knows that work-1.s. with you

      b. O Yiannis theli [na doulevo mazi sou].
         John   wants subj-prt work-1.s. with you

On the other hand, we have sentences like (10.54) below.

(10.54) Modern Greek (Terzi 1992 cited by Watanabe 1993a: 286)

      $Pion_i$ nevriazi to PRO_i na pleni to aftokinito tou_i t_i?
      whom upsets the subj-prt washes the car his
     "Who_i does washing his_i car upset?"

The empty subject in the *na*-clause is understood to be PRO because (10.54) escapes the weak crossover effect. As Higginbotham (1980) points out, this is a special property of PRO. In short, the data show that *na*-clauses albeit their status as finite clauses allow PRO subjects. This is a situation similar to what is called subjunctives in Icelandic and Malagasy.

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[29] Terzi (1992) analyses *oti* as a complementiser and *na* as a particle. Hence, it is assumed that *na*-clauses do not contain a complementiser.

10.4.1.4 Feature checking in C(omp)

Watanabe (1993a,b) notes yet another significant fact about the Modern Greek *na*-clauses. Namely, *na*-clauses are limited in terms of tense possibilities compared with indicatives: tense of *na*-clauses cannot be interpreted as past. According to Iatridou (1981), *na*-clauses with a PRO subject cannot have past tense. In addition, Terzi (1992) shows that restriction on tense possibilities is found also with *na*-clauses with *pro* subjects. Based on this observation, Watanabe argues that subjunctives are somehow deficient in comparison with indicatives in terms of tense, and relates this fact to the proposal of Stowell (1982) that PRO is associated with either future (unrealised) tense or present (simultaneous) tense. In short, Watanabe (1993a) argues that the relative defectiveness of *na*-clauses with regard to tense is the key factor that licenses PRO in *na*-clauses. As for lexical NP's, Terzi (1992) proposes that NOM-marked subjects can appear only if there is overt material in C(omp): specifically, either *oti* or *na*. It should be noted that crucially, infinitives have no overt element in C. To summarise, the condition on Comp ensures that lexical subjects are allowed in *na*-clauses. On the other hand, the defectiveness in tense possibilities allows PRO to appear in *na*-clauses.[30]

The above observation leads to the following hypothesis. Watanabe (1993a,b) proposes that the case feature(s) of T is determined by the richness of its semantic content and postulates four types of T illustrated by (10.55) below.

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[30] It should be noted that not all *na*-clauses allow PRO subjects. PRO is allowed in *na*-clauses only if the verb selects that option.

(10.55) Association of T with case

Richest T	indicatives	- NOM
	subjunctives	- NOM/(Null)
	infinitives	- Null
Impoverished	ECM	- No case

T with the richest content is that of indicatives and is associated with NOM. The most impoverished is that of ECM clauses, which is not associated with any case. (As a result, the subject NP must move out of the embedded clause to receive case from the matrix verb). T of infinitives is recognisably poorer and is associated with Null. As we have seen, subjunctives are ranked somewhere in between indicatives and infinitives. T of subjunctives seems to be richer than that of infinitives, yet not as rich as that of indicatives. Hence, for certain subjunctives like those of the Balkan languages, T has two case features, NOM and Null.

Secondly, Watanabe (1993a,b) observes that there is a correlation between the case of the embedded subject and the form of complementiser. For example, in English, NOM appears if the complementiser is *that*; *for* is required with ACC-marked subjects; and Null is licensed if there is no complementiser. The Modern Greek data seem to support this hypothesis. Terzi (1992) argues that overt material in C licenses NOM-marked subjects in the subordinate clauses. Watanabe postulates that certain feature [F] is created through case-checking process in Agrs and that Agrs has to move to C to check off this feature [F] by a element in C. According to this approach, coexistence of PRO and lexical NP's can be explained as follows. Let us assume that checking of Null case creates [F1] in Agrs while that of NOM creates [F2]. Suppose that *na-*

clauses that allow PRO contain a Comp element, say C1 with the feature [F1]. Similarly, those with a lexical subject have a Comp element with the [F2] feature, C2. In other words, there are potentially two C elements that are available for *na*-clauses. If a certain *na*-clause selects C1, PRO can occur in that particular clause. If C2 is selected, only lexical subjects can occur in the subject position. The choice of C element varies depending on the verbs. The novelty of this hypothesis is that it assumes that T may have two case features and thus both NOM and Null can be checked in a same clause type. However, only one of them is accessible in a particular structure, as the choice of C in turn determines which case is available in a given structure.

10.4.1.5 Inflected infinitive approach

Granted that Watanabe's (1993a,b) proposal explains the controversial phenomenon found in the Balkan languages, it also raises some additional complication to the standard feature checking theory. First, allowing T to have two case features is not ideal, although these two features are distinguished at a later stage of derivation, specifically in C by a C element. However, is it really necessary to stipulate a) that a feature is created as a result of case checking in Agrs and b) that another feature checking takes place in C? Possible though it is, one cannot deny that this analysis makes things more complex.

In contrast, the current analysis can account for the same phenomenon in a much simpler manner. In the current analysis, four clause types given in (10.55) are differentiated in terms of two factors: the feature [±tense] of T and (the presence of)

Agrs. See (10.56) below.

(10.56) Indicative   T [+tense] Agrs

      Subjunctive   T [−tense] Agrs

      Infinitive   T [−tense] -----

ECM constructions are understood as infinitives: since an overt NP cannot check off its case feature, it moves out of the embedded clause into [Spec, Agro] of the matrix clause. There is no need to stipulate another type of T. As discussed above, Tongan *ke*-clauses have [−tense] T and Agrs while English infinitives lack the latter.[31] It is also assumed that case features [Null] and [NOM/ERG] are associated with [−tense] T and Agrs, respectively. This way, we need not assign two case features to a single element. We also assume, following Stowell (1982), that [−tense] T is an example of tense anaphora that is dependent on the matrix tense and is interpreted as either simultaneous or unrealised in relation to the tense of the matrix clause. We may apply this analysis to the other cases concerned: Greek *na*-clauses, Malagasy *fa*-clauses, and Icelandic *að*-clauses are all similar to Tongan *ke*-clauses, containing [−tense] T and Agrs. Hence, both PRO and overt subjects can be licensed. PRO checks its case feature in [Spec, TP] and an overt NP, in [Spec, Agrs]. Two questions should be addressed: a) whether all of these subjunctive clauses demonstrate similar deficiency in terms of temporal interpretation and b) why verbs inflect for agreement with PRO in Modern Greek *na*-clauses, but not in Icelandic *að*-clauses. We will discuss these problems below.

Regarding tense, we have seen that Modern Greek *na*-clauses as well as Tongan *ke*-

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[31] Note that Bobaljik (1993) assumes that English infinitives also contain Agrs but it is defective, i.e., cannot check [NOM/ERG].

clauses can only refer to present or future in relation to the matrix tense.[32] However, Icelandic *að*-clauses and Malagasy *fa*-clauses do not conform to our hypothesis. For example, in Icelandic *að*-clauses, when they contain an overt NP subject, the verb inflects for tense. See (10.57) below.

(10.57) Icelandic (Zaenen, Maling and Thráinsson 1985: 451, 462)

    a. Jón telur að María hafi kysst Harald í gær.
      Jon believes that Mary has kissed Harold yesterday

    b. Hvaða ambáttir heldur þú að konunginum verði gefnar?
      which slaves think you that the king will-be given

In (10.57a), the tense of *að*-clause is present perfect, and in (10.57b), it is future. Sigurðsson (1991) proposes that there are two kinds of *að*-clauses, infinitive and declarative, and the former lacks Agr. It is assumed that both have [+tense] T. This proposal does not explain why verbs inflect for tense only in the latter. Note that in (10.57a), present perfect is used rather than past. English infinitives use the same strategy to refer to past events. If present perfect is always used in *að*-clauses to refer to past events, then possibly, past tense is not available for *að*-clauses. Our hypothesis that T of *að*-clauses is [–tense] will then be borne out.[33]

More problematic is Malagasy *fa*-clauses. Consider (10.58) below.

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[32] With regard to Modern Greek, we need to assume that the referent of the tense anaphora is overtly indicated in the form of tense inflection, whereas in Tongan the tense anaphora keeps its phonological form *ke* regardless of its referent.

[33] Unfortunately, I could not find an example of *að*-clauses containing a verb inflected for past tense. We will have to leave this question open to future research.

(10.58) Malagasy (Randriamasimanana 1986: 551)

    a. N-anantena an'i Jeanne [fa n-andidy ny mofo PRO] i Paoly.
       Pst-expect ACC Jeanne fa Pst-cut the bread NOM Paul
       "Paul expected Jeanne to have cut the bread."

    b. N-anantena an'i Jeanne [fa h-andidy ny mofo PRO] i Paoly.
       Pst-expect ACC Jeanne fa Fut-cut the bread NOM Paul
       "Paul expected Jeanne to cut the bread."

As illustrated by (10.58a), the verb can inflect for past tense in *fa*-clauses. This apparently goes against our hypothesis that *fa*-clauses contain [–tense] T, and that [–tense] T can only be future or present. Curiously, the embedded verb in *fa*-clauses cannot inflect for present tense, as illustrated by (10.59) below.

(10.59) Malagasy (Randriamasimanana 1986: 551)

    *N-ananantena an'i Jeanne [fa m-andidy ny mofo PRO] i Paoly.
     Pst-expect ACC Jeanne fa Prs-cut the bread NOM Paul

Thus, tense of *fa*-clause is limited to some extent, but not in the way we expect. On the other hand, if T of *fa*-clauses is [+tense], then we cannot explain why PRO is licensed in *fa*-clauses. Thus, we have two options: we should either give up our hypothesis that [–tense] T can be only future and present or reconsider the assumption that the empty subject in *fa*-clauses is PRO. If we take the latter alternative, then what could this empty element be? Earlier, we argued that it could not be *pro* because a) it cannot be replaced by an overt pronoun and b) it cannot appear in the object position. There is, however, another possibility: namely, this empty element is a trace. Note that constructions involving *fa*-clauses resemble the Tongan *totonu*/*tuku*-construction (cf. Chapter 7). Consider (10.60) below: *fantatra* is a root passive, meaning "to be known".

(10.60) Malagasy (Randriamasimanana 1986: 540)

    a. Fantatra [fa h-andidy ny mofo i Jeanne].
      known that Fut-cut the bread NOM Jeanne
   "It is know that Jeanne will cut the bread."

    b. Fantatra i Jeanne$_i$ [fa h-andidy ny mofo e_i].
      known NOM Jeanne that Fut-cut the bread

As illustrated by (10.60b), the embedded subject can move out of the embedded clause to the matrix subject position. We assume that (10.60b) is derived from (10.60a) by operator movement and consequently, has the form (10.61) below.

(10.61) Fantatra i Jeanne$_i$ [OP$_i$ [fa h-andidy ny mofo t_i].
      known NOM Jeanne that Fut-cut the bread

Note that the NOM-marked argument that is coreferential with the empty element precedes the sentential complement in (10.60b). In contrast, the NOM-marked controller generally follows the sentential complement containing PRO, whereby the construction maintains the order VOS. See (10.62) below.

(10.62) N-itekita [ny h-ividy ny trano PRO$_i$] i Paoly$_i$.
      Pst-intend to Fut-buy the house NOM Paul
      "Paul intended to buy the house."

In contrast, *fa*-clauses cannot contain an empty subject that is coreferential with the postposed subject, as illustrated by (10.63).

(10.63) Malagasy (Randriamasimanana 1986: 501)

    *N-itetika [fa h-ividy ny trano PRO$_i$] i Jeanne$_i$.
     Pst-intend that Fut-buy the house NOM Jeanne

Similarly, we assume that (10.58a) is actually derived from (10.64a) by operator movement and has the structure (10.64b).

(10.64) a. N-anantena [fa n-andidy ny mofo i Jeanne] i Paoly.

Pst-expect that Pst-cut the bread NOM Jeanne NOM Paul
"Paul expected that Jeanne had cut the bread."

b. N-anantena an'i Jeanne$_i$ [OP$_i$ [fa n-andidy ny mofo t_i] i Paoly.
Pst-expect ACC Jeanne that Pst-cut the bread NOM Paul
"Paul expected Jeanne to have cut the bread."

In this analysis, the empty element in *fa*-clauses is not replaceable with an overt pronoun because Malagasy does not permit a resumptive pronoun in such a case. As to why it cannot occur as O, we need to study whether O can be relativised in a fashion similar to A and S. Interestingly, O cannot be relativised. In order to relativise O, the construction has to be passivised first. Thus,

(10.65) Malagasy (Keenan 1976a: 265)

a. *ny lamba (izay) m-anasa ny zazavavy
the clothes that Prs-wash the girl
"the clothes that the girl is washing"

b. ny lamba (izay) sasan' ny zazavavy
the clothes that wash-pass-by the girl
"the clothes that are washed by the girl"

This explains why (10.66) is ruled out.

(10.66) *N-anantena ny mofo$_i$ [OP$_i$ [fa n-andidy t_i i Jeanne] i Paoly.
Pst-expect the bread that Pst-cut NOM Jeanne NOM Paul
Lit."Paul expected the bread to Jeanne have cut."

In summary, *fa*-clauses contain [+tense] T and the empty subject is not PRO.[34]

Although the question as to why verbs cannot inflect for present tense in *fa*-clauses

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[34] An apparent problem is verbs like *m-ilaza* ("to declare"). Consider (i) below.
(i) a. N-ilaza i Paoly [fa h-andeha *e*].
   b. *N-ilaza [fa h-andeha i Paoly].
Let us assume that (ib) is ruled out because unlike *fantatra*, *m-ilaza* assigns an external theta-role and thereby cannot have an expletive subject. (ib) in turn rejects the PRO analysis, as illustrated by (ii).
(ii) *N-ilaza [fa h-andeha PRO] i Paoly.
Note also that *m-ilaza* cannot take *ny*-clause, as illustrated by (iii).
(iii)*N-ilaza [ny h-andeha PRO] i Paoly.
These data suggest that *Paoly* in (ia) is base-generated in the subject position and that (ia) is derived by operator movement.

still remains unanswered, let us leave this issue open for future research. What matters here is that we are still able to maintain our hypothesis that [–tense] T can be only present or future.

Let us turn to the second problem: namely, why verbs agree with PRO in Modern Greek *na*-clauses but not in Icelandic *að*-clauses. Sigurðsson (1991) proposes that there are two types of *að*-clauses, infinitive and declarative and that the former lacks Agr. This hypothesis explains why the verb appears in the invariant infinitive form if the subject is PRO, while it agrees with the subject in person and number if the subject is a lexical NP. However, it cannot explain why PRO is licensed in *að*-clauses if it is assumed that both *að*-clauses contain [+tense] T as Sigurðsson (1991) does. Thus, we assume that *að*-clauses contain [–tense] T and Agr(s). We may propose that this inconsistency regarding the verbal inflection is due to the fact that PRO does not have phi-features. As a result, the verb appears in its infinitive form. A similar pattern is found in Portuguese: the verb does not show any agreement in infinitives in which the subject is PRO, but it does agree with an overt subject (Raposo 1987). However, this hypothesis faces difficulty in accounting for the Modern Greek data. Verbs consistently show agreement with the empty subject that is presumably PRO. One way to do away with this problem is to stipulate that PRO has phi-features as well as case feature in Modern Greek but it lacks phi-features in Icelandic and Portuguese.[35]

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[35] However, as we will see shortly, this assumption is not free from problems, as quantifiers and passive participles show agreement in number, person and gender with PRO in Icelandic.

10.4.2 Case-marked PRO

As discussed above, the inflected infinitive approach seems able to account for the coexistence of PRO and overt NP's in other languages. A real challenge to the current approach is the phenomenon in which PRO seems to bear NOM (or some other inherent case) instead of Null. In this subsection, we will consider Icelandic and Russian. Sigurðsson (1991) argues that PRO in Icelandic must bear either a quirky case or NOM.[36] In Icelandic, adjectival predicates and passive participles agree in case, number and gender with an NOM-marked argument. Besides, nominative agreement is triggered only by NOM-marked arguments. With DAT-marked NP's, for example, adjectival predicates and passive participles appear in the default form. See (10.67) below.

(10.67) Icelandic (Sigurðsson 1991: 333-334)

    a. Strákunum hafði verið kalt.
      the boys(DAT) had (dflt) been cold (dflt)

    b. *Strákunum höfðu verið köldum
       the boys(DAT) had (3.pl.) been cold (DAT.pl.m/f/n)

In (10.67a), both the verb and the adjective appear in the default form. As illustrated in (10.67b), agreement with a DAT subject is prohibited. In contrast, in *að*-clauses with PRO, predicates and participles show nominative agreement. See (10.68) below.

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[36] As to the quirky case-marked PRO, Sigurðsson cites the following data concerning the agreement on the quantifier *allir*.
(i) Strákanir vonast til [að PRO komast allir í skóla].
  the boys (NOM) hope for to NOM get all (NOM) to school
(ii) Strákanir vonast til [að PRO vanta ekki alla í skólann].
  the boys (NOM) hope for to ACC lack not all (ACC) in the school
Allir ("all") inflects for case, gender and number. (ii) shows that *allir* appears in the accusative form, indicating PRO bears ACC. The matrix subject cannot be responsible for this agreement because it is marked for NOM. Note that quirky PRO subjects raise another problem. The fact that PRO can bear an inherent case undermines the fundamental assumption that the case feature of PRO is [Null] and not the unspecified [case].

(10.68) Icelandic (Sigurdsson 1991: 337)

    a. Strákunum leiddist [að PRO verða kosnir í stjórnina].
      the boys(DAT) bored (dflt) to be elected (NOM) to the board
   "The boys were annoyed by being elected to the board."

    b. *Strákunum leiddist [að PRO verða kosið í stjórnina].
      the boys(DAT) bored (dflt) to be elected (dflt) to the board

A passive participle *kosnir* shows the nominative agreement in (10.68a). Note also that

the passive participle cannot appear in the default form in *að*-clauses with PRO, as

illustrated (10.68b). Sigurdsson (1991) also shows that the quantifier *allir* ("all")

agrees with PRO as well as overt NP's in case, gender and number. See (10.69) below.

(10.69) Icelandic (Sigurdsson 1991: 331)

   a. Strákanir vonast til [að PRO komast allir í skóla].
     the boys(NOM) hope for to get all(NOM) to school
   "The boys all hope to get to school."

   b. Strákanir vonast til [að PRO vanta ekki alla í skólann].
     the boys(NOM) hope for to lack not all(ACC) in school
   "The boys all hope not to be absent from school."

Sigurdsson argues that the quantifier *allir* agrees with PRO, which bears NOM in

(10.69a) and inherent ACC in (10.69b). Note also that the case of the matrix subject is

irrelevant to the agreement on *allir*: in (10.69b), *allir* inflects for ACC although the

matrix subject bears NOM.

A similar agreement pattern is found in Russian. Franks and Hornstein (1992) cite the

examples in which PRO apparently triggers the nominative agreement on what they

call second predicates, *odin* and *sam*. As shown in (10.70), *odin* and *sam* do not show

agreement but appear in the default dative form if the subject is PRO.

(10.70) Russian (Franks and Hornstein 1992: 7)

    a. PRO pojti tuda odnomu rasstroilo by menja.
      to-go there alone (DAT) upset MODAL I (ACC)
    "It would upset me to go there alone."

    b. Ivan dumaet čto PRO pojti domoj odnomu važno.
      NOM thinks   to-go home alone (DAT) important
    "Ivan thinks that it is important to go home alone."

However, in some cases, *odin/sam* appears in the nominative form as illustrated in

(10.71) below.

(10.71) Russian (Franks and Hornstein 1992: 6)

    a. Nadja ljubit PRO gotovit' sama.
      NOM likes   to-cook herself (NOM)
    "Nadja likes to cook herself."

    b. Ljuda priexala PRO pukupat' maslo sama.
      NOM came   to-buy butter herself (NOM)
    "Ljuda came to buy the butter herself."

Franks and Hornstein argue that the difference between the examples in (10.70) and

those in (10.71) is that PRO is governed in the latter and propose that only governed

PRO's can trigger the nominative agreement on the second predicates. In the

examples (10.70a,b), PRO is not governed. It is assumed that the complementiser *čto*

blocks the government in (10.70b). Nevertheless, Franks and Hornstein do not assume

that the governed PRO's bear NOM. Instead, it is proposed that the governed PRO's

are "case active" and able to transmit NOM of the matrix subject. How can this

phenomenon be explained by the current feature-checking approach? Our fundamental

assumption is that PRO bears Null case under any circumstances. Following Franks

and Hornstein, let us assume that the DAT agreement is the default form. Let us

assume also that the default agreement is triggered by Null case. Assuming that PRO

always bears Null case and that an NP (overt or covert) can have only one case, it is

unlikely that the Null case-marked PRO to be case-active. The idea of the governed PRO being case active is supported by the assumption of the GB approach that PRO has no case. In the Null case approach, however, PRO has the [Null] case feature. Consequently, it is implausible for PRO to be case active because it requires PRO to deal with more than one case. Then, how are we to explain the nominative agreement on *odin*/*sam* in (10.70)? Suppose that the nominative agreement on *odin/sam* is attributable to the property of *odin*/*sam* rather than that of PRO. Suppose that *odin*/*sam* has a strong tendency for NOM. If there is a NOM-marked NP in its domain, it agrees with the NOM-marked NP. If not, *odin/sam* appears in the default dative form. *Odin*/*sam* looks up for a NOM-marked NP to agree with. Suppose further that Null case is transparent to *odin*/*sam* during this search process. Let us suppose also that no more than one CP boundary may be crossed in the search. Note that in (10.71), there is a NOM-marked NP, i.e., the matrix subject in the relevant domain. In contrast, in (10.70), *odin* fails to find a NOM-marked NP. In (10.70a), there is no NP in the higher node than PRO. In (10.70b), two CP boundaries must be crossed in order to reach the NOM-marked NP. Hence the default dative agreement on *odin*. This is merely another way of describing the phenomenon which Franks and Hornstein call case-active. Nevertheless, this correctly predicts the agreement facts of the second predicates in the Russian infinitives, retaining at the same time the assumption that PRO bears Null case.

Returning to the Icelandic case, the phenomenon is problematic in three respects. First, it seems that PRO in Icelandic is licensed either by receiving structural Null case or inherent case. Our assumption that the case feature of PRO is [Null] is overthrown.

Second, the data cited by Sigurðsson (1991) suggest that PRO that does not bear inherent case bears NOM rather than Null: adjectival predicates and passive participles appears in the default form if PRO with which they agree bears an inherent case, where they appear in the nominative otherwise. We may speculate that the nominative form is another default form that is exclusively used in case the NP with which they agree bears a structural case. In other words, the passive participle in (10.68a) does not agree with PRO, but only appears in its default form. However, in order to justify this hypothesis, we need to find out whether the passive participles appear in ACC form when modifying a NP bearing structural ACC. In fact, passive participles appear in their accusative form when the subject bears structural ACC, as illustrated by (10.72) below. (10.72) is an ECM construction: the embedded subject checks its case feature in [Spec, Agro].

(10.72) Icelandic (Sigurðsson 1991: 355)

> Hún taldi [einhverja báta hafa verið keypta].
> she believed some boats(ACC) have been bought(ACC)

Still, allowing PRO to bear case other than Null is a substantial divergence from the standard theory. Third, the fact that adjectives, passive participles and quantifiers all agree with PRO in case, number and gender suggests that PRO has phi-features. This contradicts our hypothesis that Icelandic PRO does not have phi-features because the verb do not inflect for agreement. In this sense, Sigurðsson's (1991) may be correct in saying that infinitive *að*-clauses lack Agr. Although PRO itself have phi-features, these features will not be reflected on the verb because feature checking cannot take place in the absence of Agr. However, if we take this option, we will have to assume that there are two kinds of *að*-clauses. To summarise, these data from Icelandic and

Russian pose a serious challenge to the current approach. It will require a thorough investigation into various related phenomena in each of these languages to provide a solution. However, as it is beyond the scope of the current study, we will leave this complex puzzle open to future research.

10.5 Summary

In this section, we studied control phenomenon in Tongan. Following the standard account proposed by Chomsky and Lasnik (1993), we assume that PRO bears structural Null case. In order to account for the fact that PRO can appear only as S and A, we propose a modification of the case feature checking mechanism. Namely, [Null] is checked by [−tense] T in [Spec, TP], and not in [Spec, Agrs]. This will enable PRO (S) to check its case feature in intransitive constructions, which lack Agrs according to the active Agr hypothesis.

Control phenomenon in Tongan shows three peculiar properties. First, PRO appears in the subject position of *ke*-clauses, in which overt NP's are also allowed to occur. This is problematic since it is generally assumed that PRO and overt NP's are in complementary distribution. Infinitives contain [−tense] T, which licenses PRO, while finite clauses contain [+tense] T, which licenses overt NP's. Generally, when a clause lacks [+tense] T, it also lacks Agrs. However, we propose that Tongan *ke*-clauses are similar to inflected infinitives in European Portuguese in that they contain [−tense] T and Agrs (Raposo 1987). According to the current analysis, PRO can check its case

feature in [Spec, TP] and overt NP's can check their case feature in [Spec, Agrs]. This analysis accounts for the coexistence of PRO and overt NP's. It also explains why PRO cannot occur as O. In transitive constructions, A must move to [Spec, TP] on its way to [Spec, Agrs] because it cannot skip two Spec-positions in one move (the Shortest Move constraint). Consequently, [Spec, TP] contains a trace of A and therefore the position is not available for O. Thus, if O is PRO, it will fail to check off its case feature [Null]. Second, our data show that an empty element can appear in the object position of *ke*-clauses. We concluded that this empty object is a topic vabiable and not PRO for the following reasons: a) the empty object cannot be coreferential with an argument of the matrix clause and b) an overt pronoun in the same position must be coreferential with a matrix argument. In contrast, an empty subject in *ke*-clauses must be coreferential with an argument of the matrix clause and an overt pronoun in the subject position of *ke*-clauses must have a disjoint reference. This restriction on coreference conforms to the Avoid Pronoun Principle (Chomsky 1981): an overt pronoun is excluded from the position in which PRO may also occur. The fact that an empty object is not subject to this constraint suggests that PRO is not permitted in this position. Obligatory disjoint reference between the empty object and the matrix subject/object is attributable to the discourse-dependent nature of the topic variable. Third, when the controller is a pronominal argument, only A can be PRO. In other words, with a pronominal controller, distribution of PRO shows an ergative pattern: A can be PRO, but S/O cannot. This is a finding worthy of note. However, we are unable to provide any satisfactory account for this unexpected ergative pattern.

We also discussed some other problems concerning the current analysis of control.

One is coexistence of PRO and overt NP's. A phenomenon similar to Tongan *ke*-clauses is also found in languages like Malagasy, Icelandic and Modern Greek. It has been shown that most of these cases are in accordance with the current analysis: these clauses contain both [–tense] T and Agrs and consequently are able to license PRO as well as overt NP's. With regard to Malagasy *fa*-clauses, noting that T of *fa*-clauses may also be past, we propose that the empty subject in *fa*-clauses is a trace of operator. However, there are some problems that need be solved. In particular, agreement in Icelandic raises a serious challenge. In Icelandic *að*-clauses, the verb does not inflect for agreement. On the other hand, adjectival predicates, passive participles and quantifiers agree with PRO in case, number and gender. Furthermore, the agreement pattern suggests that PRO sometimes bear an inherent case and sometimes NOM. The assumption that PRO can bear inherent case requires more discussion, as it will affect our basic assumptions that the case feature of PRO is [Null]. If we are to assume that the case feature of PRO is simply [case], then PRO would be allowed in clauses with [+tense] T. One way to allow PRO to receive inherent case is to assume that PRO can have two cases, Null and an inherent case. PRO receives an inherent case and subsequently checks off its case feature [Null] in [Spec, TP]. The process is on a par with what Yoon (1996) calls case-stacking. The fact that inherently case-marked PRO triggers agreement for the relevant inherent case also conforms to Yoon's (1996) argument that when a NP bears both an inherent case and a structural case, the inherent case must always be overtly realised. Yet, this is all nothing more than speculation. We will leave these problems open to future research, as pursuit of these issues goes beyond the scope of the current study.

Altogether, we have shown that the current analysis at least provides a satisfactory account of control phenomenon in Tongan. It also explains why distribution of PRO in ergative languages shows an accusative pattern. Our analysis accounts for the fact why PRO can occur as S in ergative languages despite the fact that intransitive constructions in ergative languages lack Agrs, and why occurrence of PRO in the object position is banned.