*ABA pronominal stem allomorphy without containment
Tran Truong*

Abstract. *ABA environments are pockets of morphology that prohibit non-contiguous suppletion, and which show promise to generativists as a diagnostic for the presence of syntactic hierarchical structure. In particular, it identifies Lower Arrernte (Pama-Nyungan) nonsingular pronouns as an AAB-permissive *ABA environment. Morphological contiguity in Lower Arrernte results from the manner in which kintactic features expressing kinship generation and shared patrimoiety must always be bundled together at the same node as co-triggers of suppletion within a realizational morphology. Crucially, this study contradicts earlier accounts of the relevant paradigms in terms of how the categories are ordered by markedness: it argues that the agnatic-harmonic pronouns (i.e., pronouns that refer to groups in which all members belong to the same patrimoiety and even-numbered generations) are the most representationally complex. It emerges that morphological contiguity in Lower Arrernte nonsingulars patterns against the containment relationship observed in comparative suppletion and with the bundling relationship observed in English ablaut.

Keywords. suppletion; aba; arrernte; morphology; distributed morphology; kintax

1. Introduction. In the decade and change following Bobaljik’s (2012) masterful analysis of comparative suppletion, there has been an efflorescence of work on so-called *ABA environments: pockets of natural language morphology in which non-adjacent categories within a paradigm fail to co-supplet or co-syncretize to the exclusion of intervening categories. *ABA phenomena have been spotted in a panoply of domains, to include pronouns (Ganenkov 2018, Smith et al. 2019, Middleton 2021), case (Caha 2008, 2017; McFadden 2018; Zompi 2019; Davis 2021), number (Mare 2021), gender (Gray & Gregor 2019), tense and temporality (Franco 2013, Adamson 2019), possessives (Van Baal & Don 2018), complementizers (Wiland 2018)—and most recently, honorifics (Truong 2022) and fractionals (Sudo & Nevins 2022). Bobaljik’s patient zero is reproduced in Table 1.

<table>
<thead>
<tr>
<th>Positive</th>
<th>Comparative</th>
<th>Superlative</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ADJ]</td>
<td>[ADJ, CMPR]</td>
<td>[ADJ, CMPR, SPRL]</td>
</tr>
<tr>
<td>AAA</td>
<td>smart</td>
<td>smart-est</td>
</tr>
<tr>
<td>ABB</td>
<td>good</td>
<td>be-st</td>
</tr>
<tr>
<td>ABC</td>
<td>bon-us</td>
<td>opt-imus</td>
</tr>
<tr>
<td>ABA</td>
<td>good</td>
<td>good-est</td>
</tr>
<tr>
<td>AAB</td>
<td>good</td>
<td>be-st</td>
</tr>
</tbody>
</table>

Table 1. Comparative suppletion in English & Latin.

* Words cannot express the depth of my gratitude to Karlos Arregi, Itamar Francez, Amy Dahlstrom, Andrew Nevins, Yasutada Sudo, Sasha Wilmoth, Erik Zyman, Mike Putnam, and Romi Roman-Cabrera for their intellectual and interpersonal support from the start of this project into the present day. The numerous faults that still abound are my doing. I would also like to thank Beth Riebe, Mark Schafer, and Kate Kinnaird for making the 97th Annual Meeting such a smooth and enjoyable experience. Author: Tran Truong (elixir@uchicago.edu).
In the AAA case, root constancy is maintained throughout the paradigm. In the ABB case, co-suppletion obtains across the two non-positive grades. In the ABC case, roots are distinct across all three grades. What makes this corner of morphology an *ABA domain is that non-contiguous suppletion of the positive and superlative grades is not possible (*ABA), nor is co-suppletion of the two non-superlative grades (*AAB).

Under the containment hypothesis, the structure of the superlative is built on the structure of the comparative, which is itself built on the structure of the positive. This is represented in Table 1 by the markedness-increasing feature bundles associated with each column. A Vocabulary item associated with a suppletive allomorph specific to the superlative grade is therefore equally specific to the comparative grade, ruling out non-contiguous root isomorphism.

*AAB patterns in this domain are ruled out in a different manner. Bobaljik argues that the impossibility of *AAB suppletion results from an adjacency condition, under which a trigger for suppletive allomorphy must be adjacent to the root (Bobaljik 2012:144). Without such a condition, patterns such as *good - good-er - be-∅-st would arise, in which the superlative -_(e)st is non-adjacent to the suppletive root be-. (That is, they are separated by a zero comparative marker—in many languages, such as Persian, this containment relationship is morphologically overt: kam-tar-in ‘few-CMPR-SPRL’; fewest’.)

In summary, in the comparative domain, two impossible configurations with two distinct etiologies are observed: *ABA patterns are not possible as a result of the containment effect, and *AAB patterns are not possible as a result of a locality condition on allomorphy.

2. Kintax in Lower Arrernte as a morphological contiguity domain. Arrernte (elsewhere called Aranda, Arunta, or Arirnta) describes a group of Pama-Nyungan varieties spoken by 4,500 people (2016 Australian census). This study focuses on the Lower Arrernte variety, also called Alenjerntarrpe, which has been dormant since 2011. There is mounting interest in and capacity being built for an awakening project.

Kintax refers to the morphosyntactic specification of formal features expressing kinship relations. Nonsingular pronouns in this variety are sensitive to two kintactic dimensions: generational cyclicity and patrimoietiy (i.e., membership in the same line of patrilineal descent). Crucially, it is proposed here that generation and patrimoietiy are active as privative [AGNATIC] and [HARMONIC] features.

(1) Kintactic categories in Lower Arrernte
a. [AGNATIC]: A set of referents is agnatic iff all members of the set belong to the same patrimoietiy (i.e., they can all trace their lineage back to the same male ancestor).

b. [HARMONIC]: A set of referents is harmonic iff all members of the set belong to even-numbered generations.

Given the definitions in (1), an example of an agnatic set is a man and his father. An example of a harmonic set is a man and his brother. These categories are independent of one another, and are expressed by three sets of pronouns, historically called Set I, II, and III (cf. Hale 1966, Yallop 1977, Strehlow 1942).

(2) Nonsingular pronoun sets in Lower Arrernte

1 All abbreviations follow Leipzig conventions except for the following: AGN = agnatic, CMPR = comparative, H = harmonic, SPRL = superlative.
a. Set I, [AGNATIC, HARMONIC]: All referents belong to the same patrimoiety and even-numbered generations (e.g., a man and his grandson).
b. Set II, [AGNATIC]: All referents belong to the same patrimoiety, but some referents belong to even-numbered generations whereas others belong to odd-numbered generations (e.g., a man and his son).
c. Set III, [:] The group is diverse in its moiety and generational classification (e.g., a man and a non-Australian).

Note that it is Set III that is least marked: it is associated with zero kintactic features and can be applied to the widest variety of sets. Set II is incrementally more restrictive, as it is moiety-specific but generation-nonspecific, and is therefore associated with a single feature. Finally, Set III is maximally restrictive, as it is both moiety- and generation-specific, and is therefore associated with two features. Whereas previous authors have organized these categories in order of decreasing markedness, the feature architecture proposed here corrects their ordering, and thereby reveals the nonsingular pronouns to instantiate AAB-permissive *ABA domain. More rigorous implementations of the features above follow in later sections.

<table>
<thead>
<tr>
<th>Set III</th>
<th>Set II</th>
<th>Set I</th>
</tr>
</thead>
<tbody>
<tr>
<td>1DU</td>
<td>il-anth</td>
<td>il-ak-∅</td>
</tr>
<tr>
<td>1-DU</td>
<td>1-AGN-DU</td>
<td>1-DU.AGN.H</td>
</tr>
<tr>
<td>2DU</td>
<td>mpil-anth</td>
<td>mpil-ak-∅</td>
</tr>
<tr>
<td>2-DU</td>
<td>2-AGN-DU</td>
<td>2-DU.AGN.H</td>
</tr>
<tr>
<td>3DU</td>
<td>al-anth</td>
<td>al-ak-∅</td>
</tr>
<tr>
<td>3-DU</td>
<td>3-AGN-DU</td>
<td>3-DU.AGN.H</td>
</tr>
<tr>
<td>1PL</td>
<td>un-anthir</td>
<td>un-aki-r</td>
</tr>
<tr>
<td>1-PL</td>
<td>1-AGN-PL</td>
<td>1-PL.AGN.H</td>
</tr>
<tr>
<td>2PL</td>
<td>ar-anthir</td>
<td>ar-aki-r</td>
</tr>
<tr>
<td>2-PL</td>
<td>2-AGN-PL</td>
<td>2-PL.AGN.H</td>
</tr>
<tr>
<td>3PL</td>
<td>inn-anthir</td>
<td>inn-aki-r</td>
</tr>
<tr>
<td>3-PL</td>
<td>3-AGN-PL</td>
<td>3-PL.AGN.H</td>
</tr>
</tbody>
</table>

Table 2. AAB suppletion in Lower Arrernte nonsingular pronouns

3. **Lower Arrernte kintax.** The role of generational cyclicity and agnatic kinship in Lower Arrernte kintax is unexceptional in the Australian context (cf. McConvell et al. 2018). Those who are familiar with Lower Arrernte or cognate systems may skip this section.

3.1. **Generational Cyclicity.** By way of example, EGO is harmonic to his grandparents (+2) or grandchildren (−2), and disharmonic to his parents (+1) and children (−1). More generally, a group of people is harmonic if all of its members belong to even-numbered generations, and disharmonic if even a single member belongs to an odd-numbered generation. Cyclicality is also observable in the lexical domain: for instance, *arranga* is both ‘father’s father’ and ‘grandchild from a son’. Harmony features can be implemented by means of modular arithmetic:
(3) Harmony features

a. harmonic: A set of referents is specified for [HARMONIC] iff all members in the group have the following generational specification: \( [G : n \equiv 0 \pmod{2}] \)
   (possible values of \( n = 0, \pm 2, \pm 4 \ldots \))

b. disharmonic: A set of referents has no harmony features iff at least one member of the set has the following generational specification: \( [G : n \equiv 1 \pmod{2}] \)
   (possible values of \( n = 1, \pm 3, \pm 5 \ldots \))

3.2. Patrimoity. The moietal (or skin) system of Lower Arrernte is complex, but only one aspect of it—agnation—is kintactically active in the language. EGO is agnatic to a relative if they share at least one paternal ancestor and precisely zero maternal ancestors. For male EGO, this includes his father (and all male direct ancestors), siblings, paternal (great-)auncles, patrilateral parallel cousins, fraternal niblings, children, and grandchildren begat by his sons. EGO shares a patriline with all such relatives. Although the details of how to implement this are beyond the scope of this work, agnation as a category is likely an elaboration of masculine gender features active in other languages. A group is agnatic if all of its members share a patriline, and non-agnatic if there is even one member who does not.

There are two patrimoities in Lower Arrernte, schematized here as A and B.

(4) Gender & moiety features

a. patrimoity A: A referent who belongs to patrimoity A is specified for [+A].

b. patrimoity B: A referent who belongs to patrimoity B is specified for [−A].

c. agnatic: A set of referents is specified for [AGNATIC] iff all members of the set have the same value of [+A].

d. non-agnatic: A set of referents has no agnation features iff at least one member of the set has a different value of [+A] from the rest, or if at least one member lacks a specification entirely ([∅A]).

Lower Arrernte nonsingulars therefore instantiate cumulating containment, modelable in terms of the hierarchy below:

(5) \( \{\text{PLURAL}\} < \{\text{PLURAL, AGNATIC}\} < \{\text{PLURAL, AGNATIC, HARMONIC}\} \).

Suppletion cannot target the two edges of this linear sequence without also targeting the medial category.

4. Proposal. A realizational morphology with late insertion and a fusion module is assumed here. The feature architecture proposed here is privative, given that Vocabulary items in Lower Arrernte never refer to ‘non-agnatic’ or ‘disharmonic’ features. Interestingly, it emerges that dual is more marked than plural in this language.

(6) Person & number features (adapted from McGinnis 2005 with differences noted)

a. first: [PARTICIPANT, AUTHOR]  (McGinnis: [PARTICIPANT, SPEAKER])

b. second: [PARTICIPANT]

c. third: [ ]

d. singular: [ ]

e. dual: [DUAL]  (McGinnis: [GROUP, MINIMAL])

f. plural: [DUAL, AUGMENTED]  (McGinnis: [GROUP])

Although the logic of McGinnis’s person system is retained, much of the geometry is not. Third
person is associated only with features appropriate to a referring expression, notated here as null. Second person is associated with a [PARTICIPANT] feature. First person is associated with both [PARTICIPANT] and [AUTHOR], the so-called primary dependent of [PARTICIPANT], and serves to further delimit it. In McGinnis’s system, PARTICIPANT is a node, and SPEAKER and ADDRESSEE are respectively the primary and secondary dependents. In the system here, McGinnis’s PARTICIPANT node is Part⁰, and although [AUTHOR] is the primary dependent, there is no secondary dependent, as Lower Arrernte does not contrast clusivity distinctions.

The number features are admittedly unorthodox and deviate from McGinnis’s system substantially. Singular number is associated with no features, although it does maintain the Individuation node (Num⁰). For McGinnis, dual is the most complex: a dual set is a plural set, and therefore associates with primary dependent [GROUP]. Given that it is the smallest possible plural set, it additionally associates with the secondary dependent [MINIMAL]. Plural is less complex than dual, being characterized only by [MINIMAL]. This model is corroborated by languages in which the dual marker transparently contains the plural marker.

(7) **Transparent containment of plural by dual in Modern Hebrew**
   a. shana ‘year’
   b. shna-tayim ‘two years’
   c. shan-im ‘years’

In Lower Arrernte, this containment relationship is reversed: dual -antḥ appears to be contained by plural -anthir. For this reason, plural is treated as the most representationally complex in the feature architecture in (4). Although unorthodox, this proposal is not completely without semantic motivation. First, [DUAL] can be thought of as referring to sets of two referents (i.e., dual sets), and therefore [DUAL, AUGMENTED] refers to sets of greater than two (i.e., plural sets). Another way of thinking about it is that [DUAL] actually refers to plural sets (and is only called dual here for ease of comprehension and commensurability with prior literature), but is restricted to referring to dual sets in this implementation because [DUAL, AUGMENTED] outcompetes it in the context of sets of greater than two.

The feature architecture adumbrated supra can be represented as follows:

(8) **AAB-permitting containment in Arrernte nonsingular pronouns**

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AAB-permitting containment in Arrernte nonsingular pronouns
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In the domain of comparative suppletion, [CMPR] and [SPRL] occupy their own projections, blocking *AAB patterning. Lower Arrernte kintax is an AAB-permissible domain because [AG-
NATIC, HARMONIC] occupy the same projection—giving [HARMONIC] its own projection would strand it too far from the root.

5. **Vocabulary items.** It is now possible to propose realizational rules for this system. The singular pronouns are treated as the elsewhere realizations of the person features:

(9) **Singular pronouns**
   a. \([\text{PARTICIPANT, AUTHOR}] \leftrightarrow \text{atha}\) first person singular
   b. \([\text{PARTICIPANT}] \leftrightarrow \text{unta}\) second person singular
   c. \([\ ] \leftrightarrow \text{irra}\) third person singular

(10) **Allomorphs of the first person**
   a. \([\text{PARTICIPANT, AUTHOR}] \leftrightarrow \text{un} / \text{[DUAL, AUGMENTED]}\) allomorph of first person triggered by plural
   b. \([\text{PARTICIPANT, AUTHOR}] \leftrightarrow \text{il} / \text{[DUAL]}\) allomorph of first person triggered by dual

As previously stated, AAB allomorphy is possible because there is an allomorph of the second person specific to the agnatic-harmonic bundle, but there are no cases of [AGNATIC] or [HARMONIC] triggering stem allomorphy alone.

(11) **Allomorphs of the second person**
   a. \([\text{PARTICIPANT}] \leftrightarrow \text{ar} / \text{[DUAL, AUGMENTED]}\) allomorph of second person triggered by plural
   b. \([\text{PARTICIPANT}] \leftrightarrow \text{mpil} / \text{[DUAL]}\) allomorph of second person triggered by dual
   c. \([\text{PARTICIPANT}] \leftrightarrow \text{ang} / \text{[DUAL, AGNATIC, HARMONIC]}\) allomorph of second person triggered by nonsingular agnatic-harmonic
   d. \([\ ] \leftrightarrow \text{il} / \text{[DUAL, AGNATIC, HARMONIC]}\) allomorph of third person triggered by nonsingular agnatic-harmonic

Note that for rule (11c) to be possible, there must be fusion of the number and kinship nodes in the agnatic-harmonic pronouns (Set III), or otherwise an adjacency issue would arise.

(12) **Allomorphs of the third person**
   a. \([\ ] \leftrightarrow \text{inn} / \text{[DUAL, AUGMENTED]}\) allomorph of third person triggered by plural
   b. \([\ ] \leftrightarrow \text{al} / \text{[DUAL]}\) allomorph of third person triggered by dual
   c. \([\ ] \leftrightarrow \text{il} / \text{[AGNATIC, HARMONIC]}\) allomorph of third person triggered by agnatic-harmonic
   d. \([\ ] \leftrightarrow \text{il} / \text{[DUAL, AGNATIC, HARMONIC]}\) allomorph of third person triggered by nonsingular agnatic-harmonic

The fusion of kinship and numbers in the agnatic-harmonic set proceeds as follows:

(13) **Kinship-number fusion**
   a. \([\text{DUAL, AGNATIC, HARMONIC}] \leftrightarrow \text{rn} / \text{[PARTICIPANT, AUTHOR]}\) allomorph of dual agnatic-harmonic triggered by first person
   b. \([\text{DUAL, AGNATIC, HARMONIC}] \leftrightarrow \text{athir}\) elsewhere form of dual agnatic-harmonic
   c. \([\text{DUAL, AUGMENTED, AGNATIC, HARMONIC}] \leftrightarrow \text{ar} / \text{[PARTICIPANT, AUTHOR]}\) allomorph of plural agnatic-harmonic triggered by first person
d. \([\text{DUAL}, \text{AUGMENTED}, \text{AGNATIC}, \text{HARMONIC}] \leftrightarrow \text{arrii}\) elsewhere form of plural agnatic-harmonic

In the agnatic forms (Set II), number and kinship are exponed separately. In the non-agnatic forms (Set I), only number is exponed.

(14) **Agnation & number**

a. \([\text{AGNATIC}] \leftrightarrow \text{ak}\) elsewhere form of agnatic

b. \([\text{DUAL}, \text{AUGMENTED}] \leftrightarrow r / \_\_ \ [\text{AGNATIC}]\) allomorph of PL triggered by agnatic

c. \([\text{DUAL}, \text{AUGMENTED}] \leftrightarrow \text{anthir}\) elsewhere form of plural

d. \([\text{DUAL}] \leftrightarrow \emptyset / \_\_ \ [\text{AGNATIC}]\) allomorph of dual triggered by agnatic

e. \([\text{DUAL}] \leftrightarrow \text{anth}\) elsewhere form of dual

The allomorphy of the dual manifested by these rules may look fishy and convenient, but they are not incredibly bizarre in the context of Arandic more broadly. Strehlow (1942) lists -antatharra as a dual suffix available across all varieties of Arrernte. This suffix has an additional reduced form -thara in Lower Southern Arrernte (cf. era-thara ‘they two’). Both forms are cognate with anth∼athir∼∅, the strings associated with the dual in this analysis of Lower Arrernte.

Similarly, the plural in Western Arrernte can be -irbera or -antirbera. The Lower Southern Arrernte cognate is also reduced: -rea following nouns and -na following pronouns (e.g., et-na ‘they’). These forms are cognate with the anthir∼r∼∅ in Lower Arrernte.

5.1. **Unmarkedness of Set III.** Earlier, it was argued that Set III had to be the unmarked set, as it was compatible with the widest varieties of groups of referents. Now that a Vocabulary fragment has been proposed, another argument in favor of the unmarkedness of Set III can be provided. If Table 2 were reversed (i.e., presented in Hale, Yallop, and Strehlow’s original order), Lower Arrente nonsingular pronouns would instantiate an ABB-permitting *ABA domain, as shown below in Table 3.

<table>
<thead>
<tr>
<th></th>
<th>Set I</th>
<th>Set II</th>
<th>Set III</th>
</tr>
</thead>
<tbody>
<tr>
<td>1DU</td>
<td>ili-rn</td>
<td>il-ak</td>
<td>il-anth</td>
</tr>
<tr>
<td>2DU</td>
<td>ang-athir</td>
<td>mpil-ak</td>
<td>mpil-anth</td>
</tr>
<tr>
<td>3DU</td>
<td>il-athir</td>
<td>al-ak</td>
<td>al-anth</td>
</tr>
<tr>
<td>1PL</td>
<td>un-ar</td>
<td>un-aki-r</td>
<td>un-anthir</td>
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<td>2PL</td>
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<td>ar-aki-r</td>
<td>ar-anthir</td>
</tr>
<tr>
<td>3PL</td>
<td>il-arrii</td>
<td>inn-aki-r</td>
<td>inn-anthir</td>
</tr>
</tbody>
</table>

Table 3. Lower Arrernte nonsingualars in markedness-decreasing order

In this system, ang- becomes the elsewhere form of the second dual, whereas mpil- becomes the co-suppletive form for Set II and III.

(15) **Elsewhere ang- produces an unnatural class**

a. \([\text{PARTICIPANT, AUTHOR}] \leftrightarrow \text{mpil / AGNATIC-DISHARMONIC, NON-AGNATIC}\)

b. \([\text{PARTICIPANT, AUTHOR}] \leftrightarrow \text{ang}\)

This is undesirable for two reasons—first, it joins agnatic(-disharmonic) and non-agnatic together in an unnatural class: whether the featural system chosen is binary or privative, it is hard to
group together an agnatic set with a non-agnatic set. Agnatic-disharmonic forms refer to sets in which all members have a matching value of the \([\pm A]\) feature, whereas non-agnatic forms refer to groups in which there is at least one mismatched referent. Given that these feature specifications conflict, rule (15a)—and in particular, the specificational context of (15a), which requires \([\text{AGNATIC}]\) to be both present and not present—is incoherent.

Second, it requires making reference to non-agnacy, which is a category that occurs nowhere else in the language, either as an overt form or as a trigger for allomorphy. It becomes clear that the novel ordering in Table 2 must be the correct, markedness-increasing one.

6. Conclusion. The major findings of this study are as follows: first, Lower Arrernte nonsingular pronouns form an AAB-permissive *ABA domain. This is only apparent if the three sets of pronouns are ordered as follows: non-agnatic < agnatic < agnatic-harmonic. It has been demonstrated that this novel ordering is morphosemantically motivated.

In this way, this morphological contiguity domain patterns with Bobaljik (2012:225)’s account of AAB-permissive ablaut in English, in which tense and finiteness are bundled together and condition allomorphy together. Representative data are given below in Table 4. Phrase marker (16a) shows that finiteness can co-trigger verb stem allomorphy with past. Phrase marker (16b) shows that harmony can co-trigger pronominal stem allomorphy with agnacy—once fusion of number and kinship has occurred. This study therefore contributes to the ongoing project of characterizing the etiological and derivational heterogeneity of surface *ABA environments.

<table>
<thead>
<tr>
<th>Present</th>
<th>Participle</th>
<th>Past</th>
<th>Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>hit</td>
<td>hit</td>
<td>hit</td>
<td>AAA</td>
</tr>
<tr>
<td>shine</td>
<td>shone</td>
<td>shone</td>
<td>ABB</td>
</tr>
<tr>
<td>run</td>
<td>run</td>
<td>ran</td>
<td>AAB</td>
</tr>
<tr>
<td>sing</td>
<td>sung</td>
<td>sang</td>
<td>ABC</td>
</tr>
<tr>
<td>shine</td>
<td>shone</td>
<td>shone</td>
<td>ABB</td>
</tr>
<tr>
<td>swell</td>
<td>swollen</td>
<td>swelled</td>
<td>ABA</td>
</tr>
</tbody>
</table>

Table 4. Putative AAB-permissive ablaut in English

(16) Tense-finiteness & agnation-harmony bundling

a. 
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    V
   / \                     / \\
  PAST(Finite) V     \   VERB
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References


