

# The Ergative System in Balochi from a Typological Perspective

Agnes Korn

► To cite this version:

Agnes Korn. The Ergative System in Balochi from a Typological Perspective. Iranian Journal of Applied Language Studies, Linguistics Society of Iran, 2009, 1, pp.43-79. <[http://ijals2.usb.ac.ir/volume\\_19.html](http://ijals2.usb.ac.ir/volume_19.html)>. <hal-01340943>

HAL Id: hal-01340943

<https://hal.archives-ouvertes.fr/hal-01340943>

Submitted on 2 Jul 2016

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Iranian  
Journal  
of Applied  
Language  
Studies

Iranian Journal of Applied Language Studies

VOL.1 NO.1 - Spring and Summer 2009



Linguistics Society of Iran



University of  
Sistan and Baluchestan



Uppsala University



# The Ergative System in Balochi from a Typological Perspective \*

Agnes Korn

Frankfurt a.M. University, Germany

a.korn@em.uni-frankfurt.de

## Abstract

For the Western Iranian languages the transition from the Old Iranian to the Middle-Iranian period is characterised by – among other things – the loss of word-final syllables. This loss had a far-reaching impact on the nominal and verbal systems since it caused the loss of categories which had been expressed by suffixes. The consequences include the emergence of the so-called ergative system.

Although descriptions of the ergative construction in Balochi do exist, there is no treatment yet which takes into account the material of the different dialects. Furthermore, the ergative construction in Balochi has been compared with data from Old Iranian, but not with data from Middle Iranian languages, and the development from the Middle Iranian stage to the different types found

---

\* This article (originally intended for a collective volume that has not been published) was written in 2003 and has been available online since then. Except for a few minor adjustments, it is published here unchanged. Subsequent literature may be found in Korn 2008. For a description of the speech of an Eastern Balochi informant with *man* as dir. and obl. of the 1sg. pronoun, but potentially *tā* vs. *taw* for the 2sg. one, see Bashir 2008. – I would like to express my thanks to Jost Gippert, Carina Jahani, Lutz Rzehak and an anonymous reviewer for discussion of topics treated in this paper. – In this paper, the transcription of all examples has been unified. The "verbal element" *a*, which marks the imperfect aspect in some dialects and belongs morphologically to the following verb form but phonologically to the preceding word (cf. Buddruss 1988:62ff.), is noted as an independent word here. A list of abbreviations is at the end of the article. The sources used are quoted in the subsections of section 1.

in present-day Balochi has also not yet been studied. The aim of this paper is therefore to present the data from the Balochi dialects as far as they are known today and to update, complete (and in some points, correct) previous descriptions of the matter.

## 0. Introduction

As with many other modern Iranian languages, the majority of the Balochi dialects show a phenomenon called split ergativity.<sup>1</sup> This may be defined as follows: in all tenses formed from the present stem (PR), there is a nominative construction, i.e. the subject is in the direct case (also called nominative or *rectus*) and the object (if any) is in the oblique case;<sup>2</sup> the verb agrees with the subject. In the tenses formed from the past stem (PT),<sup>3</sup> however, there is an

---

<sup>1</sup> The ergative construction in Balochi has been treated by Moškalo and Farrell (the latter apparently without knowledge of the former's study). Moškalo 1985 was written at a time (1981) when major treatments of Balochi dialects had not yet appeared (Southern Balochi: Collett 1983 (Kechi dialect of Oman) and Farrell 1990 (Karachi Balochi), Western Balochi: Nawata 1981 and Buddruss 1988 on the Balochi of Afghanistan, Iranian Balochi: Jahani 2003 and Baranzehi 2003), so some dialect data were missing. The same applies to the treatment of Balochi in Bossong 1985. The focus of Farrell's 1995 study is mainly on Southern Balochi as spoken in Karachi. Both Moškalo 1985 and Farrell 1995 use data from Old Persian but not from Middle Iranian languages in their discussions of the origin of the Balochi ergative construction.

<sup>2</sup> Similar to the situation found e.g. in New Persian, Hindi and Turkish, not all objects are marked in Balochi ("differential object marking"), i.e. only definite direct objects are marked ("identified object marking", cf. Farrell 1995:219) while indefinite objects show no ending (i.e. appear in the direct case): "the more definite and the more animate the object the more likely it is to have the [obl.] suffix" (Farrell 1990:65). See also fn. 8.

<sup>3</sup> Tenses formed from the Balochi past stem (which ends in *-t*) include the following (terminology as in Farrell 1990): simple past (e.g. *gušt* "said"), past subjunctive (*bu-gušt-ēn* "would have said"), and also encompass the compound tenses formed from the perfect stem (ending in *-t-ag-* if a suffix follows, otherwise mostly in *-t-a*), i.e. present perfect (*gušt-a* "has said"), past perfect (*gušt-a bīt-a / gušt-ag-at / gušt-ag-ā* "had said"). Translations of examples are

ergative pattern, i.e. only the subject of intransitive verbs appears in the direct case, whereas the logical subject (agent) of transitive verbs<sup>4</sup> appears in the oblique case and the logical object in the direct case, but, as will be shown below, sometimes also in the oblique<sup>5</sup> or the object case<sup>6</sup> (see section 1.); indirect objects are in the oblique or object case. The verb itself is without ending, which is equivalent to the form of the 3sg. It may agree in number with a 3rd person object in that it can take the 3pl. suffix agreeing with a 3pl. object (Table 0.1).

verb	cases used	verbal agreement
intransitive	subject: direct case	with the subject
transitive	agent: oblique case object: direct, oblique or object case	with the object (optional)

**Table 0.1:** Use of cases in the tenses formed from the past stem in Balochi

meant rather literally, the verb forms being rendered by the corresponding English constructions, without implying that the functions are the same.

<sup>4</sup> Some verbs are treated as transitive (i.e. with logical subject in the obl. case) which would be considered intransitive in other languages, e.g. *kandag/handag* "to laugh", *kullag* "to cough", *gwārag* "to rain" (Moškalo 1985:118); similar observations may be made for Pashto, including verbs like *xandəl* "to laugh", *prəčəl* "to sneeze", *nacəl* "to dance" (Lutz Rzehak, personal communication). Conversely, some verbs borrowed from Urdu which one might assume to be transitive are treated as intransitives as they are in Urdu (Farrell 2003:199). The (in)transitivity of periphrastic verbal constructions and complex verbs depends on the properties of the finite verb (see section 2.5).

<sup>5</sup> Note that in spite of Farrell's notes (1995:222, 224), sentences with both the agent and the object in the oblique case do occur in several Balochi dialects, cf. the examples in Tables 1.1ff.

<sup>6</sup> According to Farrell 1995:223, plurality of an object tends not to be marked on the verb if a plural object is in the object case. The other studies do not discuss this situation.

In this article, mixed constructions are subsumed under "ergative"; i.e. unless there is a nominative pattern with the subject agreeing with the verb, transitive constructions in the past domain are treated as variations of Balochi ergativity. This includes e.g. patterns with agent and object in the same case provided that the verb tends to agree with the object, not with the subject. For more discussion of the mixed patterns, see Korn 2008.

There is no agreement yet about the number and the terminology of cases in Balochi, let alone on a supradialectal level. For the purposes of this paper, the following case system will be assumed as underlying all Balochi dialects (Table 0.2).<sup>7</sup>

	direct	oblique	object <sup>8</sup>	genitive	vocative
singular	-∅ <sup>9</sup>	-ā	-ārā	-ay <sup>10</sup>	-∅
plural		-ān <sup>11</sup>	-ān(r)ā	-ānī	-ān

**Table 0.2:** Basic case system of Balochi

In the case of the personal pronouns of the 1st and 2nd persons, the variation between the dialects does not allow the establishment of a common system. Leaving aside some less important variants, the forms for the three main groups of dialects (Western (WB), Southern (SB) and Eastern (EB) Balochi) are as in Table 0.3.

The personal pronouns appear in the object case when constituting the direct or indirect object. In some dialects it is the oblique case that is found in agent function and after prepositions, whilst in other dialects it is the direct

<sup>7</sup> For the case system of Iranian Balochi, see section 1.4.

<sup>8</sup> This case (called dative, accusative or dative/accusative in the sources) is found in most Balochi dialects and is used to a varying degree (more often in the sg. than in the pl.) instead of the oblique if an object (direct or indirect) is to be emphasised.

<sup>9</sup> Note that in the direct case, number is not marked on nouns and demonstrative pronouns: e.g. the demonstrative pronoun *ā* (also used as personal pronoun for the 3rd person) may be singular or plural. The number may be inferred from the verbal ending if the noun/pronoun is the subject of a nominative sentence or the object of an ergative sentence. Since agreement is optional in the latter case, ergative sentences without a suffix on the verb are ambiguous as far as the number of the agent is concerned.

<sup>10</sup> The ending of the gen.sg. varies considerably, ranging from *-ay* (WB dialects) via *-ē* (SB and EB) and *-ī* (only in some cases of names etc. in WB) to *-a* or even zero in southern WB (cf. Jahani 1994:288).

<sup>11</sup> In several Bal. dialects, long vowel + *n* is pronounced as nasalised vowel especially in preconsonantal position.

case. For more discussion, see sections 1.1-1.4, 2.1.

			direct	oblique	object	genitive
singular	1st	EB	<i>mā, ma, mā</i>	<i>mā</i>	<i>manā, manā</i>	<i>m(a)nī</i>
		WB	<i>man</i>		<i>manā</i>	
		SB	<i>man</i>	<i>manā</i>	<i>manārā</i>	
	2nd	EB	<i>t<sup>h</sup>aw, t<sup>h</sup>a</i>		<i>t<sup>h</sup>arā</i>	<i>t<sup>(h)</sup>aī, t<sup>(h)</sup>ī</i>
		WB	<i>taw, ta</i>		<i>tarā</i>	
		SB	<i>taw, tō</i>	<i>t(a)rā</i>	<i>tarārā</i>	
plural	1st	EB	<i>mā</i>		<i>mār(ā)</i>	<i>(am)may, mē</i>
		WB	<i>(am)mā</i>		<i>(am)mārā</i>	
		SB	<i>mā</i>	<i>mārā</i>		
	2nd	EB	<i>š(a)wā, šā</i>		<i>š(a)wār, šār</i>	<i>š(a)wāī, šāī</i>
		WB	<i>š(u)mā</i>		<i>šumārā</i>	<i>šumay, šumē</i>
		SB	<i>šumā</i>	<i>šumārā</i>		

**Table 0.3:** Inflection of the personal pronouns in Balochi

The word order in ergative constructions is agent – object – verb in unmarked cases, but other sequences of elements also occur (Moškalo 1985:117f.).

## 1. The ergative construction in the Balochi dialects

The use of the ergative construction differs markedly depending on the dialects. So the system found in the three main groups of dialects will be discussed first.

### 1.1 Eastern dialects

According to the possibly outdated data we possess of the Eastern dialects, the ergative construction is used throughout (Table 1.1). The agent (nouns and



pronouns) is in the oblique case.<sup>12</sup>

agent	object		verbal ending		
obl.:	dir.: -∅		agreeing with 3 <sup>rd</sup> person object:		
sg. - <i>ā</i>	obl./obj.:		sg. -∅		
pl. - <i>ā̃</i>	sg. - <i>ār(ā)</i>	pl. - <i>ant</i>			
	pl. - <i>ā̃(rā)</i>				
examples: <sup>13</sup>					
<i>mardumā</i>	Os	<i>nayan</i>	D	<i>wārt<sup>h</sup>a</i> <sup>14</sup>	"the man has eaten bread"
<i>mā</i>	Os	<i>zahmā̃</i>	Op	<i>ārṭay-ant</i> <sup>15</sup>	"I have brought the swords"
<i>mā</i>	Os	<i>mardā̃rā</i>	Ap	<i>jaṭa</i> <sup>16</sup>	"I have struck the men"
<i>bādšāhā</i>	Os	<i>manā̃</i>	As	<i>k<sup>h</sup>ušt<sup>h</sup>a</i> <sup>17</sup>	"the king has killed me"
<i>šā</i>	Dp			<i>zānt<sup>h</sup>ō k<sup>h</sup>uṭa</i> <sup>18</sup>	"have you done it knowingly?"
<i>ēšīā</i>	Os	<i>č<sup>h</sup>ixtar dān</i>	D	<i>društ<sup>h</sup>a</i> <sup>19</sup>	"how much grain has s/he ground?"
<i>āhā̃</i>	Op	<i>tōbī</i>	D	<i>jaṭa</i> <sup>20</sup>	"they have dived"
<i>āhīā</i>	Os	<i>t<sup>h</sup>arā</i>	As	<i>hēcī na dāṭa</i> <sup>21</sup>	"he/she has given you nothing"
<b>Table 1.1:</b> The ergative construction in Eastern Balochi dialects					

<sup>12</sup> In one example in Elfenbein 1966:14, the pronoun of the 1sg. is in the direct case (i.e. *man*) when functioning as an agent. It is not clear, however, where this example comes from; both Grierson 1921 and Gilbertson 1923 note the use of the oblique also for the pronoun of the 1sg.; see the examples below. Note that the examples given in Elfenbein 1966:11ff. are the same sentence for all dialects discussed, so they do not seem to be authentic data. See also fn. \* above.

<sup>13</sup> In the examples to follow, underlining marks oblique (glossed O) and object (A) endings on the agent and the object, suffixed pronouns in agent function (see section 1.5) and verbal agreement with the object. D denotes direct case, which distinguishes the singular (s) from the plural (p) only in the case of pronouns of the 1st and 2nd persons.

<sup>14</sup> Example from Dames 1881:27.

<sup>15</sup> Example from Gilbertson 1923:113. *mā* is the obl. of the pronoun of the 1sg., the direct case of which is *ma*, *mā* or *mā̃* (Grierson 1921:343).

<sup>16</sup> Example from Gilbertson 1923:197.

<sup>17</sup> Example from Grierson 1921:352.

<sup>18</sup> Example from Gilbertson 1923:51.



The verb has a plural suffix (optional according to Gilbertson 1923:114) if the object is 3rd plural. It is noteworthy that the object may appear either in the direct or in the object case (Gilbertson 1923:114, Grierson 1921:352), if it is a plural object also in the oblique (Gilbertson 1923:197), reflecting some sort of mixing with the nominative construction (Geiger 1901:239).<sup>22</sup>

Grierson 1921:357ff. is the only author to report personal endings agreeing with the agent (which is invariably in the obl.), as in example (1), where *-ā̃* is the 1sg. ending:

- 1) *mā k<sup>h</sup>ušt<sup>h</sup>-ay-ā̃*  
 I.Os kill.PT-PF-1s  
 "I have killed"

All examples cited above are based on the perfect stem. A simple past tense is not found in the dialects described by Dames and Gilbertson. Grierson 1921:358, however, notes a simple past (describing it as a kind of variant of the present perfect), e.g. ex. (2), showing verbal agreement with the agent, which is in the oblique case.

- 2) *mā k<sup>h</sup>ušt<sup>h</sup>-ā̃*  
 I.Os kill.PT-1s  
 "I killed"

## 1.2 Southern dialects

As in the Eastern dialects, the ergative construction is used rather consistently in the Southern dialects (Table 1.2). The agent is in the obl. if it is a noun or a pronoun of the 3rd person. The personal pronouns of the 1st and 2nd persons, however, appear in the direct case when they are agents of a transitive verb.

---

<sup>19</sup> Example from Gilbertson 1923:57.

<sup>20</sup> Example from Gilbertson 1923:59. The literal meaning is "they have struck a dive".

<sup>21</sup> Example from Gilbertson 1923:68.

<sup>22</sup> The mixed types between nominative and ergative construction are discussed in section 3.

agent		object		verbal ending	
obl.:		dir.:		agreeing with 3 <sup>rd</sup> person object (optional):	
sg. <i>-ā</i>		-∅		sg. -∅	
pl. <i>-ān</i>		obl./obj.:		pl. <i>-ant</i>	
pron. 1 <sup>st</sup> , 2 <sup>nd</sup> :		sg. <i>-ā(rā)</i>			
dir.		pl. <i>-ān(rā)</i>			
examples:					
<i>alīā</i>	Os	<i>gūnī</i>	D	<i>burt-ant</i> <sup>23</sup>	"Ali took the sacks"
<i>man</i>	Ds	<i>xat</i>	D	<i>likit-ā</i> <sup>24</sup>	"I wrote letters"
<i>man</i>	Ds	<i>tarā</i>	Os	<i>gušt</i> <sup>25</sup>	"I told you"
<i>kučikā</i>	Os	<i>hamā jīnikārā</i>	As	<i>dīst</i> <sup>26</sup>	"the dog saw that girl"
<i>tō</i>	Ds	<i>āyrā</i>	As	<i>ārt</i> <sup>27</sup>	"you brought it"
<i>āyā</i>	Os	<i>gōk</i>	D	<i>kušt</i> <sup>28</sup>	"s/he killed the cow"
<i>āyān</i>	Op	<i>manā</i>	Os	<i>gušt</i> <sup>25</sup>	"they told me"
<i>bačikā</i>	Op	<i>mārā</i>	Op	<i>dīst</i> <sup>29</sup>	"the boys saw us"
<b>Table 1.2:</b> The ergative construction in Southern Balochi dialects					

The object is usually in the direct case. Collett 1983:21 notes that the object is also found in the oblique or object case, while according to Farrell 1995:221f. objects cannot take the oblique, but only the object case, which happens in case of a special focus; pronouns of the 1st and 2nd persons are always in the oblique

<sup>23</sup> Example from Collett 1983:21.

<sup>24</sup> Example from Farrell 1990:40. Examples such as the following suggest that if plurality of the object is expressed in some way, there is no plural marking on the verb (Farrell 1990:40):

*man bāz xat likkit*  
 I.Ds much letter.D write.PT  
 "I wrote many letters."

<sup>25</sup> Example from Collett 1983:9.

<sup>26</sup> Example from Farrell 1995:221.

<sup>27</sup> Example from Collett 1983:10.

<sup>28</sup> Example from Farrell 1990:39.

<sup>29</sup> Example from Farrell 1995:224.

when denoting the object (Farrell 1990:40, cf. also fn. 5). The plurality of a 3rd person object may (Farrell 1990:40) or should (Collett 1983:21) be indicated on the verb.

The Balochi of Karachi shows a certain degree of dialect mixture, and many speakers use the nominative construction alongside the ergative one in the present perfect (Farrell 1990:49), somewhat parallel to what has been observed by Grierson for the Eastern dialects. Conversely, Collett (1983:22) notes that intransitive verbs are also found without personal endings in the present perfect: *man šuta(g)* instead of *man šutag-un* "I have gone". It is not entirely clear whether Collett intends to say that the omission of the endings is limited to some frequent verbs, or whether there are discourse restrictions for such constructions; if the latter, one might perhaps interpret them as conjunctive participles (cf. sections 2.6 and 3.).

### 1.3 Western dialects

It is chiefly in the Western Balochi dialects that the ergative construction is in competition with the nominative one (Table 1.3.1). Some dialects, viz. the dialects of Turkmenistan and Afghanistan (Sokolov 1956:86, Nawata 1981:19, Buddruss 1988:60), have lost the ergative system altogether and switched to a nominative system instead.<sup>30</sup>

According to Barker / Mengal 1969/I:281ff., 347ff. and Farrell 2003:198, the nominative structure is also the unmarked construction of the Western Balochi dialects of Pakistan. Nevertheless, ergative constructions are found, and their occurrence seems to depend on questions of discourse and style (Barker / Mengal 1969/I:347f., Farrell 1995:237ff.); they are, for example, optionally used

---

<sup>30</sup> This does not imply that ergative constructions are entirely absent from Afghanistan Balochi; they are in fact found in songs and epic poetry, which are recited on certain occasions (Rzehak 1998:178).

in connected narratives but not in isolated sentences (Farrell 1995:236f.).<sup>31</sup>

subject	object	verbal ending
dir.: -∅	obl.: sg. <i>-ā</i> pl. <i>-ān</i>	agreeing with the subject: sg. <i>-un, -ay, -(ī)t</i> pl. <i>-an, -it, -ant</i>
examples:		
<i>ta</i>	D/Os <i>murgā</i>	Os <i>pakkī-ay</i> <sup>32</sup> "you cooked the chicken"
<i>man</i>	D/Os <i>zāgay guṭā</i>	Os <i>gīpt-un</i> <sup>33</sup> "I took the throat of the son"
<i>ā</i>	D <i>manī habarā</i>	Os <i>na-handī-ant</i> <sup>34</sup> "they did not laugh at my remark"
<i>ā</i>	D <i>uštīrān</i>	Op <i>wāpēnt-ant</i> <sup>35</sup> "they made the camels lie down"
<i>man</i>	D/Os <i>watī mēšā</i>	Op <i>mārit-un</i> <sup>36</sup> "I counted my (lit.: own) sheep"
<b>Table 1.3.1:</b> The nominative construction in Western Balochi dialects		

It does not seem to be entirely clear, however, whether this description adequately accounts for the occurrences of ergative constructions in all WB

<sup>31</sup> Note that the ergative construction is not fully understood by Barker / Mengal, who use terms like "optional omission of personal suffixes from the verb", the obl. being used for "marking the subject of certain types of verbs" (Barker / Mengal 1969/I:347).

<sup>32</sup> Example from Sokolov 1956:87.

<sup>33</sup> Example from Buddruss 1988:22, excerpt from the sentence

*guṭān man gīpt-un ē sardār-ay zāg-ay guṭ-ā*  
then I.D/Os seize.PT-1s DEM chief-GENs child-GENs throat-Os  
"then I took the throat of the sardar's son"

<sup>34</sup> Example from Barker / Mengal 1969/I:281, lit.: "They did not laugh my word."

<sup>35</sup> Example from Farrell 1995:238. The complete sentence is:

*šār-ē nāzīnkā ki āt-ant uštīr-ān ā wāpēnt-ant*  
town-GENs near SUB come.PT-3p camel-Op DEM.D sleep.CAUS.PT-3p  
"when they came near to the city, they caused the camels to sleep [i.e. to kneel down to be unloaded]"

<sup>36</sup> Example from Barker / Mengal 1969/I:281.

dialects and/or types of text.<sup>37</sup> In the ergative constructions which do occur, the object is either in the direct or in the oblique case. Agreement with the object is not found (Barker / Mengal 1969/I:350).<sup>38</sup> Conversely, there are cases where the verb agrees with the (ergative) agent (Table 1.3.2).

agent		object		verbal ending	
obl.:		dir.:		∅	
sg. -ā		∅			
pl. -ān		obl.:			
pron. 1 <sup>st</sup> , 2 <sup>nd</sup> :		sg. -ā			
dir.		pl. -ān			
examples:					
<i>bačakkā</i>	Os	<i>watī dantānā</i>	Op	<i>prōšt</i> <sup>39</sup>	"the boy broke his (own) teeth"
<i>ḍrēwarā</i>	Os	<i>lārī(ā)</i>	D/Os	<i>āwurt</i> <sup>40</sup>	"the driver brought the lorry"
<i>sābirā</i>	Os	<i>ē hawāl</i>	D	<i>uškī</i> <sup>41</sup>	"Sabir heard this news"
<i>man</i>	Ds	<i>tarā</i>	As	<i>gušt</i> <sup>42</sup>	"I told you"
<i>āwā</i>	Op	<i>kalāt-ē</i>	D	<i>bastagat-ant</i> <sup>39</sup>	"they had built a fort"
<b>Table 1.3.2:</b> The ergative construction in Western Balochi dialects					

As the nominative construction is used side by side with the ergative one, the interpretation of a sentence like (3) as "your (sg.) father has killed his/her brother" (ergative) or "his/her brother has killed your father" (nominative, the

<sup>37</sup> In some WB texts in Elfenbein 1990/I (e.g. no. 5, 8) the ergative construction is used for the most part, although not entirely consistently. This contrasts with observations by Farrell 1995:238 that in a longer narrative text one will find only isolated examples of ergative constructions. The conditioning factors are not yet clear.

<sup>38</sup> Elfenbein 1966:19 is the only author who claims that the verb may agree with the object also in Western Balochi.

<sup>39</sup> Example from Barker / Mengal 1969/I:348.

<sup>40</sup> Example from Barker / Mengal 1969/I:349.

<sup>41</sup> Example from Elfenbein 1990/I:62/5 (story in the dialect of Kharan).

<sup>42</sup> Example from Elfenbein 1990/I:104/100 (story in the dialect of Panjgur).

object emphasised by its position in the sentence) depends on context and on intonation (Barker / Mengal 1969/I:350).

- 3) *tai*         *piss-ā*       *āī*           *brās*       *kušt-a*  
       you.GENs   father-Os   DEM.GENs   brother.D   kill.PT-PF

#### 1.4 Iranian Balochi<sup>43</sup>

It is not yet entirely clear which Balochi dialects are spoken in Iran and what exactly their respective features are. From the evidence collected so far, it seems that they exhibit differing degrees of mixture between the ergative and the nominative construction. The picture is blurred by the fact that the distinction between direct and oblique case tends to be lost and the cases tend to merge:<sup>44</sup> the oblique plural ending is becoming a general plural marker,<sup>45</sup> and the oblique singular is not marked in a number of functions (e.g. in locative

<sup>43</sup> Iranian Balochi has been influenced by Persian in a number of respects, including the pronunciation of the vowels, so that *i*, *u*, *ay* of the other dialects are pronounced as *e*, *o*, *ey*, respectively, in Iranian Balochi (cf. Jahani 2003:119 note 27, Baranzehi 2003:81).

<sup>44</sup> The situation is thus similar to the one found in Middle Persian and Parthian; it is likely to have taken place under the influence of New Persian (cf. Jahani 2003:121ff.).

<sup>45</sup> An example which shows what is the obl.pl. in other Balochi dialects in the function of nominative plural is:

<i>angrēz-ey</i>	<i>haḍḍ-ān</i>	<i>hanga</i>	<i>hamā</i>	<i>seng-ānī</i>	<i>čērā</i>	<i>wadī</i>	<i>a</i>	<i>bay-ant</i>
English-	bone-Np	still	DEM	stone-	under	found	IPF	become.PR-
GENs				GENp				3p

"the bones of the English are still found under those stones" (Jahani 2003:122)

Although the generalisation of *-ān* as plural marker is far-reaching in Iranian Balochi, examples without ending are also found, e.g.

<i>zemestān-ey</i>	<i>rōč</i>	<i>gwanḍ-an</i>
winter-GENs	day.D	short-COP3p

"the winter days are short" (Jahani 2003:122)

In Sarāwānī, *-ān* is used as plural marker throughout (see below).

use, with or without prepositions).<sup>46</sup> Indirect and identified direct objects are marked with the endings of the obl. or obj. sg. and the obj.pl., respectively. Iranian Balochi dialects (IrB) may therefore be said to possess a nominative and an object case (Table 1.4.1) instead of a system composed of dir., obl. and obj. cases in the other dialects. In addition to the genitive construction, the *izāfa* construction is used (cf. Jahani 1994).<sup>47</sup>

	nominative	object	genitive
singular	-∅	-ā(rā)	-ey
plural	-ān	-ānā	-ānī

**Table 1.4.1:** The case system of Iranian Balochi

In contrast to this system, the demonstrative pronouns seem to exhibit four cases in the singular: the pronoun *ā* has the dir. *ā*, the obl. and gen. *āī*, and the obj. *āīrā*. In fact, however, the dir. form is mainly found in elicited data, while in authentic texts the obl. form is found in general subject function.<sup>48</sup> Parallel to the nouns, the nom.pl. of the demonstrative pronoun is *āyān / āwān*. The nom.

<sup>46</sup> The use of the direct case after prepositions has also been noted by Buddruss (1988:53f.) for Afghanistan Balochi (e.g. *pa laṭ* "with the stick"), although, as a rule, the obl. is used here (e.g. *pa minat-ā* "with effort") as in the other WB dialects (Nawata 1981:30, Sokolov 1956:64, Barker / Mengal 1969/I:72).

<sup>47</sup> The loss of the genitive is complete in the Central Sarāwānī dialect (which thus has a case system composed of only nom. and obj.) whereas the dialect spoken in Dehwar and the Soran Valley of Iranian Balochistan uses the genitive (Baranzehi 2003:81f.). Note that in this paper, the term (Central) Sarāwānī (Sar.) denotes the dialect of the Sarāwān valley as described by Baranzehi 2003 whereas the dialect called Sarāwānī by Spooner 1967 and Elfenbein is rather a mixture of several Iranian Balochi dialects (cf. Elfenbein 1966:20).

<sup>48</sup> Cf. (both Jahani 2003:121f.):

*āī*      *yaht*      *aga ā*      *b-raw-t*      *tehrān*  
 DEM.Ns    come.PT      if    DEM.D    SBJ-go.PR-3s    PN  
 "he/she came"      "if he/she goes to Tehran"

The obl. is also used after prepositions, e.g. *gōn āī* "with him/her". The Sarāwānī dialect has only *āī* as nom. (Baranzehi 2003:85).



of the pronouns of the 1st and 2nd persons is *man*, *ta(w)* (sg.); *mā*, *šumā* (pl.) and the obj. *m(a)nā*, *tarā*; *mārā*, *šumārā*, respectively. The nominal paradigm of Iranian Balochi thus differs markedly from that of the other Balochi dialects. Accordingly, both ergative and nominative constructions have a peculiar form. The ergative construction is used consistently in the Sarāwānī dialect (Table 1.4.2), which occupies a special position among the Iranian dialects of Balochi. The verb does not agree with the subject, but may agree with the object. Both the agent and the object (nouns and pronouns) are in the nom.; if the agent is a pronoun, it is usually the appropriate suffixed pronoun (see section 1.5) that is used.

agent	object	verbal ending
nom.:	nom.:	agreeing with 3 <sup>rd</sup> person object (optional):
sg. -∅	sg. -∅	sg. -∅
pl. -ān	pl. -ān	pl. -ē
Examples:		
<i>gwāt</i> Ns		<i>čandēnt-ē</i> <sup>49</sup> "the wind swung them"
<i>bačakā</i> Ns	<i>rōza-y-eš</i> Ns	<i>wārta</i> <sup>50</sup> "the boys have broken the fast"
<i>mō</i> Ns		<i>dāt-ē ramazān-a</i> <sup>51</sup> "I gave them to Ramazan"
		<i>tāp-ō kort-ē</i> <sup>52</sup> "I twisted them"
	<i>yakk dastay-e</i> Ns	<i>dar ko</i> <sup>53</sup> "she pulled out a bar of gold"
	<i>sohr-ī</i>	

**Table 1.4.2:** The ergative construction in the Sarāwānī dialect

<sup>49</sup> Example from Baranzehi 2003:82. The "them" refers to clothes.

<sup>50</sup> Example from Baranzehi 2003:94. The literal meaning is "the boys have eaten their fast".

<sup>51</sup> Example from Baranzehi 2003:83. In Sarāwānī, word-final vowels are usually shortened, so the obj.sg. is *-a* and the "indefinite article" *-e*. *mō* / *mon* is the nominative of the 1sg. pronoun, the obj. of which would be *mona*.

<sup>52</sup> Example from Baranzehi 2003:86 (lit.: "I made a twist to them"), with *-ō* being the suffixed pronoun of the 1sg.

<sup>53</sup> Example from Baranzehi 2003:106. The agent is expressed by the suffixed pronoun *-ī* (3sg.).

Similar constructions are found in other IrB regions, e.g.

- 4) *ta gōn čākar zendegī kort-a*  
 you.Ns with PN.Ns life.Ns do.PT-PF  
 "you have lived [together] with Chakar".<sup>54</sup>

However, some Balochi dialects of Iran other than Sarāwānī also show the nominative construction (Table 1.4.3).

agent	object	verbal ending	
nom.:	obj.:	agreeing with the subject:	
sg. -∅	sg. -ā	sg. -ān/-īn, -ey, -(ī)t	
pl. -ān	pl. -ān	pl. -ēn, -ēt, -an(t)	
examples:			
<i>āwān</i> Ns	<i>manā</i> As	<i>na-dīstan</i> <sup>55</sup>	"they did not see me"
<i>xodāwand</i> Ns	<i>tarā</i> As	<i>yārt edā</i> <sup>56</sup>	"God brought you here"
<b>Table 1.4.3:</b> The nominative construction in Iranian Balochi dialects			

### 1.5 The use of suffixed pronouns

There is considerable dialectal variation with regard to the number and form of suffixed (enclitic) pronouns. These exist for all persons in several dialects, but it is the 3rd person ones which are most commonly used, the remaining ones being quite rare or even nonexistent in some dialects.<sup>57</sup> Suffixed pronouns can be attached to the verb, but are also found suffixed to the object or some other

<sup>54</sup> If the verb was treated as an intransitive verb (thence a nom. subject), one would expect \**zendegī kurtey*.

<sup>55</sup> Example from Jahani 2003:121.

<sup>56</sup> Example from Jahani 2003:124.

<sup>57</sup> The forms of the pronouns may be found in Gilbertson 1923:70ff., 117ff. (EB), Farrell 1990:54f. and Collett 1983:21 (SB), Barker / Mengal 1969/I:242ff., Sokolov 1956:71, Buddruss 1988:52 (WB), Baranzehi 2003:86 (Sarāwānī). Iranian Balochi dialects have suffixed pronouns for all persons. For the use of suffixed pronouns in other Iranian and non-Iranian languages of the region cf. Elfenbein 1982:91ff. (with references).

element of the sentence.

The suffixed pronouns are used in all functions of the oblique case (Table 1.5). They therefore also occur as agents of ergative constructions.<sup>58</sup> Even subjects of transitive verbs in the past tense in dialects which otherwise only use nominative constructions may be expressed by suffixed pronouns, i.e. the suffixed pronouns represent what would be the agent in an ergative sentence even in dialects which otherwise have lost this construction. In Turkmenistan and Afghanistan, *gušt-ī* "he/she said" is the only ergative-like construction left (Buddruss 1988:60).<sup>59</sup> Suffixed pronouns may even be used as subjects of intransitive verbs and of verbs in the present tense, although this is not common.<sup>60</sup>

<sup>58</sup> Moškalo (1985:113f., 118ff.) describes the ergative constructions whose agent is expressed by a suffixed pronoun as "second variant" of the ergative construction (the first variant being those cases where the agent is expressed by a noun or a non-enclitic pronoun). The structure is the same in both situations, however, since suffixed pronouns function as oblique forms of pronouns. Iranian Balochi dialects which pattern ergatively exhibit a strong preference for the use of suffixed pronouns in agent function.

<sup>59</sup> A similar process has occurred in New Persian (using the nominative construction throughout), *goft-eš* "he/she said" etc. being the only traces of the ergative construction (but cf. fn. 30).

<sup>60</sup> Note that, occasionally, "doubled" suffixed pronouns are found in addition to a noun or non-enclitic pronoun in the same function (Farrell 1995:234, no example given). It is not clear, however, how common this phenomenon is. The two examples in Table 1.5 (*tamām-e ...; wāǰa alī...*) may be interpreted as showing special conditions since they are from Iranian dialects where agent and object appear in the same case, and there is no object in either sentence. Elfenbein 1966:19ff. reports the use of "superfluous" suffixed pronouns in unambiguously agent function (Moškalo's 1985:120 examples for this phenomenon are all from this source):

*ē zahg-ān singi-ēn gīs ǰōr-iš kurt*  
 DEM child-Op from.stone-ADJ house.D ready-PRO3p do.PT  
 "these children built a stone house" (WB)

*zī dard-iš kut pād-ān*  
 yesterday pain.D-PRO3p do.PT foot-Op  
 "yesterday [my] feet hurt (lit.: made pain)" (SB)

and nominative sentences, e.g. in subject function:

*sawās manī pād-ān dard-iš kurt*  
 sandal.D I.GEN foot-Op pain.D-PRO3p do.PT

pron.suff.	examples: <sup>61</sup>
agent (ergative patterns)	<p>EB <i>maī gōš buriḏayant-īš</i> "they cut off my ears"</p> <p>SB <i>pīālā-ḏ zūrta</i> "I have taken the bowl"</p> <p>Sar. <i>ez ḡdā wāš harkat-ē ko</i> "we set out (lit.: made movement) from Khash"</p> <p><i>wāja alī gopt-ī</i> "Mr Ali said (...)"</p> <p>IrB <i>dars-en a wā</i> "we were studying"</p> <p>WB <i>gušt-ī gō pādīšāā</i> "he/she said to the king (...)" (Sokolov 1956:77)</p> <p>IrB <i>tamām-e sistān-o-balōčestān xeylī pīšraft-ī korta</i> "the whole of Sistan-and-Balochistan has made a lot of progress"</p>
subject (nominative patterns)	<p>EB <i>nawā bi-yāyant-īš</i> "perhaps they will come"</p> <p><i>durāh na bīḏa-ī</i> "he/she has not become well (i.e. recovered)"</p> <p>SB <i>kučikā janant-ē</i> "they hit (present) the dog" (Farrell 1995:235)</p>
object (nominative patterns)	<p>EB <i>hamōḏā miḡān-ī</i> "I will fight him/her there"</p> <p><i>zar dēān-īš</i> "I will give them the money"</p> <p>SB <i>watī yak kārd-ē dant-ī</i> "s/he<sub>1</sub> gives him/her<sub>2</sub> one of his/her<sub>1</sub> (own) cards"</p> <p><i>man-īš dōčīn</i> "I will sew them" (Collett 1983:10)</p> <p>Sar. <i>brēset-eš</i> "spin them!"</p> <p><i>hodāy-eš awlād-e nēkēn bdant</i> "may God give you good children!"</p> <p><i>wārt-ē</i> "he/she eats it"</p> <p>WB <i>drust na kurtun-ē</i> "I did not recognise him/her"</p> <p><i>guštun-ē</i> "I said to him/her"</p> <p><i>man zar-īš dāt</i> "I gave money to them"<sup>62</sup></p>
possessor <sup>63</sup>	<p>EB <i>nām ēn-ī naina bāi</i> "her name is Naina Bai"</p> <p>SB <i>dap-ī</i> "his/her mouth"</p> <p>Sar. <i>dēm-et</i> "your (sg.) face"</p> <p>WB <i>laškar-un</i> "my army" (Sokolov 1956:71)</p>

**Table 1.5:** The use of suffixed pronouns in Balochi dialects

"the sandals hurt my feet" (WB, IrB)

<sup>61</sup> The EB examples are from Gilbertson 1923:73, 117f., SB from Farrell 1990:54, Sar. from Baranzehi 2003, IrB from Jahani 2003, WB from Buddruss 1988:52 if not otherwise indicated.

<sup>62</sup> Example from Elfenbein 1982:93. Elfenbein does not note which dialect this example comes from, but, compared to the other data, it might belong here.

In nominative constructions of all dialects, the suffixed pronouns are used to denote direct and indirect objects. Furthermore, they function as possessive pronouns.<sup>64</sup>

## 2. Synchronic and diachronic evaluation of the ergative construction in Balochi

### 2.1 The animacy split

As has been seen above, pronouns are not always treated in the same way as nouns as far as their use in the ergative or nominative construction is concerned: in the Southern dialects, the pronouns of the 1st and 2nd persons differ from other pronouns and from all nouns (including personal names) in that they appear in the direct case and not in the oblique when functioning as

---

<sup>63</sup> No examples of suffixed pronouns of the 1st and 2nd persons in the function of possessive pronoun have been found in EB and SB sources (the Southern dialects only rarely use suffixed pronouns for the 1st and 2nd persons anyway).

<sup>64</sup> According to Buddruss 1988:52, the suffixed pronouns are also found after prepositions, e.g. *gōn-ī* "(together) with him/her". The only other source which notes this use is Elfenbein 1982:93: Elfenbein assumes the use of suffixed pronouns after "prepositions or adverbs", with the latter being exemplified by

*āšk-ā-iš*                      *bī-nīnd*  
 that.side-Os-PRO3p    SBJ-sit.PR  
 "sit on that side of them"

(obviously from Barker / Mengal 1969/I:242). *āšk*, however, does not otherwise function as a preposition, but as a noun: *āšk* "that side" vs. *ēšk / išk* "this side", obl. *āšk-ā* "on that side" (with the obl. in its locative function, cf. e.g. *gis-ā* "in the house"), *āškay* "from that side" is the genitive. The etymology may be a compound from the demonstrative pronoun + a meta-thesised form of \**kš*- from *kaš* "armpit" (Buddruss 1974:32). The existence of suffixed pronouns attached to prepositions in dialects other than that studied by Buddruss is therefore not certain. Consequently it is difficult to decide whether Buddruss' *gōn-ī* represents something old (if so, it would be comparable to New Persian expressions like *be(h)-eš* "to him/her", *barāy-aš* "for him/her" etc., Kurdish *lê-t* "against you (sg.)", Elfenbein 1982:92f. referring to MacKenzie 1961:77) or rather an innovation in this dialect, perhaps modelled on New Persian.

an agent. Similarly, the form found after prepositions in these dialects is *man*, *taw* etc., not *manā*, *tawā* etc.

The split which separates the pronouns of the 1st and 2nd persons from other pronominal and nominal forms is in accordance with a universal feature described by Silverstein 1976 (cf. Farrell 1995:221): there is a hierarchy in the nominal system in which the pronouns of the 1st and 2nd persons rank first, followed by proper names, then nouns denoting animates, with nouns denoting inanimates at the bottom. The rule says that if there is ergative case marking for some NP types, there is also ergative marking for all NP types further down on the scale. In the case of Balochi, one might therefore say that the pronouns of the 1st and 2nd persons are not marked ergatively while everything from proper names downwards on the hierarchy is marked ergatively in the past domain.

The Southern dialects of Balochi thus show a feature found in many other languages of the world. There are some interesting points, however, which should be noted in this respect.

The fact that some pronouns are not in the oblique but in the direct case when used as agent has created the impression that the ergative construction is weakened in the Balochi language as a whole.<sup>65</sup> However, in the Eastern dialects, the oblique of the 1sg. pronoun is used as agent, the remaining personal pronouns not distinguishing dir. and obl. case forms (the same applies to all personal pronouns in Western Balochi), so that one may say that in Eastern Balochi all pronouns appear in the oblique case when functioning as agent. One might therefore be tempted to conclude that the Eastern dialects preserve the full form of the ergative construction while the other dialects show a reduced form with some agents being treated as a subject of an intransitive verb (or of a transitive verb in the present tense) would be. This reduction might be explained as being motivated by the universal tendency above.

The etymology of the pronouns suggests another interpretation, however. In the 1sg., Parthian has *man* as obl. (dir. is *az*); the 2sg. is always written <tw>,

---

<sup>65</sup> Cf. e.g. the title of Farrell 1995 and the discussion on p. 230 of that article.

and it is unclear whether or not this is to be read as two different forms (maybe dir. *tū*, obl. *tō*); the plural does not differentiate for case, the 1pl. being *amā(h)*, 2pl. *išmā(h)*.<sup>66</sup> Balochi *man* and *taw* thus represent the outcome of the Middle Iranian oblique forms, the direct forms (*az* and *tū*) having been lost.<sup>67</sup> Conversely, Balochi *manā*, *tarā*; *mārā*, *šumārā* must be novel formations since these forms did not exist in Middle Iranian languages. At some point in the (pre-)history of Balochi, the 1sg. pronoun must therefore have been *man* in all functions, i.e. *man* was used for the direct as well as for the oblique case. This situation may be said to be reflected by the use of *man* in WB and by the other personal pronouns in all dialects. When the inflection of the pronouns was adjusted to fit the system of the nouns<sup>68</sup> and new inflectional forms (*manā* etc.) came into use,<sup>69</sup> the alignment with the nominal system was only partial since the new forms were chiefly ascribed object function, only SB ranging them as general oblique and reducing the inherited forms to the direct case, but they preserved the agent function in most dialects.

Therefore, the use of the historically oblique forms (reinterpreted as direct case in some dialects) for the agent in Southern and partially also in Western Balochi is in fact likely to be an old feature. It may be explained as having been preserved since it fitted with the universal tendency that the pronouns of the 1st and 2nd persons may differ from NP types lower down on the scale in terms of ergative marking, which explains why the system was not adjusted to general

---

<sup>66</sup> Rastorgueva / Molčanova 1981:202, Sundermann 1989:131. The Parthian oblique forms (in the plural: the only forms) are derived from the Old Iranian genitive forms (Rastorgueva / Molčanova 1981:202).

<sup>67</sup> Kurdish and Zazaki preserve both forms of the 1sg. pronoun, viz. *ez* (dir.) vs. *min* (obl.).

<sup>68</sup> In the case of the nouns, the Balochi endings and their functions are in part inherited, cf. Parthian obl.pl. *-ān* (preserved as such in Balochi) vs. dir. (sg. and pl.)  $\emptyset$  (both in Parthian and Balochi). The Balochi ending of the obl.sg. represents something secondary (for theories concerning its origin see Sokolov 1956:64).

<sup>69</sup> The observation that *manā* etc. are secondary formations made in analogy to the nouns has also been made by Moškalo 1985:114, 117. For discussion of the history of the Balochi case system, see Korn 2005.



use of the oblique as agent in some dialects. On the other hand, the use of the new EB oblique *mā* in agent function is an innovation of the Eastern dialects. It is possible that language contact has played a role here, since in Pashto, the 1sg. obl. *mā* is used as agent in ergative constructions, e.g. *mā kār kawə* "I (obl.) worked (lit.: did work)".<sup>70</sup>

## 2.2 Tense split

Another property of the ergative construction which fits into typological patterns observed in other languages is the tense split: there is a typological universal (cf. Trask 1979:385) that if the ergative is restricted to some tense(s) or aspect(s), ergative constructions occur in the past tense or perfective aspect, while there is nominative construction in the remaining tense(s). In all Balochi dialects which show the ergative construction, its occurrence is limited to tenses formed from the past stem (see section 0.), parallel to the situation found in other Iranian and Indic languages; this is not surprising given its origin (see section 3.).

## 2.3 Suffixed pronouns

The use of suffixed (enclitic) pronouns is in the main in accordance with the use of comparable elements in other languages of Asia (cf. Farrell 1995:233ff.): they predominantly function as agents in the ergative and as direct objects in the nominative domain. Noteworthy is the occurrence (albeit rare) of suffixed pronouns in the function of subject in the nominative domain (see section 1.5).

## 2.4 Other typological aspects

Whereas some characteristics of the Balochi ergative construction fit well with

---

<sup>70</sup> Note that the origin of EB obl. *mā* is not yet clear. It might represent a contracted variant of the form *manā* which is found in other dialects; it may perhaps also have been influenced by Pashto *mā*.

typological observations, there are also points where Balochi differs from what has been noted in other languages.

According to Trask 1979:388, there is a universal tendency that no language may have both a Silverstein-type animacy split (see section 2.1) and a tense split (see section 2.2) in the ergative construction at the same time. Balochi, however, is a counterexample to this assumption (cf. Farrell 1995:228f.).<sup>71</sup>

Another hypothesis by Trask (1979:397, cf. Farrell 1995:229) is that languages with a tense split in the ergative domain originate from a "nominalized deverbal form with stative force" (e.g. a past participle used with a possessive construction). Although this may be said to apply to the Iranian languages<sup>72</sup> since the Old Persian examples show the genitive in agent function and the perfect passive participle of the verb,<sup>73</sup> it does not hold for the Indic languages: in these languages, the ergative construction goes back to the perfect passive participle with the agent in what is diachronically the instrumental case. As far as the Indo-Iranian languages as a whole are concerned, it is therefore questionable whether the universal posited by Trask is probable. It is also

---

<sup>71</sup> Georgian is another counterexample: there is a tense split (tenses of the aorist group patterning ergatively, those of the present group nominatively) and an animacy split: the personal pronouns of the 1st and 2nd persons do not distinguish the nominative from the ergative case while the remaining pronouns and all nouns do (the ergative being used in agent function in the aorist tenses). The same applies to the other Kartvelian languages and thus seems to be an ancient feature (Jost Gippert, personal communication).

<sup>72</sup> Note that there has been a considerable amount of discussion (reported in Farrell 1995:229f.) about the origin of the Iranian ergative construction. In these discussions, only the Old Persian examples have been taken into account; data from Middle Iranian or Indic languages has apparently not been considered adequately.

<sup>73</sup> Examples similar to the Old Persian ones may also be found in Avestan (Jost Gippert, personal communication), e.g.

<i>aēm</i>	<i>mōi</i>	<i>idā</i>	<i>vištō</i>
DEM.Ns	PRO1s.GEN	here	find.PF.Ns

"I have found this (lit.: this by me [gen.] was found) here" (Y 29, 8)

The Avestan examples noted by Cardona 1970:3 involve the use of a finite passive form (not the participle in *-ta-*) with agent in the instrumental case.

questionable in how far it makes sense to say that the Balochi ergative construction originates from some phenomenon found in Old Persian, since if any system should be considered to be the "origin" of the Balochi one, it would rather be the system found in Parthian than the Old Persian one.<sup>74</sup>

A third point is that Trask 1979:385 maintains that ergative languages usually do not have a fully developed passive voice. Although the passive voice in Balochi has a rather marginal position and passive sentences with agent are quite rare, passive constructions (consisting of the infinitive and an appropriate form of "to be, become") do exist and are also used in the past tenses (cf. Farrell 1995:230f.),<sup>75</sup> e.g.

5) *lānč gir-ag bīt-ag-it-ā*  
 boat.D seize.PR-INF become.PT-PF-COP.PT-3p  
 "boats (dir.) had been caught" (Farrell 1995:230)<sup>76</sup>

6) *ē mardom-ān jat-en būt-ē*  
 DEM people.Np hit.PT-INF become.PT-3p  
 "these people were beaten" (Baranzehi 2003:100)

The use of "become" in the function of an auxiliary formation in the passive voice may even be traced back to Parthian (cf. Ghilain 1939:117ff., Rastorgueva / Molčanova 1981:225, Durkin-Meisterernst 2002).

## 2.5 Morphological ergativity

Balochi shows morphological or surface ergativity (as opposed to "deep ergativity", Farrell 1995:233). This may be concluded from (among other things) the fact that the transitivity or intransitivity of periphrastic verbal

<sup>74</sup> For the ergative construction in Parthian, see section 3.

<sup>75</sup> Again, Georgian is a further counterexample to this alleged typological universal. There is a passive voice also e.g. in Zazaki (derived from a verbal stem with the suffix *-ey- / -î-*), in several Kurdish dialects and in Pashto (both with infinitive or participle + auxiliary).

<sup>76</sup> The form *bītagitā* in Farrell 1995:230 is a misprint for *bītagitā* (Tim Farrell, personal communication).

constructions is determined by the respective properties of the finite verb, not by those of the main verb (all examples from Farrell 1995:226f.): continuous forms built from the copula and the infinitive pattern nominatively, e.g.

- 7) *man išīā gind-ag-ā it-ā*  
 I.D DEM.Os see.PR-INF-Os COP.PT-1s  
 "I kept seeing him/her"

while those composed of the present participle and *kanag* "to do" pattern ergatively in the past tenses, e.g.

- 8) *ṭēkādār-ā (...)* *rēk xatam kan-ān ku*  
 contractor-Op sand.D fishing do.PR-PRT do.PT  
 "the contractors kept fishing sand"

and the same applies to the "ability construction" formed from the past stem + *kanag*, e.g.

- 9) *āyā kapt kut-ag-ā*  
 DEM.Op fall.PT do.PT-PF-3p  
 "they could have fallen"

Similarly, transitivity of complex verbs depends on the transitivity of the simple verb for the most part, irrespective of the semantics:<sup>77</sup> the nominal part of e.g. *bāl kanag* "to fly (lit.: to do flying)", *dēr kanag* "to be late (lit.: to do late)", *gānā ṣanag* "to sing (lit.: to strike song)", *ṣamp ṣanag* "to jump (lit.: to strike jump)" is treated like an object, the agent appearing in the oblique in the past tenses, and the same even applies to combinations with *warag* "to eat", e.g. *kawš warag* "to be hit with a shoe (lit.: to eat shoe)" or *ṣam warag* "to grieve (lit.: to eat sorrow)". A few complex verbs (termed "exceptions" by Farrell 1995:233), however, are intransitive in spite of the simple verb being transitive, e.g. the subject of *zār girag* "to become angry (lit.: to take anger)" is in the direct case in all tenses.

---

<sup>77</sup> Cf. the discussion in Farrell 1995:232f. The same situation is observed in other contemporary Iranian languages.



## 2.6 Conjunctive participles

Some variants of the ergative construction exhibit forms where the past stem or the perfect participle (see fn. 3) is used in a converb-like manner. Balochi constructions of this type are termed conjunctive participle by Farrell 2003:201ff. They occur in otherwise ergative as well as nominative sentences. Examples are (conjunctive participles in bold):

- 12) *zālbūl-iš*      *ārt*      *āwurt*      *nān*      *patk*  
 wife.D-PRO3p   flour.D   bring.PT   bread.D   cook.PT  
*aw*                      *drust*      *mēmān-ā*      *nān*      *dāt-ant*  
 And                      all              guest-Op   bread.D   give.PT-3p  
 "their wives brought flour, baked bread, and gave bread to all guests"  
 (Barker / Mengal 1969/I:348)

(11) shows agreement of the subject with the last verb (thus a nominative sentence), the first and second verbs being uninflected.

- 13) *man*      *čē*                      *gunāh-ē*      *kurt-ag-at*      *ki*  
 I.D/Os      what                      sin.D-IND      do.PT-PF-COP.PT      SUB  
*taw*      *manā*                      *sazā*                      *dāt*                      *aw*  
 you.D/Os      I.As                      punishment.D      give.PT                      and  
*manī*      *zāhg-u-zālbūl-ā*      *wār*                      *kurt-ay*  
 I.GEN      hild-and-wife-Op      trouble.D                      do.PT-2s  
 "what sin had I done that you punished me and harassed my family?"  
 (Barker / Mengal 1969/I:347)

(12) likewise omits all verbal endings but the last one (agreeing with the subject again),<sup>79</sup> (13) lacks a verbal ending on *šu* "went" (which an intransitive verb should have), the sentence being otherwise an ergative one, and (14) is constructed ergatively, but has marking of the plurality of the object only on the last verb.

<sup>79</sup> The change of agent/subject in this sentence favours the interpretation of *man ... kurtagat* as a regular ergative construction rather than as a conjunctive participle.

- 14) *mā hamē tēm-ā šu šikāyat ku*  
 I.Ds DEM time-Os go.PT complaint do.PT  
 "that very time I went [and] made a complaint" (Farrell 1995:225)

- 15) *mā watī čuk-ānā bī balōčī darmān*  
 we.D/O own child-Ap also Balochi medicine.D  
*gitt-ā grāst-ā dāt-ag-ā*  
 seize.PT-PF boil.PT-PF give.PT-PF-3p  
 "for our children we have also bought Balochi medicines, have boiled  
 [them] and given them [to the children]" (Farrell 2003:204)<sup>80</sup>

So far, the WB dialect of Pakistan in the description by Barker / Mengal 1969 and the observations by Farrell on Karachi Balochi are the only sources which show the use of conjunctive participles in Balochi. The details of the development of the construction are not yet entirely clear. One factor contributing to its development is likely to be found in the specific types of mixture between ergative and nominative constructions (see also section 3.).<sup>81</sup> On the other hand, conjunctive participles are also used in several neighbouring languages, including Persian and Urdu, so that language contact may also play a role here (cf. Farrell 2003:205).

### 3. The development of the Balochi ergative construction

A discussion of how a Balochi grammatical phenomenon might have evolved may conveniently start with an examination of the corresponding Western Middle Iranian feature, especially the one found in Parthian. A study of ergativity in Parthian, however, is faced with the difficulty that with the

---

<sup>80</sup> The perfect stem in *-ā* of Karachi Balochi corresponds to *-ag* in the other dialects (Farrell 2003:203 note 27).

<sup>81</sup> Similar to the situation found in Balochi, ergativity in Kurmanji shows different degrees of adaptation to the nominative pattern (cf. Dorleijn 1996).



exception of the 1sg. pronoun, the Parthian oblique case differs from the direct case only in the plural.<sup>82</sup>

The ergative construction found in Parthian may be summarised as in Table 3.0. So from a diachronic point of view, the Balochi sentence structures in Table 3.1 may be said to correspond to the model found in Parthian.

agent	object	verbal agreement
noun (obl.), pronoun (obl.), suffixed pronoun	noun (dir., obl.pl.) <sup>83</sup> pronoun (dir.)	with object in number and person

**Table 3.0:** The ergative construction in Parthian

These constructions are found in Eastern, Southern and some Western dialects.<sup>84</sup> The use of the oblique form of pronouns of the 1st and 2nd sg. in the

<sup>82</sup> Even the Parthian terms of family relations (mother, father etc.), in contrast to those of Middle Persian, do not distinguish the direct from the oblique case (cf. Sims-Williams 1981).

<sup>83</sup> Cf. Rastorgueva / Molčanova 1981:223f. The ending of the obl.pl., viz. *-ān / -īn*, may also be used in the function of general pl. marker (Sundermann 1989:130). One thus finds ergative sentences with the object marked with obl. ending:

*abāw-um harw-īn brādar-ān ud wxārīn pad kirbag windād ah-ēnd*  
 there-PRO1s all-Op brother-Op and Sister-Op to piety.D find.PT COP-3p  
 "there, I found all brothers and sisters in piety"

(Rastorgueva / Molčanova 1981:223, Andreas / Henning 1934:858)

(with the agent expressed by the suffixed pronoun *-um*), parallel in structure to Balochi sentences of type A (Table 3.2), and similar sentences are found in MP (Nyberg 1974:282f.). However, as there seems to be no example of this type in the Parthian inscriptions (neither in the MP ones, cf. Skjærvø 1983), it is likely that the Parthian marking of the object with oblique ending in the ergative construction is a secondary process independent from, although parallel to, the Balochi one. It is not yet clear whether objects of ergative sentences are marked with *-ān / -īn* more often than in other instances of what should be the dir.pl. Another Parthian strategy to mark the object (in some cases also the agent) of an ergative construction is the use of a preposition (Sundermann 1989:129, 134).

<sup>84</sup> For examples, see the respective subsections of 1. There are some patterns for which no example is found in the sources, which is likely to be due to chance.

function of agent is limited to the Eastern dialects. Conversely, the direct case of the pronouns of the 1st and 2nd sg. is not used in object function in the Southern dialects.

	agent	object	verbal agreement
form and function inherited from Middle Iranian	noun (obl.pl.), pronoun 3 <sup>rd</sup> (obl.pl.), pronoun 1 <sup>st</sup> , 2 <sup>nd</sup> (dir.), suffixed pronoun	noun (dir.), pronoun (dir.)	with 3 <sup>rd</sup> person object in number (optional)
form is a novel formation in Balochi	noun (obl.sg.), <sup>85</sup> pronoun 3sg. (obl.), pronoun 1 <sup>st</sup> , 2 <sup>nd</sup> (obl.)		

**Table 3.1:** Balochi ergative structures continuing the Middle Iranian model

One step in the direction towards the nominative construction is the use of the oblique or object case for the object. The opposite adjustment, i.e. the use of the direct case for the agent, also occurs to a certain extent (Table 3.2).

Type A is found in Southern and Western dialects, and in the Eastern ones with the exception of the personal pronouns (which are here always in the oblique in agent function). According to Moškalo 1985:121, Type B is found in some examples of Eastern and Southern Balochi.<sup>86</sup> The ergative constructions found in Iranian Balochi (chiefly in Sarāwānī) may also be put here: in these dialects, the nominative (sg. -∅ resulting from the direct case, pl. -ān from the oblique plural of nouns and pronouns of the 3rd person) is used both for agents and objects.

<sup>85</sup> For the obl.sg. ending of Balochi being an innovation, see fn. 68.

<sup>86</sup> Note that Moškalo's example from Gilbertson 1923 is not found on the cited page. The example from Mockler 1877 (Southern Balochi) has *taw* as object and shows the agent in the direct case.

	agent	object	verbal agreement
A: adaptation of the object	noun (obl.), pronoun 3 <sup>rd</sup> (obl.), pronoun 1 <sup>st</sup> , 2 <sup>nd</sup> (dir.) suffixed pronoun	noun (obl., obj.), pronoun 3 <sup>rd</sup> (obj.), pronoun 1 <sup>st</sup> , 2 <sup>nd</sup> (obl.)	with 3rd person object in number (optional)
B: adaptation of the agent	noun (dir.) pronoun (dir.)	noun (dir.), pronoun (dir.)	

**Table 3.2:** Balochi ergative structures showing adaptation to the nominative construction

A more marked adjustment to the nominative construction consists in the agreement of the verb with the agent/subject (Table 3.3). Type C is found in the Eastern dialects and in some Western Balochi dialects. In the remaining Western dialects, it occurs insofar as suffixed pronouns may be used to denote the subject in an otherwise nominative construction. The latter structure is also reported to be found in the nominative domain of the Eastern dialects. Type D is found in certain dialects of the WB and the IrB group. In Karachi Balochi, it is found side by side with the ergative construction in the present perfect.

	subject	object	verbal agreement
C: semi-nominative constructions	noun (obl.), pronoun (obl.) suffixed pronoun	noun (dir.)	with the subject in number and person
	suffixed pronoun	noun (obl., obj.), pronoun (obl., obj.)	
D: nominative construction	noun (dir.), pronoun (dir.)	noun (obl., obj.), pronoun (obl., obj.), suffixed pronoun	

**Table 3.3:** Balochi sentence structures approaching the nominative construction

It is not entirely clear whether the Balochi conjunctive participle construction (see section 2.6) is to be seen in the context of adaptation of the ergative to the nominative construction since conjunctive participles and converbs occur in many languages of the world entirely independent of the issue of ergativity. However, the Balochi conjunctive participle constructions are morphologically quite similar to certain ergative sentence types so that it might be possible to interpret them in this context. If so, their origin might be seen in ergative sentence structures of the type *man kurt / kurta* (WB, SB) "I did / have done", which is liable to interpretation as showing a nominative subject and an endless verb (Table 3.4).

	subject	object	verbal agreement
E: conjunctive participle construction	noun (dir.), pronoun (dir.)	noun (obl., obj.), pronoun (obl., obj.), suffixed pronoun	-∅

**Table 3.4:** Converb-like sentence structures in Balochi

These constructions are found in narrative texts at least in Western Balochi of Pakistan and in Karachi Balochi. They also occur in the Southern Balochi dialect of Oman (see section 1.2), although the conditions for their occurrence are not entirely clear.

#### 4. Summary

Starting out from a point which may be reconstructed from the Middle Iranian data, the Balochi dialects have diverged to a considerable degree, ranging from complete loss of the ergative construction in some dialects of the Western group to a quite consistent use of ergative structures in Southern and Eastern Balochi.

Balochi may therefore be said to show multiple-split ergativity, some Balochi dialects patterning entirely nominatively, others predominantly

ergatively in the past domain, with a considerable amount of mixed patterns besides both nominative and ergative constructions. The use of the different types of mixed constructions likewise depends on the dialects involved. Oblique or object case marking of the object occurs in all dialects, and verbal agreement with the object is optional if it occurs at all. The use of suffixed pronouns in agent function is very widespread and is even found in dialects that only employ the nominative construction. All Balochi dialects which use the ergative construction exhibit a tense split (ergative patterning in tenses from past and perfect stems, nominative patterning in those from the present stem, see section 2.2). The animacy split, on the other hand, is not found in all dialects (see section 2.1). Transitivity and consequently ergative or nominative patterning of certain groups of verbs differs in some respects from what one might expect (see fn. 4 and section 2.5).

The loss of the ergative construction in the Western Balochi dialects of Afghanistan and Turkmenistan has been attributed to the influence of Persian (Buddruss 1988:60). Conversely, one might assume that the influence of Urdu (and other neighbouring languages) may have supported the ergative construction in the Southern and Eastern dialects of Balochi (Farrell 2003:169, 199). It is therefore questionable whether ergativity may be said to have been weakened in the Balochi language as a whole. Apart from certain adjustments to the nominative construction in terms of marking the object, ergativity is well-preserved in a number of dialects, among these the whole range of Southern and Eastern Balochi and even some Iranian Balochi dialects including Sarāwānī. It is also questionable whether the co-existence of ergative and nominative constructions *per se* creates a pressure for one of the constructions to be reduced (thus Moškalo 1985:121). In fact, split ergativity seems to be a rather stable system in many languages of the world, including in the Iranian languages, where it has been preserved from its Old Iranian initial stages through the Middle Iranian period into many contemporary Iranian languages.

It is likely that, depending on the grammatical system of the language(s) a Balochi dialect is in contact with, ergativity will continue to be affected. One may expect that ergative constructions will be further reduced in those dialects which are in especially close contact with Persian, i.e. chiefly the Iranian Balochi dialects. In other dialects, the ergative system may be maintained or even strengthened in areas with a strong influence of Urdu and other Indic languages.

The status and specific form of Balochi ergative constructions thus differ quite markedly depending on the dialect in question, and the same may be said about other aspects of Balochi grammar, e.g. the inflection of pronouns (see Table 0.3). So it is obvious that in a number of fields, there is no uniform grammatical system of Balochi. The increasing influence of national languages via education and mass media seems to speed up the diverging process of the Balochi dialects. The question of to what degree speakers of a dialect with exclusively nominative sentence structures understand speakers of dialects which pattern ergatively or traditional poetry with ergative constructions remains to be studied.

### **Abbreviations:**

1sg. / 1s: first person singular (other persons are abbreviated accordingly)	INF: infinitive
A: object case ending	IPF: imperfective aspect marker ("verbal element")
ADJ: attributive adjective suffix	IrB: Iranian Balochi other than Sarāwānī
CAUS: causative	N: nominative case ending
COP: copula	nom.: nominative
D: direct case ending	NP: noun phrase
DEM: demonstrative pronoun	O: oblique case ending
dir.: direct case	obj. / OBJ: object case
EB: Eastern Balochi dialect group	obl.: oblique case
gen. / GEN: genitive	p(l.): plural
IND: "indefinite article" (individuation marker)	PF: perfect participle
	PN: name

PR: present stem	Sar.: Sarāwānī (Iranian Balochi dialect)
PRO: suffixed pronoun	SB: Southern Balochi dialect group
pron.: personal pronoun	SBJ: subjunctive marker
PRT: participle	SUB: subordinator
PT: past stem	WB: Western Balochi dialect group
s(g.): singular	

## References

- Andreas, Friedrich C., and Henning, Walter B. (1934). “Mitteliranische Manichaica aus Chinesisch-Turkestan III”, in *Sitzungsberichte der preußischen Akademie der Wissenschaften*, pp. 846-912 (= Walter B. Henning (1977). *Selected Papers I*, pp. 275-339).
- Baranzehi, Adam Nader (2003). “The Sarawani Dialect of Balochi and the Persian Influence on It”, in Jahani / Korn, pp. 75-111.
- Barker, Muhammad A., and Mengal, Aqil Khan (1969). *A Course in Baluchi*, Montreal: McGill University, 2 vol.
- Bashir, Elena (2008). “Some transitional features of Eastern Balochi: An areal and diachronic perspective”, in Jahani, Carina, Korn, Agnes and Titus, Paul (eds.) *The Baloch and Others: Linguistic, historical and socio-political perspectives on pluralism in Balochistan*, Wiesbaden: Reichert, pp. 45-79.
- Bosson, Georg (1985). *Empirische Universalienforschung: Differentielle Objektmarkierung in den neuiranischen Sprachen*, Tübingen: Gunter Narr.
- Buddruss, Georg (1974). “Neuiranische Wortstudien”, in *Münchener Studien zur Sprachwissenschaft* 32, pp. 9-40.
- (1988). *Aus dem Leben eines jungen Balutschen, von ihm selbst erzählt*, Stuttgart: Steiner.
- Cardona, George (1970). “The Indo-Iranian construction *mana (mama) kṛtam*”, in *Language* 46, pp. 1-12.
- Collett, Nigel A. (1983). *A Grammar, Phrase Book and Vocabulary of Baluchi*, Abingdon.



- Dames, Mansel Longworth (1881). "A Sketch of the Northern Balochi Language, containing a grammar, vocabulary and specimens of the language" (Extra number of the *Journal of the Asiatic Society of Bengal* I/1880). Calcutta.
- Dorleijn, Margreet (1996). *The Decay of Ergativity in Kurmanci: Language Internal or Contact Induced?*, Tilburg: Tilburg University Press.
- Durkin-Meisterernst, Desmond (2002). "The uses of *baw-* in Parthian", in Huyse, Philip (ed.) *Iran: Questions et connaissances. Actes du IVe congrès des études iraniennes organisé par la Societas Europaea Iranologica I* [*Studia Iranica Cahier 25*], Paris, pp. 47-62.
- Elfenbein, Josef (1966). *The Baluchi Language. A Dialectology with Texts*, London: SOAS.
- (1982). "Notes on the Balochi-Brahui Linguistic Commensality", in *Transactions of the Philological Society*, pp. 77-98
- (1990). *An Anthology of Classical and Modern Balochi Literature*, Wiesbaden: Harrassowitz, 2 vol.
- Farrell, Tim (1990). *Basic Balochi. An Introductory Course*, Naples: Istituto Universitario Orientale.
- (1995). "Fading Ergativity? A Study of Ergativity in Balochi", in Bennett, David C., Bynon, Theodora and Hewitt, B. George (eds.) *Subject, Voice and Ergativity: Selected Essays*, London: SOAS, pp. 218-243.
- (2003). "Linguistic influences on the Balochi Spoken in Karachi", in Jahani / Korn, pp. 169-211
- Geiger, Wilhelm (1901). "Die Sprache der Balütschen", in Geiger, Wilhelm and Kuhn, Ernst (eds.) (1895-1901) *Grundriß der iranischen Philologie I*, Straßburg: Trübner, pp. 231-248, 417-423
- Ghilain, Antoine (1939). *Essai sur la langue parthe: Son système verbal d'après les textes manichéens du Turkestan oriental*, Louvain: Muséon.
- Gilbertson, George W. (1923). *The Balochi Language: A grammar and manual*. Hertford.

- Grierson, George A. (1921). "Balōchī", in *Linguistic Survey of India X: Specimens of Languages of the Eranian Family*, Calcutta, pp. 327-451
- Jahani, Carina (1994). "Notes on the use of genitive construction versus *izāfa* construction in Iranian Balochi", in *Studia Iranica* 23, pp. 285-298.
- (2003). "The Case System in Iranian Balochi in a Contact Linguistic Perspective", in Jahani / Korn, pp. 113-132.
- Jahani, Carina, and Korn, Agnes (eds.) (2003). *The Baloch and Their Neighbours: Ethnic and Linguistic Contact in Balochistan in Historical and Modern Times*, Wiesbaden: Reichert.
- Korn, Agnes (2005). "Das Nominalsystem des Balochi, mitteliranisch betrachtet", in Schweiger, Günter (ed.) *Indogermanica: Festschrift Gert Klingenschmitt. Indische, iranische und indogermanische Studien dem verehrten Jubilar dargebracht zu seinem fünfundsechzigsten Geburtstag*, Tübingen: VWT-Verlag, pp. 289-302.
- (2008). "Marking of arguments in Balochi ergative and mixed constructions", in Karimi, Simin, Samiian, Vida and Stilo, Donald (eds.) *Aspects of Iranian Linguistics*, Newcastle: Cambridge Scholars Publishing, pp. 249-276
- MacKenzie, D. Neil (1961). *Kurdish Dialect Studies I*, London: Oxford University Press.
- Moškalo, Vjačeslav V. (1985). "Sprjaženie perexodnyx glagolov prošedšego vremeni v beludžskom jazyke", in *Iranskoje jazykoznanije. Ežegodnik* 1981. Moscow, pp. 113-125.
- Nawata, Tetsuo (1981). *Baluchi*, Tokyo: Tokyo University of Foreign Studies.
- Nyberg, Henrik S. (1974). *A Manual of Pahlavi II: Ideograms, Glossary, Abbreviations, Index, Grammatical Survey, Corrigenda to Part I*, Wiesbaden: Harrassowitz.
- Rastorgueva, Vera S., and E. K. Molčanova (1981). "Parfjanskij jazyk", in Abaev, Vasilij I. et al. (eds.) *Osnovy iranskogo jazykoznanija: Sredneiranskije jazyki*. Moscow, pp. 147-232.

- Rzehak, Lutz (1998). "Das belutschische Epos von Šay Murūd und Āno (Materialien aus dem Nachlaß von Alexander L. Grünberg)", in Kushev, V. V. et al. (eds.) *Strany i narody vostoka XXX: Tsentral'naja Azija. Vostočnyj Gindukuš*, St. Petersburg: St Petersburg Oriental Studies, pp. 149-186.
- Silverstein, Michael (1976). "Hierarchy of features and ergativity", in Dixon, Robert (ed.) *Grammatical Categories in Australian Languages*, Canberra, pp. 112-171.
- Sims-Williams, Nicholas (1981). "Notes on Manichaean Middle Persian Morphology", in *Studia Iranica* 10, pp. 165-176.
- Skjærvø, Prods O. (1983). "Case in Inscriptional Middle Persian, Inscriptional Parthian and the Pahlavi Psalter", in *Studia Iranica* 12, pp. 47-62, 151-181.
- Sokolov, Sergej N. (1956). "Grammatičeskij očerk jazyka beludžej Sovetskogo Sojuza", in *Trudy Instituta Jazykoznanija* 6, Moscow, pp. 57-91.
- Spooner, Brian (1967). "Notes on the Balochī Spoken in Persian Baluchistan", in *Iran* 5, pp. 51-71.
- Sundermann, Werner (1989). "Parthisch", in Schmitt, Rüdiger (ed.) *Compendium Linguarum Iranicarum*, Wiesbaden: Reichert, pp. 114-137.
- Trask, Robert L. (1979). "On the origins of ergativity", in Plank, Frans (ed.) *Ergativity: Towards a theory of grammatical relations*, London: Academic Press, pp. 385-404.