Adverb agreement in Urdu, Sindhi and Punjabi

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Abstract

We discuss agreeing adverbs in Urdu, Sindhi and Punjabi. We adduce crosslinguistic evidence that is based mainly on similar patterns in Romance and posit that there is a close connection between resultatives and so-called pseudo-resultatives, which the agreeing adverbs appear to instantiate. We propose a diachronic relationship by which the originally predicative part of a resultative is reinterpreted as an adjunct that modifies the overall event predication, not just the result.

1 Introduction

We provide a first description and analysis of adverb agreement in three South Asian languages: Urdu, Sindhi and Punjabi. To the best of our knowledge, this has not been discussed before. While existing grammars have noticed the phenomenon in passing, they do not go into structural details and do not provide an explanation (cf. Trumpp 1872, Kellogg 1893, Cummings & Bailey 1912, McGregor 1972).

Examples (1)–(3) illustrate the core phenomenon with respect to the three languages.[1] The lexical item *sast-e/sast-a* 'cheap' in (1)–(3) is based on an adjective, but expresses adverbial manner modification of the overall event. Despite modifying the predicate, it agrees with the object 'clothes' in number and gender as a normal adjective would do.

In all of the examples the object is masculine plural and the adjective/adverb (AdjAdv below) agrees with the object. The verbal complex, on the other hand, agrees with the nominative subject as per the languages' normal agreement rules.

(1) rɑvi **kɑpṛe** **sɑst-e** bec-ta hɛ
Ravi.M.Sg.Nom clothes.M.Pl.Nom cheap-M.Pl sell-Impf.M.Sg be.Pres.3.Sg
'Ravi sells clothes cheap.' Urdu
(he sells them cheaply, the clothes are not inherently cheap)

(2) rɑvi **kɑpṛe** **sɑst-e** vec-da ɛ
Ravi.M.Sg.Nom clothes.M.Pl.Nom cheap-M.Pl sell-Impf.M.Sg be.Pres.3.Sg
'Ravi sells clothes cheap.' Punjabi
(he sells them cheaply, the clothes are not inherently cheap)

(3) rɑvi **kɑpṛa** **sɑst-a** vik-ɳɛ tʰo
Ravi.M.Sg.Nom clothes.M.Pl.Nom cheap-M.Pl sell-Impf.M.Sg be.Pres.3.Sg
'Ravi sells clothes cheap.' Sindhi
(he sells them cheaply, the clothes are not inherently cheap)

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[1]Example due to Rajesh Bhatt.

We discovered this phenomenon as part of on-going work on Urdu and Sindhi grammar development and syntactic annotation within the overall ParGram effort (Butt et al., 2002; Sulger et al., 2013). In seeking to understand how to handle it, we looked to a crosslinguistic comparison, which yielded the suggestion that the adverb agreement is an instance of a *pseudo-resultative*. We investigated this hypothesis and concluded that the phenomenon does indeed fall under this category. We propose an analysis that models a diachronic development from an original adjectival resultative to an adverbial pseudo-resultative via a reanalysis of an f-structural relationship (cf. proposals for understanding diachronic change via f-structure reanalysis in Butt & King (2001)).

2 Crosslinguistic Comparison and Pseudo-Resultatives

As indeclinable elements, adverbs are not expected to show agreement inflection (e.g., Anderson, 1985; Alexiadou, 1997; Evans, 2000). Examples which parallel our South Asian constructions quite closely can, however, be found in Romance.[2]

2.1 Romance

Agreeing adverbs are attested in Southern Italian dialects (Ledgeway, 2011, 2016; Silvestri, 2016). Southern Italian shows (at least) two ways of forming adverbs, one via the derivational morpheme *-ment* and one via adjectives that modify the manner of the event, but that tend to agree with one of the arguments of the clause.

(4a) and (4b) show agreement with the object ('health problems') and subject ('I'), respectively (Ledgeway, 2011, 10). In (4c), the adjective is in the masculine singular, which also functions as a default form indicating absence of agreement.

(4) a. tu li sa canusciri **buoni** li disturbi di **saluti**
you them.M know know.INF good.MPL the.MPL complaints.M of health
'you can recognize health problems expertly' Eastern Sicilian

b. havi tri ghiorna ca mi priparu, ma **bona** **nisciu**, averu?
it.has 3 days that me= I.prepare but good.FSG I.come.out true
'I've been preparing for 3 days, but I'll do alright, won't I?' Eastern Sicilian

c. Maria ma tu chi dici ca ficimu **bonu** [...]?
Maria but you what you.say that we.did good.MSG
'Maria, do you think we acted correctly?' Eastern Sicilian

As in Urdu, Sindhi and Punjabi, the agreeing adverbs are all based on adjectives, but the overall effect is one of adverbial manner modification of the event.

[2]Typological work has established that agreeing adverbs do exist in a few other languages as well, for example in the Daghestanian languages Avar and Archi (e.g., Evans, 2000). A close inspection of these examples show that these are not of the same type as our South Asian examples. They appear to involve true adverbs, not adverbs based on adjectives and are not confined to manner modification.

2.2 Undergoer Agreement and Variable Readings

The different Italian dialects investigated by Ledgeway and Silvestri show interesting microvariation in terms of agreement possibilities. However, Ledgeway (2011) shows that the main pattern with respect to agreeing adverbs is that they target the underlying UNDERGOER. In (5) and (4b) the agreement is with the subject, which, in both cases, is an undergoer (the subject of an unaccusative verb). In (4a) and (6) the agreement is also with the undergoer (the object of a transitive verb).

(5) **Campài** tantu tempu **mala**
I.lived so.much time bad.FSG
'I lived badly for such a long time.' Reggio Calabria

(6) Anna miscava **bone** **'i** **carte**
Anna shuffled good.FPL the.PL cards.F
'Anna shuffled the cards well.' (the cards are shuffled well) Cosenza

As already illustrated by (4c), the adjectives can also appear in the masculine singular default form. In this case, there is a failure of agreement and the interpretation is always that of a manner modification of the event, as shown particularly between the contrast in (6) and (7).

(7) Anna miscava **buonu** 'i carte
Anna shuffled good.MSG the.PL cards.F
'Anna shuffled the cards well.' (Anna shuffles well) Cosenza

Silvestri (2016) further points out that agreeing adverbs can actually have two different interpretations in Southern Italian dialects, as the examples in (8) show.

(8) a. Pietrə cusa na giacchetta **traviersə**
Pietro sews a jacket.FSG oblique.MSG
'Pietro is sewing a jacket haphazardly.' Northern Calabrian
'Pietro, sitting crookedly, is sewing a jacket.'

b. Pietrə cusa na **giacchetta traviersa**
Pietro sews a jacket.FSG oblique.FSG
'Pietro sews a malformed jacket.' Northern Calabrian
'Pietro sews a jacket crookedly.'

When there is no agreement, as in (8a), the interpretation is either a subject-oriented adverbial one or a manner modification of the event. When there is agreement with the object (the undergoer), as in (8b), it can be interpreted as straightforward adjectival modification or as a manner modification of the event.

The vast majority of the examples found in corpora or via speaker elicitation by Ledgeway and Silvestri show undergoer agreement. However, there are some which show agreement with agents in transitives and unergatives. An example

with unergatives from Silvestri (2016) is shown in (9a). The usages are always subject-oriented and are ambiguous between an adverbial and an adjectival function, though these are difficult to distinguish, as also illustrated by (9), where the non-agreeing version in (9b) has only the adverbial manner modification reading.

(9) a. **Maria** parlava **segreta**
Maria talked secret.FSG
'Maria spoke enigmatically.' Northern Calabrian
(i.e., she was an enigmatic interlocutor)

b. Maria parlava **segretə**
Maria talked secret.MSG
'Maria was speaking secretly.' Northern Calabrian
(i.e., her talking was secret)

The ambiguity between subject-oriented and manner modification is systematic and is presumably due to the semantically overlapping readings effected by argument-oriented vs. manner modification, as discussed in the next section.

2.3 Pseudo-Resultatives

Washio (1997) and Levinson (2010) look at pairs as in (10).

(10) a. He tied the shoelaces loose/loosely.

b. Janet braided her hair tight/tightly.

Washio (1997) and Levinson (2010) note that these pairs are semantically almost indistinguishable; in particular, Washio (1997) provides a reason why one finds potential ambiguity in English with respect to *He tied the shoelaces loose.*

> Although it still seems possible to regard the adjective *loose* [in (10)] as specifying the state of the shoelaces, it can also be regarded as describing *the way* he tied his shoelaces, that is, he did it without much force. This is natural because in an activity like tying the shoelaces, the manner (with or without force) determines the resulting state (tight or loose); and it is typical of cases like this that the adjectives can alternate with adverbs with virtually no difference in meaning: ...
> (Washio, 1997, p. 17)

This type of reasoning would also seem to apply to the Italian examples. Despite the considerable semantic overlap, however, there are some differences. While manner adverbs (*loosely, tightly*) are generally analyzed as predicates of events, Levinson (2010) calls the adjective version (*loose, tight*) a **pseudo-resultative** and argues that it is not a predicate of events, unlike the manner adverbs. She

takes the adjective to be predicating of a created result/object and sees the pseudo-resultatives as only applying to root creation verbs, i.e., verbs which entail the creation of an entity denoted by the root of the verb.

Levinson (2010) also identifies such pseudo-resultatives in Finnish, Norwegian and Romance and shows that they have special morphology in those languages that sets them apart from both resultatives and manner adverbs.[3] We have more to say about the similarities between resultatives and agreeing adverbs in §4.

3 Adverb Agreement in Urdu, Sindhi and Punjabi

In this section we present the basic adverb agreement patterns found in Urdu, Sindhi and Punjabi.[4] As is predominantly the case in Romance, we find that undergoers are the target of agreement. As argued for by Levinson (2010), we find that these agreeing adjectives/adverbs seem to be related to resultatives, but are semantically distinct in the sense identified by Washio (1997).

3.1 Urdu

3.1.1 Standard Adverbs

Adverbs in Urdu take several different forms. They can be simple words like the temporal adverb *roz* 'daily' in (12a). Case marked NPs like *dʰıyan=se* 'with care' in (12b) can also function as adverbials. In fact, this is a very common strategy for the expression of event modification. Finally, adverbs can be based on a noun or adjective and be realized through masculine oblique inflection as shown in (12c) for the word *pahl-a/i* 'first'. In line with what is generally expected for adverbs, none agree with other elements of the clause.

(12) a. lɑṛki gaṛi roz cɑla-ti hɛ
girl.F.Sg.Nom car.F.Sg.Nom daily drive-Impf.F.Sg be.Pres.3.Sg
'The girl drives a/the car daily.'

b. lɑṛki gaṛi dʰıyan=se cɑla-ti hɛ
girl.F.Sg.Nom car.F.Sg.Nom care.M.Sg=Inst drive-Impf.F.Sg be.Pres.3.Sg
'The girl drives a/the car with care.'

c. lɑṛki gaṛi pahl-e cɑla-ti hɛ
girl.F.Sg.Nom car.F.Sg.Nom first.M.Sg.Obl drive-Impf.F.Sg be.Pres.3.Sg
'The girl drives a/the car first.'

[3] Levinson also shows that they are distinct from resultative adverbs as in (11) (cf. Geuder 2000).

(11) a. They decorated the room beautifully.
b. She dressed elegantly.
c. They loaded the cart heavily.

[4] Note that the major facts hold for Hindi as well, which is structurally almost identical to Urdu.

3.1.2 Agreeing Adverbs

The adverbs that are based on adjectives retain the gender and number agreement morphology of the adjective and agree with an argument of the clause. This can be seen in (13a) where *ɑccʰ-i* 'good' modifies the verbal predication 'drive' but does not agree with the verb. Instead the AdjAdv agrees with the feminine object *gaṛi* 'car'. The AdjAdv is not able to agree with the (agentive) subject, see (13b), and when the object is non-nominative and therefore also not available for agreement as per the general verb agreement rules of the language, the AdjAdv does not agree with it, as shown in (13c). Instead, the AdjAdv shows default masculine singular.

(13) a. lɑṛka **gaṛi** **ɑccʰ-i** cɑla-ta hɛ
boy.M.Sg.Nom car.F.Sg.Nom good-F.Sg drive-Impf.M.Sg be.Pres.3.Sg
'The boy drives a/the car well.'

b. * lɑṛka gaṛi ɑccʰ-a cɑla-ta hɛ
boy.M.Sg.Nom car.F.Sg.Nom good-M.Sg drive-Impf.M.Sg be.Pres.3.Sg
'The boy drives a/the car well.'

c. lɑṛki gaṛi=ko **ɑccʰ-a** cɑla-ti hɛ
girl.F.Sg.Nom car.F.Sg=Acc good-M.Sg drive-Impf.F.Sg be.Pres.3.Sg
'The girl drives the car well.'

3.1.3 Verb Agreement

Agreement in Urdu is complex, with the verbal complex showing agreement for person, number and gender (Mohanan, 1994). When the subject is nominative (unmarked) as in (14a) then agreement is with the subject. When the subject is non-nominative and the object is nominative, as in (14b), agreement is with the object. When the subject and object both are overtly case marked, the verbal complex appears in the default masculine singular agreement as shown in (14c).[5]

(14) a. **lɑṛki** xɑt **lɪkʰ-ti** **hɛ**
girl.F.Sg.Nom letter.M.Sg.Nom write-Impf.F.Sg be.Pres.3.Sg
'The girl writes a/the letter.'

b. lɑṛki=ne **xɑt** **lɪkʰ-a** **hɛ**
girl.F.Sg=Erg letter.M.Sg.Nom write-Perf.M.Sg be.Pres.3.Sg
'The girl wrote a/the letter.'

c. lɑṛki=ne cɪʈʰi=ko lɪkʰ-a hɛ
girl.F.Sg=Erg note.F.Sg=Acc write-Perf.M.Sg be.Pres.3.Sg
'The girl wrote the note.'

[5]Urdu shows Differential Object Marking with a semantically motivated nominative/accusative alternation by which the accusative marked object is specific (Butt, 1993).

The agreeing adverbs follow this agreement pattern in the sense that they only agree with nominative arguments (either subject or object). As shown below, a further constraint is that agreement only targets undergoers, as in Romance.

3.2 Sindhi

3.2.1 Standard Adverbs

The data for Sindhi mirror those for Urdu. Adverbs can be simple words as in (15a) or they can be realized via a case marked NP as in (15b). As in Urdu, this is a very common strategy for the expression of event modification. Adverbs may also be based on a noun or adjective, but bear masculine oblique inflection as in (15c). None of these adverbial types agrees with any element of the clause.

(15) a. cʰlokiri gaɗi roz hɑla-ɛ tʰi
girl.F.Sg.Nom car.F.Sg.Nom daily drive-Pres.3.Sg be.Pres.F.Sg
'The girl drives a/the car daily.'

b. cʰlokiri gaɗi dʰıyan=sañ hɑla-ɛ tʰi
girl.F.Sg.Nom car.F.Sg.Nom care.M.Sg=Inst drive-Pres.3.Sg be.Pres.F.Sg
'The girl drives a/the car with care.'

c. cʰlokiri gaɗi pehr-eñ hɑla-ɛ tʰi
girl.F.Sg.Nom car.F.Sg.Nom first-M.Sg.Obl drive-Pres.3.Sg be.Pres.F.Sg
'The girl drives a/the car first.'

3.2.2 Agreeing Adverbs

Sindhi shows an identical overall pattern to Urdu. In (16a) *sʊʈʰ-i* 'good' is acting as an adverb in that it modifies the verbal predication. However, it agrees with the object and not the verb. (16b) shows that it cannot agree with the (agentive) subject and (16c) demonstrates the sensitivity towards overt case marking on the object. When the object is overtly marked, as in (16c), then the AdjAdv does not agree with it and instead is in the default masculine singular.

(16) a. cʰokıro **gaɗi** **sʊʈʰ-i** hɑla-e tʰo
boy.M.Sg.Nom car.F.Sg.Nom good-F.Sg drive-Pres.3.Sg be.Pres.M.Sg
'The boy drives a/the car well.'

b. * cʰokıro gaɗi sʊʈʰ-o hɑla-e tʰo
boy.M.Sg.Nom car.F.Sg.Nom good-M.Sg drive-Pres.3.Sg be.Pres.M.Sg
'The boy drives a/the car well.'

c. cʰokıri gaɗi=kʰe **sʊʈʰ-o** hɑla-e tʰi
girl.F.Sg.Nom car.F.Sg=Acc good-M.Sg drive-Pres.3.Sg be.Pres.F.Sg
'The girl drives the car well.'

3.2.3 Verb Agreement

Just like Urdu, Sindhi also shows agreement for person, number and gender within the verbal complex. Agreement patterns are identical to Urdu, although the morphology differs. Sindhi does not have an ergative case clitic, but ergative patterns are realized via the oblique morphological form of the noun. This can be seen in (17b) and (17c) where the oblique form of the noun *cʰokɪri-ɑ* 'girl' is used.

(17) a. **cʰokɪri** xatʊ **lɪkʰ-e** **tʰi**
girl.F.Sg.Nom letter.M.Sg.Nom write-Pres.3.Sg be.Pres.F.Sg
'The girl writes a/the letter.'

b. cʰokɪri-ɑ **xatʊ** **lɪkʰ-yo** **ahɛ**
girl.F.Sg-Obl letter.M.Sg.Nom write-Perf.M.Sg be.Pres.3.Sg
'The girl wrote a/the letter.'

c. cʰokɪri-ɑ gaɗi=kʰe hɑla-yo ahɛ
girl.F.Sg-Obl car.F.Sg=Acc drive-Perf.M.Sg be.Pres.3.Sg
'The girl drove the car.'

As in Urdu, the verb does not agree with the overtly marked subject and instead agrees with the unmarked object (17b). When the object is also overtly marked as in (17c), the verb is realized in the default masculine singular. The adverb agreement patterns shown in (16) are in line with the overall verb agreement patterns.

3.3 Punjabi

Punjabi shows the same patterns, modulo minor differences in the morphology and the lexicon. We nevertheless provide the data due to its under-researched nature.

3.3.1 Standard Adverbs

As in Urdu and Sindhi, standard adverbs can be realized as simple words (18a), case marked NPs (18b) or an adjective or noun in the invariant masculine oblique (18c). These adverbial expressions never agree with any element in the clause.

(18) a. kʊṛi gɑḍḍi roz cɑlañ-di ɛ
girl.F.Sg.Nom car.F.Sg.Nom daily drive-Impf.F.Sg be.Pres.3.Sg
'The girl drives a/the car daily.'

b. kʊṛi gɑḍḍi dʰɪyan=nal cɑlañ-di ɛ
girl.F.Sg.Nom car.F.Sg.Nom care.M.Sg=Inst drive-Impf.F.Sg be.Pres.3.Sg
'The girl drives a/the car with care.'

c. kʊṛi gɑḍḍi pahl-añ cɑlañ-di ɛ
girl.F.Sg.Nom car.F.Sg.Nom first-M.Sg.Obl drive-Impf.F.Sg be.Pres.3.Sg
'The girl drives a/the car first.'

3.3.2 Agreeing Adverbs

(19a) and (19b) show that the adverb does not agree with an agentive subject (masculine), but instead agrees with the feminine object. When the object is overtly case marked, then the agreeing adverb carries default masculine singular morphology.

(19) a. mʊɳḍa **gɑḍḍi** **cɑñg-i** cɑlañ-da ɛ
boy.M.Sg.Nom car.F.Sg.Nom good-F.Sg drive-Impf.M.Sg be.Pres.3.Sg
'The boy drives a/the car well.'

b. * mʊɳḍa gɑḍḍi cɑñg-a cɑlañ-da ɛ
boy.M.Sg.Nom car.F.Sg.Nom good-M.Sg drive-Impf.M.Sg be.Pres.3.Sg
'The boy drives a/the car well.'

c. kʊri gɑḍḍi=nũ **cañg-a** cɑlañ-di ɛ
girl.F.Sg.Nom car.F.Sg=Acc good-M.Sg drive-Impf.F.Sg be.Pres.3.Sg
'The girl drives the car well.'

3.3.3 Verb Agreement

Again, the AdjAdv agreement is in line with the overall pattern of verb agreement whereby the verb only agrees with a nominative subject or object argument.

(20) a. **kʊṛi** xat **lɪkʰ-di** **ɛ**
girl.F.Sg.Nom letter.M.Sg.Nom write-Impf.F.Sg be.Pres.3.Sg
'The girl is writing a/the letter.'

b. kʊṛi=ne **xat** **lɪkʰ-ya** **ɛ**
girl.F.Sg=Erg letter.M.Sg.Nom write-Perf.M.Sg be.Pres.3.Sg
'The girl wrote a/the letter.'

c. kʊṛi=ne gɑḍḍi=nũ cɑla-ya ɛ
girl.F.Sg=Erg car.F.Sg=Acc drive-Perf.M.Sg be.Pres.3.Sg
'The girl drove the car.'

4 The Resultative Connection

The previous sections have established the basic patterns for Urdu, Sindhi and Punjabi and have surveyed existing cross-linguistic data. This section investigates follow-up questions resulting from the cross-linguistic comparison. For one, we demonstrate that the undergoer generalization established by Ledgeway for Romance also holds for our South Asian languages and that there is indeed a close connection between agreeing adverbs and resultatives. We further investigate whether there are systematic effects connecting targets of AdjAdv agreement

with subject vs. object adverb orientation. We also investigate whether the presence of pseudo-resultatives always results in manner modification and whether the semantic connection posited by Washio (1997) holds.

Our data is based on native speakers, material found in grammars (Trumpp, 1872; Kellogg, 1893; Cummings & Bailey, 1912; McGregor, 1972), the Hindi-Urdu Treebank (HUTB; Bhatt et al., 2009; Palmer et al., 2009) and a new morphosyntactically annotated corpus for Urdu that is currently under development.[6]

4.1 Resultatives in Urdu, Sindhi and Punjabi

The syntactic equivalent of clear resultatives in Urdu, Sindhi and Punjabi are structurally very similar to the agreeing adverbs because resultative semantics in these languages are syntactically expressed via adjective-verb sequences (Ahmed et al., 2012).[7] Some examples are provided in (21)–(23).

(21) a. lɑṛke=ne **pani** **ṭʰanḍ-a** k-iya
boy.M.Sg.Obl=Erg water.M.Sg.Nom cold-M.Sg do-Perf.M.Sg
'The boy made the water cool.' Urdu

b. lɑṛke=ne **caı** **ṭʰanḍ-i** k-i
boy.M.Sg.Obl=Erg tea.F.Sg.Nom cold-F.Sg do-Perf.F.Sg
'The boy made the tea cool.' Urdu

(22) a. cʰokir-e **paŋi** **tʰadʰ-o** kɑ-yo
boy.M.Sg-Obl water.M.Sg.Nom cold-M.Sg do-Perf.M.Sg
'The boy made the water cool.' Sindhi

b. cʰokir-e **cañheñ** **tʰadʰ-i** kɑ-i
boy.M.Sg-Obl tea.F.Sg.Nom cold-F.Sg do-Perf.F.Sg
'The boy made the tea cool.' Sindhi

(23) a. mʊṇḍe=ne **paŋi** **ṭʰanḍ-a** kit-a
boy.M.Sg.Obl=Erg water.M.Sg.Nom cold-M.Sg do-Perf.M.Sg
'The boy made the water cool.' Punjabi

b. mʊṇḍe=ne **ca** **ṭʰanḍ-i** kit-i
boy.M.Sg.Obl=Erg tea.F.Sg.Nom cold-F.Sg do-Perf.F.Sg
'The boy made the tea cool.' Punjabi

[6]This corpus is being developed by Tafseer Ahmed and Mutee U Rahman as part of a DAAD funded German-Pakistan cooperation with the University of Konstanz. The corpus currently contains 8000 sentences, of which 1300 are annotated. The corpus is balanced across different genres.

[7]In Ahmed et al. (2012), some of these sequences are analyzed as complex predicates, others as syntactically biclausal resultatives; nothing hinges on this for the purposes of this paper.

Resultative adjectives always agree with the object, just as with the agreeing adjectives/adverbs. However, a crucial semantic difference is that the adjective only modifies the object and describes its resulting state.

We conclude that as in Romance, Urdu, Sindhi and Punjabi have agreeing adverbs that seem to be structurally connected to resultative adjectives. The agreeing adjectives/adverbs are morphosyntactically distinct from other manner adverbs and are also distinct from resultatives in their semantics.

4.2 Undergoer Sensitivity

In our South Asian languages, the target of AdjAdvs is limited to undergoers.[8] As shown in (24)–(26) for each of the languages, the AdjAdvs can in fact agree with a subject, but only with the subject of an unaccusative verb or the subject of a passivized clause. Crucially, the Adj/Adv does not agree with a subject of an unergative (see the c examples below) or a subject of an agentive transitive (cf. the examples in §3). Unlike what is reported by Ledgeway (2016) and Silvestri (2016), we have not found evidence of AdjAdv agreement with agentive subjects.

(24) a. **gaṛi** (laṛke=se) **ɑcc^{h}-i** cɑla-yi ja-ti
car.F.Sg.Nom boy.M.Sg.Obl=Inst good-F.Sg drive-Perf.F.Sg go-Impf.F.Sg
hɛ
be.Pres.3.Sg
'A/The car is driven well (by the boy).' Urdu passive

b. **roṭi** **ɑcc^{h}-i** pɑk-ti hɛ
bread.F.Sg.Nom good-F.Sg bake-Impf.F.Sg be.Pres.3.Sg
'(The) Bread bakes well.' Urdu unaccusative

c. ye laṛki **ɑcc^{h}-a** hɑns-ti hɛ
this girl.F.Sg.Nom good-M.Sg laugh-Impf.F.Sg be.Pres.3.Sg
'This girl laughs well/nicely.' Urdu unergative

(25) a. **gɑḍḍi** (mʊṇḍe=toñ) **cɑñg-i** cɑla-yi jañ-di
car.F.Sg.Nom boy.M.Sg.Obl=Inst good-F.Sg drive-Perf.F.Sg go-Impf.F.Sg
ɛ
be.Pres.3.Sg
'A/The car is driven well (by the boy).' Punjabi passive

b. **roṭi** **cɑñg-i** pɑk-di ɛ
bread.F.Sg.Nom good-F.Sg bake-Impf.F.Sg be.Pres.3.Sg
'(The) Bread bakes well.' Punjabi unaccusative

[8]Note that we use undergoer in the same broad sense as Ledgeway, i.e., in line with the notion of a Proto-Patient (Dowty, 1991) or the RRG notion of Undergoer (Van Valin & Polla, 1997).

c. e kʊr̥i **cɑñg-a** hɑs-di ɛ
this girl.F.Sg.Nom good-M.Sg laugh-Impf.F.Sg be.Pres.3.Sg
'This girl laughs well/nicely.' Punjabi unergative

(26) a. (cʰokɪre=kʰã) **gaɗi** **sʊʈʰ-i** hɑla-ije tʰi
boy.M.Sg.Obl=Abl car.F.Sg.Nom good-F.Sg drive-Pass.Sg be.Pres.F.Sg
'The car is driven well (by the boy).' Sindhi passive

b. **mani** **sʊʈʰ-i** pac-e tʰi
bread.F.Sg.Nom good-F.Sg bake-Pres.3.Sg be.Pres.F.Sg
'The bread bakes well.' Sindhi unaccusative

c. hi cʰokɪri **sʊʈʰ-o** kʰil-e tʰi
this girl.F.Sg.Nom good-M.Sg laugh-Pres.3.Sg be.Pres.F.Sg
'This girl laughs well/nicely.' Sindhi unergative

4.3 Manner Modification

Overall, very few examples of agreeing adverbs can be found in existing resources and corpora. However, all the examples we have been able to find or think of involve manner modification. Examples (27)–(30) are representative.

(27) a. lɑrki **gana** **ɑccʰ-a** sun-ti hɛ
girl.F.Sg.Nom song.M.Sg.Nom good-M.Sg listen-Impf.F.Sg be.Pers.3.Sg
'The girl listens to the song very well.' Urdu

b. lɑrki **gɑzɑl** **ɑccʰ-i** sun-ti hɛ
girl.F.Sg.Nom song.F.Sg.Nom good-F.Sg listen-Impf.F.Sg be.Pers.3.Sg
'The girl listens to the gazal (type of song) very well.' Urdu

(28) a. **kʊri** **okʰ-i** ga-i
girl.F.Sg.Nom difficult-F.Sg go-Perf.F.Sg
'The girl walked with difficulty.' Punjabi

b. **kʊryã** **kaṭʰɪy-ã** ai-ỹa
girl.F.Pl.Nom together-F.Pl come-Perf.F.Pl
'The girls came together.' Punjabi

c. **gʰoṛi** **bɑṛ-i** **sohɳ-i** ṭʊr-di ɛ
mare.F.Sg.Nom big-F.Sg pretty-F.Sg walk-Impf.F.Sg be.Pres.3.Sg
'The mare walks [very] well/prettily.'[9] Punjabi
(Cummings & Bailey, 1912, Section II, p. 35)

[9]This example involves an additional agreeing modifier, *baṛ-i* 'big', which in turn agrees with the agreeing adverb. We note in passing that this modifier looks like an agreeing adverb itself, but do not go into detail concerning this additional agreement type.

(29) mʊ̀ɳ̀ɖa **kɑhaɳi** boht=i **cɑng-i** lɪkʰ-da
boy.M.Sg.Nom story.F.Sg.Nom much=Foc good-F.Sg write-Impf.M.Sg
ɛ
be.Pres.3.Sg
'The boy writes a/the story very well.' Punjabi

(30) huɑ **xatu** ɗadʰo **sʊʈʰ-o** likʰ-ɛ
she.Nom letter.M.Sg.Nom much/very.M.Sg good-M.Sg write-Pres.3.Sg
tʰi
be.Pres.F.Sg
'She writes a letter very well.' Sindhi

4.4 Variation in Agreement and Available Readings

Recall that Italian showed some variation in agreement possibilities and that the variation coincides with interpretive possibilities (§2.2). In addition, in our South Asian languages, the position of the AdjAdv is the same as that of a resultative adjective. As such, a straight-forward resultative reading is also in principle possible in our language data. The following subsections investigate the relationship between agreement and interpretive possibilities for Urdu. The data for Sindhi and Punjabi are not provided, but are again parallel.

4.4.1 Same Agreement and Position but Semantic Variation

When an adjective is not modifying an argument, but is part of the verbal predication, the adjective always agrees with the undergoer. In examples like (31) this leads to ambiguity as posited by Washio (1997). The sentence can be interpreted either as a AdjAdv manner modification or as a resultative.

(31) **roʈ̀i** **ɑccʰ-i** pɑk-i
bread.F.Sg.Nom good-F.Sg bake-Perf.F.Sg
'The bread baked well/nicely.' (AdjAdv) Urdu
'The bread came out well.' (resultative)

4.4.2 No Agreement: Only AdjAdv

In unergative clauses where there is no undergoer, adjectives can still be used to express adverbial modification, as in (32). In this case, the adjective is realized with default masculine singular morphology and the adverb is subject-oriented.

(32) amra ravi=se **ɑccʰ-a** bol-ti hɛ
Amra.F.Sg.Nom Ravi.M.Sg=Inst good-M.Sg speak-Impf.F.Sg be.Pres.3.Sg
'Amra speaks nicely to Ravi.' Urdu

4.4.3 Agreement Variation: Difference in Meaning

Recall that one possibility for the formation of adverbs was an adjective with oblique inflectional morphology (§3). In (33a) the oblique inflection signals an adverb expressing the manner of the overall baking. In (33b), on the other hand, the agreeing version gives rise to the AdjAdv manner modification.

(33) a. roṭi **ɛs-e** pɑk-i ke sɑb hɛran ho
bread.F.Sg.Nom such-M.Sg.Obl bake-Perf.F.Sg that all surprised be
gɑ-ɛ
go-Perf.M.Pl
'The bread baked in such a way that everyone was surprised.' Urdu
(manner of baking)

b. **roṭi** **ɛs-i** pɑk-i ke k^{h}a-i nɑ
bread.F.Sg.Nom such-F.Sg bake-Perf.F.Sg that eat-Perf.F.Sg not
gɑ-i
go-Perf.F.Sg
'The bread baked in such a way that (no one) was able to eat it.' Urdu
(AdjAdv modification primarily targeting the result state of the bread)

4.5 Summary

The undergoer generalization identified by Ledgeway for Italian holds for our South Asian languages. The close connection between AdjAdv (pseudo-resultatives in Washio and Levinson's terms) and resultatives suggested by Washio (1997) also holds. Furthermore, AdjAdv always express manner adverbs (cf. also Ledgeway 2011). There is variation in agreement patterns, but unlike in Southern Italian, we have not found agreement with agentive subjects. Our agreement effects involve true adverb vs. AdjAdv manner readings targeting the undergoer (§4.4.3) and subject-oriented adverbs with default masculine singular inflection (§4.4.2).

5 Analysis

In this section we develop an analysis of the South Asian facts. We suggest that the connection between resultative adjective and agreeing AdjAdv follows naturally from analyses previously posited for resultative adjectives in Urdu (Ahmed et al., 2012). We posit that the relationship is a diachronic one: the semantic overlap identified by Washio leads to the reinterpretation of a PREDLINK as a manner ADJUNCT over time. That is, an originally resultative construction with a fully-fledged adjective has its semantics shifted towards manner modification of an event. The original adjectival inflection is retained, though we assume that it will be lost over time or be subject to variation, as in Southern Italian (Silvestri, 2016). Our analysis differs from the proposals presented to date for pseudo-resultatives.

5.1 Synchronic Relationship via Movement

In providing an analysis for the Southern Italian data, Ledgeway (2011, 2016) posits a synchronic, derivational relationship between resultative adjectives and the corresponding agreeing adverbs.[10] For example, the agreeing adverb in (34a) is derived via movement from an underlying resultative construction as in (35).

(34) a. Anna miscava **bone** **'i** **carte**
Anna shuffled good.FPL the.PL cards.F
'Anna shuffled the cards well.' (the cards are shuffled well) Cosenza

b. Anna miscava **buonu** 'i carte
Anna shuffled good.MSG the.PL cards.F
'Anna shuffled the cards well.' (Anna shuffles well) Cosenza

(35) Anna miscava **bone**$_i$ ['i carte [$_{\text{RESULTP}}$ bone$_i$]]

Under this analysis, the agreeing adverbs are taken to show agreement because they entered a predicational relationship (ResultP) with the undergoer in the base position. The original adjective then moves further up in the tree to an adverbial position that modifies the event denoted by the VP. This position is responsible for the manner modification reading of the agreeing adverb.

Non-agreeing adjectives (34b), on the other hand, are taken to be base-generated in a higher adverb position. Because they never enter a direct relationship with the undergoer, there is no agreement relation.

(36) Anna miscava [**buonu** [$_{\text{VP}}$ 'i carte]]

Italian shows word order effects in that different positions of an adverb signal scopal relationships. Ledgeway's account makes crucial use of this. We have not found similar word order effects in our South Asian languages.

5.2 Direct Predication Modification

Levinson (2010) posits a different relationship by which pseudo-resultatives (our AdjAdv) can modify the root of a verb at a certain point in the derivation, thus resulting in the event modification reading. The target of agreement is assumed to be the closest NP in the tree. A crucial part of her account is that only root creation verbs can be involved as these show the right resultative semantics. However, the data from Urdu, Sindhi and Punjabi as well as Southern Italian show that agreeing adverbs in these languages are not confined to root creation verbs. Levinson (2010) also does not consider the undergoer connection noted by Ledgeway, which provides a broader generalization for the data.

[10] Silvestri (2016) broadly follows Ledgeway's analysis but works out more precise details accounting for agreement variation.

5.3 Our Proposal

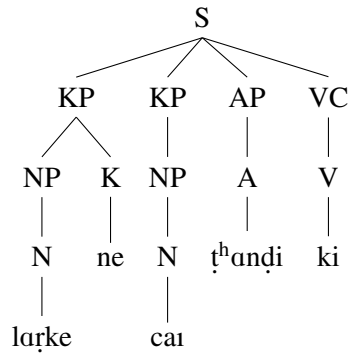
Ledgeway posits a synchronic derivational relationship between resultatives and pseudo-resultatives. We posit a diachronic relationship, but do note that the compilation of concrete diachronic evidence remains to be done.

5.3.1 Resultative Adjectives — PREDLINK

We see the resultative as the historically prior construction and follow Ahmed et al. (2012) in our analysis. They posit the c-structure in (38) and the f-structure in (39) for a resultative as in (37).[11]

(37) lɑṛke=ne **caı** **ṭ^{h}ɑnḍ-i** k-i
boy.M.Sg.Obl=Erg tea.F.Sg.Nom cold-F.Sg do-Perf.F.Sg
'The boy cooled the tea.' (lit. 'The boy did the tea cool.') Urdu

(38)



(39)

$$\begin{bmatrix} \text{PRED} & \text{'kar<SUBJ OBJ PREDLINK>'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'lɑṛka'} \\ \text{NUM} & \text{sg} \\ \text{GEND} & \text{masc} \end{bmatrix} \\ \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{'caı'} \\ \text{NUM} & \text{sg} \\ \text{GEND} & \text{fem} \end{bmatrix} \\ \text{PREDLINK} & \begin{bmatrix} \text{PRED} & \text{'ṭ}^{h}\text{ɑnḍi'} \\ \text{ATYPE} & \text{predicative} \\ \text{NUM} & \text{sg} \\ \text{GEND} & \text{fem} \end{bmatrix} \end{bmatrix}$$

We assume a verb frame augmentation approach (cf. Christie 2010) by which the argument frame of semantically suitable (agentive, transitive) verbs is augmented with a predicative element in the right syntactic and semantic conditions (cf. Wechsler 1995, 2005). In the syntax, this predicative element is a PREDLINK containing the resultative adjective. Via the standard PREDLINK analysis (Butt et al., 1999), the adjective *ṭ^{h}anḍi* 'cold' in (37) is analyzed as being predicated of *cai* 'tea'. Together with the verb *kar* 'do', this has the semantics of a resultative.

The agreement facts are accounted for by way of general agreement rules governing PREDLINKs. Whether and how a PREDLINK agrees with the entity it is predicating over is governed by language-dependent factors (Butt et al., 1999). In

[11] Adj-V combinations as in (34) have traditionally been seen as complex predicates (e.g., Mohanan 1994). However, there is little structural evidence for this. Unlike with standard complex predicates in Urdu, the adjective is not contained within the verbal complex (VC) and the adjective is not licensed by any other element in the clause, nor does it contribute to the overall argument structure of the clause. Also see the Complex Predicate Reference Bank: http://ling.uni-konstanz.de/pages/home/pargram_urdu/main/Resources.html#CP

Urdu, adjectival PREDLINKs agree in gender and number with the argument they are predicating over. In our South Asian languages there is thus agreement between the adjective and the predicated-of noun as a reflex of the general predication relation. Under the proposal of Ahmed et al. (2012), the PREDLINK in Urdu agrees with and predicates of the lowest grammatical function in the f-structure as per the grammatical function hierarchy in Bresnan (2001). In (39), this is the OBJ. Agreement is realized as part of the lexical entry of the resultative adjective, using standard inside-out functional constraints as discussed by e.g., Attia (2008).

Our analysis is in line with how predicatives are analyzed generally under the PREDLINK proposal (e.g., Attia 2008, Laczkó 2012). However, resultatives have traditionally been analyzed as containing an XCOMP rather than a PREDLINK within LFG (and the equivalent in HPSG), as first proposed by Simpson (2006) (e.g., Christie 2010, also Müller (2002, 2016) and references therein).

If predicatives are treated as a PREDLINK (Butt et al., 1999), then resultatives should also be analyzed in terms of a PREDLINK since they also instantiate a predication relation, albeit a specific one. Conversely, under the XCOMP proposal, both predicatives and resultatives would be treated as XCOMPs. However, under an XCOMP proposal, *cai* 'tea' in (39) would function as an embedded subject within the resultative XCOMP headed by *ʈʰaɳḍi* 'cold'. At least for the South Asian languages examined here, there is no evidence for such embedded subjects, i.e., *cai* 'tea' in (37) shows no evidence of subjecthood (via the tests established for Urdu/Hindi by Mohanan (1994), cf. also Attia (2008) and Laczkó (2012)).

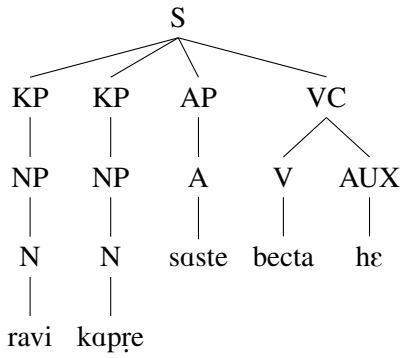
5.3.2 AdjAdvs (Agreeing Adverbs/Adjectives)

We analyze AdjAdvs much along the same lines, with the major difference being that the agreeing AdjAdv does not give rise to a PREDLINK but to a clause-level adjunct at f-structure. (41) and (42) provide a c-structure and an f-structure analysis for (1), repeated in (40). Under this analysis, the AdjAdv is treated at c-structure as an adjective directly attaching as a daughter to the clause. The difference lies in the f-structure, where the adjective corresponds to a clause level ADJUNCT.

(40) rɑvi **kɑpṛe** **sɑst-e** bec-ta hɛ
Ravi.M.Sg.Nom clothes.M.Pl.Nom cheap-M.Pl sell-Impf.M.Sg be.Pres.3.Sg
'Ravi sells clothes cheap.' Urdu
(he sells them cheaply, the clothes are not inherently cheap)

We posit that diachronic change has caused an f-structural reanalysis. The reanalysis is due to the overlapping semantics of a resultative and a manner adverb as described by Washio in that the manner of performing an action determines the resultative state. The diachronic change ultimately is predicted to also give rise to a c-structural reanalysis so that the original predicative adjective is reanalyzed as a manner adverb. However, at this stage, the f-structural function is one of clause level manner modification, but at c-structure the original part of speech is still retained. This explains why a manner modifier displays agreement with an argument

(41)



(42)

$$\begin{bmatrix} \text{PRED} & \text{`bec<SUBJ OBJ>'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`rɑvi'} \\ \text{NUM} & \text{sg} \\ \text{GEND} & \text{masc} \end{bmatrix} \\ \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{`kɑpṛɑ'} \\ \text{NUM} & \text{pl} \\ \text{GEND} & \text{masc} \end{bmatrix} \\ \text{ADJUNCT} & \left\{ \begin{bmatrix} \text{PRED} & \text{`sɑst'} \\ \text{MOD-TYPE} & \text{manner} \\ \text{NUM} & \text{pl} \\ \text{GEND} & \text{masc} \end{bmatrix} \right\} \end{bmatrix}$$

of the clause — the agreement is a reflex of the original resultative adjective agreement that targets undergoers. This agreement is predicted to be lost or regularized over time and to be subject to variation during the diachronic change, as in Southern Italian. In terms of the annotation of the agreement pattern, we can use the same inside-out functional constraints as with the resultatives, with the slight difference that the inside-out path starts out from an ADJUNCT set item instead of a PREDLINK function.

6 Summary and Conclusions

In this paper we have presented novel data from Urdu, Sindhi and Punjabi; we have argued that these languages contain agreeing adverbs that are originally based on predicational adjectives. The data parallels the patterns found in Southern Italian dialects to a great extent. Given the crosslinguistic similarities, it seems that the same syntactic and semantic forces are at play across languages. The overlap of meaning between specifying the result state of an undergoer and modifying the overall result subevent opens up the possibility for a manner adverbial meaning of originally resultative adjectives. In our analysis, this subtle but significant difference is captured at the level of f-structure in a difference of the functional contribution: PREDLINK vs. ADJUNCT. The agreement targeting undergoers by the AdjAdvs is taken to be a reflex of the original predicative structure and we predict that it will be lost over time and that the adjective will then be reanalyzed as a straightforward manner adverb at c-structure.

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