

Genitive and Adjective in Tocharian¹

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In Indo-European languages generally a noun may modify another noun either by being put in the genitive (*the power of the president/the president's power*) or by being made into an adjective (*presidential power*). The choice is often determined by definiteness and/or animacy. Some branches of Indo-European, i.e., western Anatolian languages, Slavic, and Tocharian, choose the adjectival option much more commonly than is "standard" in Indo-European. How these two options are distributed, particularly in Tocharian, forms the basis of this investigation. Particularly interesting from the syntactic point of view is the possibility, in multiply embedded structures (*John's neighbor's boy*) where the modifiers are adjectives, of an adjective's agreeing in gender with the noun underlying the next adjective in the train, rather than the head noun of the noun phrase itself, in Tocharian and some Slavic languages.

Introduction

In almost all Indo-European languages, one noun may modify another in one of three ways: (1) as part of a compound (e.g., *farmhouse*), (2) as a genitive (or prepositional phrase that has replaced the genitive) (e.g., *the president's power/the power of the president*), or (3) by being turned into an adjective (e.g., *presidential power*). Our interest in this paper will be on the second and third options and their interrelationships.

In the Germanic and Romance languages the genitive option is typically used when the modifying noun is definite and the adjectival option used when the modifying noun is indefinite, i.e., *presidential power* is the power of a president or the power of presidents in general, whereas *the president's power* is typically the power of a particular individual.² As a corollary,

¹I appreciate the input of both Melanie Malzahn and Craig Melchert into this paper which is much the better for their assistance. Anything the reader finds wrong-headed or unlikely must, of course, be laid at my door, not theirs.

²The distinction is by no means absolute, particularly one can use the genitive option in a generic sense, e.g., *under the constitution the president's powers are*

named individuals are by definition definite and thus are not normally to be found as adjectives (e.g., *Sam's book* but not **the/a Samuelan book*).³ It is also the case that many nouns, but by no means all, have derived adjectives beside them. Where no adjective exists, the genitive does duty for both the definite and indefinite (e.g., *the sense of smell*⁴). So far as I can tell, Albanian, Modern Greek, Baltic, Iranian, and Indic(?) are roughly similar to Germanic and Romance. Tocharian, Slavic, (some) Greek, and (some) Anatolian form a typological subgroup of Indo-European wherein all nouns, personal or not, dependent on another noun may either be in the genitive case⁵ or in the form of a derived adjective.⁶ We will be looking at the data, first from the point of view of Tocharian to see whether the patterns of use of the two alternatives match or don't match.

considerable. Thus here, and elsewhere, we can expect lots of fuzzy edges and statistical truths rather than 'bright line' absolutes.

³There are exceptions of course in the case of important cultural or political figures (e.g., *Shakespearean plays*, *the Jacobean Age*, *Jacksonian democracy*). Wherever these occur in English, however, they seem learned rather than colloquial and they are all ultimately modeled on Latin examples of the type that may, in turn, be modeled on Greek sources (see below, section 5). One might note that this same set of personal names normally does not take part in compounding either.

⁴There is, of course, *olfactory* as an adjective corresponding to *smell*, but it is hardly colloquial. This kind of adjective and its relationship to the genitive has received very little attention at the hands of English grammarians. Of the classic, large-scale grammars of English, e.g., Curme (1935), Jespersen (1936), Quirk et al. (1972), and Huddleston and Pullum (2002), only Quirk et al. mention this type of adjective specifically (and briefly) and even they do not explore its relationship to the genitive.

⁵Or of course in a prepositional phrase such as English 'of the house.'

⁶These derived adjectives are usually called "possessive adjectives" in both Slavic and Anatolian. I'm going to use the semantically neutral 'denominal adjectives' (following Quirk, et al. [1972:263]) to distinguish them from Tocharian adjectives in *-tstse* 'provided with X, possessing X,' e.g., *ekaññetstse* 'having possessions,' *stanātstse* 'having trees,' *tärkarwatstse* 'cloudy.' Melchert has used the term 'genitival adjectives' for Anatolian.

Following Benveniste, Watkins (1967:2191) notes that in a number of older Indo-European languages (among which are Latin and Hittite) the dative case is the case of possession (*liber est Marco* 'Marcus has a book'), while the genitive is the case of belonging (*liber est Marci* 'the book belongs to Marcus/the book is Marcus's'). While neither in grammar nor the real world is there a bright line separating possession from belonging, the denominal adjectives of Tocharian, Slavic, and Anatolian are centered around belonging.

1. The Situation in Tocharian⁷

I have sampled Tocharian B nouns⁸ to see whether they have genitives or derived denominal adjectives attested. For all nouns both denominal adjectives and genitives are possible.⁹ Characteristic of the Tocharian languages is the widespread use of derived denominal adjectives where in English, etc., one would expect a nominal genitive, e.g., TchB *šaiššesšem* [ADJ.] *skwanma* ‘the fortunes of the world’ or *po ešanešana* [ADJ.] *tekanmane kartse* ‘[it is] good for all diseases of the eyes.’¹⁰ Certainly at times the two formations are semantically identical, e.g., TchB *šlentse* [GEN.] *tronkne lyam=ompalskoñne* ‘he sat [preterite] in meditation in a hollow of the mountain’ but *šl[i]ye* [ADJ.] *gune cau šamy ompalskoñne* ‘he sat [imperfect] in meditation in that mountain cave,’ or TchB *oñkolmamts* [GEN.] *walo* ‘king of the elephants,’ but A *oñkälmeñ* [ADJ.] *wäl* ‘king of the elephants,’ B *klīye rano trenksate rūpn=eniwentse* [GEN.] ‘the woman clung to/took on the shape of a man’ (9b4), but *eñkwaññe* [ADJ.] *šotri* ‘male sign’ [membrum virile]’ (400a2), B *rūpn=eniwentse* [GEN.] ‘in the shape of a man’ (9b4), but *šecakāññe* [ADJ.] *rupsa* ‘in the shape of a lion’ (576b7), B

⁷While we are certainly going to be talking about both syntax and semantics of Tocharian adjectives, we will not have to talk about their word-order. That task has been capably done by Gabrielle Knoll (1996). Suffice it to say that in Tocharian B adjectives normally precede the noun they modify. In ordinary prose the percentage of adjectives which precede is something on the order of 90%. It is even higher in Tocharian A. The adjectives we are discussing here follow the same rules.

⁸The sample consisted of at least 30% of those nouns listed in *A Dictionary of Tocharian B*—for designations of animals the sample is essentially 100%. Tocharian B also has denominal adjectives derived from the first and second person pronouns. In Classical Tocharian we have *ñiñne* ‘of me’ and *tañne* ‘of thee’ (in Classical and Late Tocharian we have *ñšašše* and *cišše* respectively with the same meanings [Peyrot, 2008:95] and *yesašše* ‘of you’). They are very rare (by happenstance the first person plural is not attested), in contrast to the genitive pronouns (*ñi*, *tañ*, *wesāñ/wesi*, *yesāñ/yesi*), but I have no exact statistics on them and will leave them out of account in what follows.

⁹Admittedly not all nouns have both a genitive and a derived adjective attested, but it is clear that both are so widespread that both must be essentially universal.

¹⁰See Zimmer (1982/83) for a most useful discussion of the function of denominal adjectives in *-šše/ši* in Tocharian. He explicitly notes their use where in other Indo-European languages we might expect a genitive (genitive of possession, of origin, of place, etc.). They may also be used in place of a genitive as the object of a nominalized verb. But they do not occur as the subject of a nominalized verb. Hajnal (2004) also gives a list of the functions of the denominal adjectives.

skrenantse [GEN.] *paruwa* ‘crow-feathers’ (W-32b3), but *skrenše* [ADJ.] *paiyye* ‘crow-foot’ (M-1b8).¹¹

Denominal adjectives can be derived from singulars (e.g., B *ekašše* ‘of an eye’ from *ek* ‘eye,’ B *cmelše*, A *cmolši* ‘pertaining to (a) birth’ from *camel* and *cmol* ‘birth’), duals (e.g., B *ešanešše* ‘of the two eyes’ from *ešane* ‘the two eyes’), and plurals (e.g., B *cmelašše*, A *cmolwāši* ‘pertaining to births’ from *cmela* and *cmolu* ‘births’). Naturally, the number of attested derivatives of duals and plurals is small.¹²

Definiteness *per se* seems not to be the strongest predictor of the choice between genitive and adjective.¹³ However, animacy does. If the noun represented by the genitive or denominal adjective is low in animacy, the adjective is overwhelmingly chosen; if the noun is high in animacy, the genitive is overwhelmingly chosen.

	-animate +abstract	-animate +concrete	+animate -human	+animate +human -proper	+animate +human +proper
adjective only	67	59	52	26	02
Total adjective ¹⁴	88	85	65	61	02
both	21	26	13	35	00
Total genitive ¹⁵	28	39	61	74	32
genitive only	07	13	48	39	32

It is noteworthy that the two “curves” (i.e., for denominal adjectives and genitives) are rather different in that they are not altogether mirror-images of each other. The genitive shows a steady upward slope from inanimate abstracts to human

¹¹It is important to note that in all of these examples the modifier, whether and adjective or a genitive, has generic rather than specific meaning. Thus, in these cases at least, it is not a question of genitive = definite and adjective = indefinite.

¹²Not surprisingly, where the context is unambiguous, the singular denominal adjective can be used in place of the plural (and presumably dual), e.g., A *ñäkci kropam* ‘in a crowd of gods’ (YQ 1.12 1/2a3 [Ji, et al., 1998:114]). Hajnal (2004) provides a substantially complete list of all such adjectives derived from duals or plural. He also provides several examples of singular denominal adjectives used interchangeably with plural denominal adjectives (pg. 148).

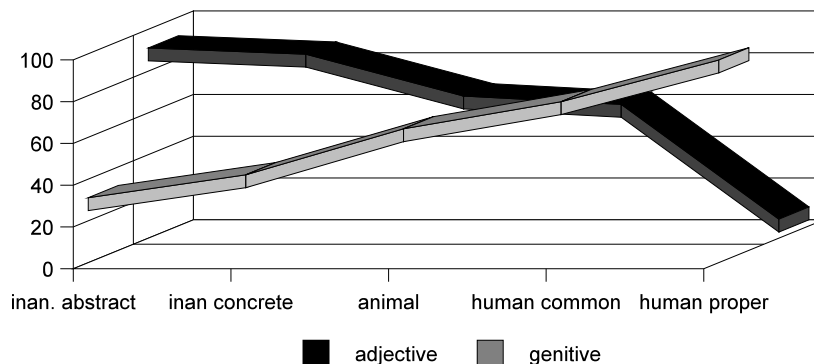
¹³It is quite possible that the role of definiteness in the choice of adjective or genitive is being underestimated: given the very fragmentary nature of most Tocharian texts, the determination of definiteness which depends so much on contextual and discourse clues is often difficult to ascertain.

¹⁴The sum of “adjective only” and “both.”

¹⁵The sum of “genitive only” and “both.”

proper nouns. Denominal adjectives, on the other hand, show distinct steps: a high plateau for inanimates, a lower plateau for animate common nouns (both animal and human) and very low “plateau” for human proper nouns.

Adjectives and Genitives in Tocharian B



Thus, while the overall incidence of denominal adjectives is 56% in Tocharian B and genitives are correspondingly 44% of the total, for abstract nouns the ratio is 76 to 24, for concrete inanimate nouns the ratio is 69 to 31, for concrete animate but non-human nouns the ratio is 51 to 48, and for common human nouns the ratio is 45 to 55,¹⁶ and for proper (personal) human nouns the ratio is 4 to 96. In the middle animate categories (concrete animate but non-human and common human nouns) it would appear that definiteness plays a role (and favors the genitive). Thus the adjective *lantuññe* always, so far as I can tell, means ‘royal,’ i.e., ‘pertaining to a king/to kings in general,’ while the genitive *lānte* means ‘of a [particular] king’ and often conjoined with the proper name of the king, thus ‘of king X,’ just as in English. However, as already noted, the fragmentary nature of most surviving texts makes definiteness in any particular instance often difficult to demonstrate. The ratios for Tocharian A appear to be quite similar.

Nested Modifiers

Genitives and denominal adjectives participate in some interesting syntactic behavior. The two may be conjoined as modifiers of the same noun, e.g., B *sañkantse* [GEN.] *pelaiykneṣṣe* [ADJ.] *wāntare* ‘a legal affair of the community.’ A

¹⁶ Cf. *rūpn=ēiwentse* [GEN.] ‘in the shape of a man,’ but *ṣecakāññe* [ADJ.] *rupsa* ‘in the shape of a lion.’

noun may be modified by a genitive that is itself modified by an adjective, e.g., B *kroksām̐ts* [GEN.] *weṣeñña māka* [ADJ.] ‘the sound of many bees.’¹⁷ Indeed, if the dependent genitive is itself modified by a “regular” adjective (i.e., one that is not derived from a dependent genitive), the genitive is apparently never changed into a denominal adjective.¹⁸ The modifying adjective is sometimes in an overtly marked genitive form, but more often in the unmarked accusative form (for the agreement rule, see Krause and Thomas, 1960:92). The modifying adjective may be a “regular” one, as with the previous examples, or a denominal one, e.g., TchB *jambudvipṣeṃ* [ADJ.] *śāmnantsā* [GEN.] *naumye ysāṣṣe* ‘the golden jewel of the peoples of India.’

Expectedly, a noun may be modified by a genitive which, in turn, is modified by another genitive, B *Airawantaṃtse* [GEN.] *oñkolmām̐ts* [GEN.] *lānte* [GEN.] *seyi* [GEN.] *śuñc* ‘the trunk of Airawanta, the son of the king of elephants.’¹⁹ Less expectedly, the noun may be modified by a denominal adjective in turn modified by a genitive, *akālk seyi* [GEN.] *cmelñeṣṣe* [ADJ.] ‘the wish for the birth of a son.’²⁰ A noun may be modified by a denominal adjective which, in turn, is modified by another denominal adjective, B *lakṣaṇai* [ADJ., FEM. ACC. SG.] *klautsaiṣṣe* [ADJ., MASC. NOM. SG.] *ṣpel* [NOUN, MASC. NOM. SG.] ‘poultice of fish ears’ which shows the more

¹⁷Other examples (all B): *trai* [ADJ.] *śaiṣṣentso* [GEN.] *kāṣṣi* ‘teacher of three worlds’ (45a4), *mamepi* [ADJ.] *ypan̐tse* [GEN.] *traksim* ‘seeds of ripe barley’ (W-10a5), *po tetemoṣām̐ts* [ADJ.] *onolments* [GEN.] *srukālñe* ‘the death of all born beings’ (2a3), *tsorrsa larepi* [ADJ.] *soṃskentse* [GEN.] ‘by the separation of [my] dear son’ (86b4) (note here that we have, not a regular adnominal genitive, but objective genitive), *śiñcaccepi* [ADJ.] *ṣlentse* [GEN.] *tsāñkarwaṣṣe* ‘NOUN [in lacuna] pertaining to the peaks of the snowy mountain’ (H-ADD.149.79a4). Compare English *a young children’s edition* (Huddleston and Pullum, 2002:444) or, with a compound rather than a genitive, *those Egyptian cotton shirts* (ibid.) or German *ein wilder Schweinskopf* or *voller Mondenschein* (both from Goethe, quoted by Jespersen, 1936:284).

¹⁸The only possible exception is *alyek ypoysi brāhmāni* ‘foreign brahmans’ but *alyek-ypoysi* is probably better taken, as it usually is, as a compound (or, rather, a denominal adjective derived from a compound).

¹⁹Other examples (all B): *larona waipeccenta ṣaṇ śamnāṣṣeṃts* ‘the precious possessions of his own people’ (46b4), *tañ ṣaulantse ākeṣ* ‘toward the end of thy life’ (520a4), *lānte ypoyn̐tse salyai* ‘the border of the king’s country’ (86a5).

²⁰Other examples (all B): *sārwanāṣṣe tañ pālentaṣṣe meñe* ‘the full moon of thy face’ (71a5), *śiñcaccepi ṣlentse tsāñkarwaṣṣe N* ‘[something] pertaining to the peaks of the snowy mountain’ (H-ADD.149.79a4), or *sārwanāṣṣe mañḍālñe poṣiñtse* ‘the mañḍala of the Buddha’s face’ (H-149-ADD.4a4).

deeply embedded denominal adjective (*lakṣaṇai*) agreeing in the genitive (formally accusative, see above) case appropriate to the genitive noun underlying the denominal adjective *klautsaiṣṣe* from the feminine noun *klautso* ‘ear’).²¹ In both these cases the denominal adjective looks to be the surface structure manifestation of a more underlying genitive. It would appear that animates do not appear as denominal adjectives at the first level of embedding and inanimates do not (normally) appear as genitives at the second level of embedding.

Tocharian Rule: after adjective-agreement has been applied, a genitive may be turned into a denominal adjective; both rules are iterative, working up from the most embedded sentence to the least; the genitive-to-adjective rule is more likely to be triggered the lower the animacy of the noun in the genitive case and the lower the definiteness (animacy will trump definiteness). Thus:

[[[gen] gen] NOUN]
 [[[adj]_a] gen]_a] NOUN] (i.e., adjective agrees with genitive, not NOUN)
 [[[gen] adj]_b] NOUN]_b] (i.e., adjective agrees with NOUN)
 [[[adj]_a] adj]_b] NOUN]_b] (i.e., first adjective agrees with genitive that underlies second adjective; second adjective agrees with NOUN)

Tocharian denominal adjectives may also be antecedents of pronouns, for which see the discussion below (section 3).

²¹Other examples (all B): *kewiye melteṣe ṣpel* ‘poultice of cow dung’ (P-2a6), *pañāktāmñe perneṣṣe akālksa* ‘by wish for Buddha-worth’ (81a6), *klyomñai ytāriṣṣe* ... *yepesa* ‘with the knife of the noble way’ (174a6), and *empelye saṃsārāṣṣai kwaṣṣaine* ‘in the village of the terrible samsāra’ (295a2), and *ñwai-riṣṣe* ‘inhabitant of *Ñuwa Riye’ (SI B Toch. 12.1 [Pinault, 1998:16]). In the last three examples the first adjective has explicitly the gender appropriate to the noun underlying the second (like *lakṣaṇai klautsaiṣṣe ṣpel*); the *empelye* of the text is not to be “corrected” away to *empelyai* as often suggested. The first two examples do not show that kind of agreement overtly because all the nouns and adjectives are masculine.

Particularly interesting is the double example at 41a3: *mākce_u ykeṣṣa kektseñe tā_u kenaṣṣe satāṣlñe* ‘whatever place the body [has], exhalation [has] that [place on] earth.’ Here we have *mākce_u*, which is masculine, agreeing with the underlying *ike* ‘place’ (masc.), even though *ike* (rather the genitive *ykentse*) has become *ykeṣṣa*, a feminine adjective to agree with the feminine noun *kektseñe*. Conversely *tā_u* is feminine to agree with the feminine noun *kem* which has been replaced by the adjective, *kenaṣṣe* (masculine to agree with *satāṣlñe*). Note particularly that the *relative pronoun* (*mākce_u*) is masculine because the underlying noun is masculine.

Form of Denominal Adjectives in Tocharian

Denominal adjectives in *-(i)ye* [A *-i*], *-ññe* [A *-ñi* and *-eñ*], and *-sse* [A *-sī*] would appear to all serve the same range of functions and thus to be synonymous.²² Occasionally there will indeed be synonymous doublets: (all B) *rññe* ~ *rīsse* ‘pertaining to a city,’ (common) *ñākcyē* ~ (rare) *ñākteññe* ‘divine,’ *šlye* ~ *šleşse* ‘pertaining to a mountain,’ *keñiye* ~ *kenāsse* ‘pertaining to the ground, land.’ The suffix *-(i)ye* occurs in sporadic clusters across most of the spectrum of animacy: natural features: B *wriyeşse* ‘dew-’ from *war* ‘water’ (with secondary *-sse*, cf. Gk. *hudria* ‘water-pot,’ Alb. *ujë* ‘water’ [*< *udryom*]), B *šlyiye* ‘mountain-’ from *šale* ‘mountain,’ B *keñiye* ‘land-, earth-’ from *keñ* ‘land, earth’ (cf. Skt. *kṣāmya-* ‘earthen,’ Gk. *chthónios* ‘in or under the earth’), A *wärti* ‘forest-’ from *wärt* ‘forest’; other (mixed inanimates): B *keşcyē* ‘hungry’ from *kest* ‘hunger’ (cf. A *kaşši* ‘hungry’ which surely belonged to this type earlier²³), B *ypiye* ‘barley-’ from *yap* ‘barley’ (cf. Gk. *zeiaí* [pl.] ‘spelt’), A *ariñci* ‘heart-’ from *ariñc* ‘heart,’ A *kom-pärkänči* ‘eastern’ from *kom-pärkänč* ‘dawn,’ A *-puklyi* ‘having so many years’ from *pukul* ‘year,’ A *-koñi* ‘having so many days’ from *koñ* ‘day,’ A *was̄ti* ‘house-’ from *was̄t* ‘house’; animals (mostly domestic): B *kuñiye* ‘canine’ from *ku* ‘dog’ (cf. Skt. *śunyam* ‘a number of dogs’), B *kaiyye* ‘bovine’ and B *kewiye* ‘butter’ from *keu* ‘cow’ (probably reflecting PIE **g^wóuyo-* and **g^wouyo-* respectively, cf. Skt. *gávya-* ~ *gavyá-* ‘bovine,’ Gk. *tessará-boios* ‘four cows-worth,’ Arm. *kog̃i* ‘butter’), B *aiyye* ‘ovine’ (cf. Skt. *ávya-* ‘ovine,’ Gk. *oía* ‘sheepskin’), B *aşiyē* ‘hircine’ from *as̄* ‘(she-)goat,’ B *wärmiye* ‘ant-’ from *warme* ‘ant,’ A *şişki* ‘leonine’ from *şişäk* ‘lion’; highly animate common nouns: B *patarye* ‘paternal’ (cf. Skt. *pītrya-* ~ *pītriya-*, Gk. *pátrios*, Lat. *patrius*, all ‘paternal,’ OIr *aithre* ‘paternal side of the family’), B *matarye* ‘maternal,’ A *lāñci* ‘royal’ from [acc.] *lānt* ‘king,’ B *ñākciye* [A *ñākci*] ‘divine’ from *ñakte/ñkät* ‘god.’²⁴ It is of course the ubiquitous PIE suffix **(i)yo-*. It is significant that it does not appear at the highest end of the animacy spectrum, proper nouns.

²²Knoll (1996) tries hard to differentiate these different morphological types semantically, but, in reality, they all seem to be the same.

²³The nominative masculine plural of *kaşši* is *kaşšin*. The ending is *-ini* in the regular denominal adjectival type. Both types of Tocharian A plural are etymologically secondary.

²⁴The large number of this set of words with exact extra-Tocharian cognates shows its antiquity; the lack of palatalization in *şişki* and *was̄ti* suggest this suffix had a certain amount of post-Proto-Tocharian productivity in Tocharian A.

The other two suffixes, *-ññe* and *-ṣṣe* have more predictable distributions. The Tocharian B suffix *-ññe*, does not normally appear with inanimate abstract nouns at all; it appears rarely with inanimate concrete nouns (e.g., *eñcuwaññe* ‘of iron,’ *ysārñe* ‘wheaten’), but appears, beside *-(i)ye*, just about two thirds of the time (68% *-ññe*, 32% *-(i)ye*) with words designating animals and 79% of the time with human common nouns (beside mostly *-ṣṣe*). Given this connection with animacy, it is surprising that there are few adjectives in *-ññe* from human proper nouns.²⁵ In PIE terms *-ññe* represents **-n-yo-* and reflects adjectives derived from the common *n*-stem doublets of Proto-Tocharian.²⁶ Tocharian A *-ñi* is rare and does not show the same animacy distribution as TchB *-ññe* (A *oñi* ‘human [from *oñk*] ‘human being’ [cf. B *eñkwaññe*], but *praskañi* ‘frightful,’ and *yokañi* ‘thirsty’). The suffix *-eṃ* (= B *-aññe* and *-eññe*), however, does show the expected predilection for animate nouns (e.g., *oñkāleṃ* ‘pertaining to an elephant’ [B *oñkolmaññe*], *pättāmñktem* ‘pertaining to the Buddha’ [B *paññāktāññe*], *lwem* ‘pertaining to an animal’ [B *lwāññe*]).

The suffix *-ṣṣe* [A *-ṣi*] occurs everywhere else and is the only suffix than can form denominal adjectives from duals and plurals, no matter what semantic group they may belong to.²⁷ It is universal in forming denominal adjectives from abstract inanimates, and almost universal for human proper nouns at the other end of the animacy scale. Precisely because it is so productive, it has long since spread far beyond its original distribution and its exact origin is not as obvious as it is for *-iye* and *-ññe*.

It is hard not to take *-ṣṣe* as somehow related to the Common Anatolian denominal adjective suffix, *-assa-*. This ending is ubiquitous in Luvian and certain other western Anatolian languages, and is found residually in Hittite.²⁸

²⁵ *Dharmasomāññe* beside *Dharmasome* (the author of the *Udānālañkāra*) is an exceptional example of *-ññe* from a human proper name.

²⁶ The same *n*-stem doublets that have left their trace in the ubiquitous genitives singular in *-ntse*, genitive plurals in *-nts*, and animate accusative singulars in *-m* (see Adams 1988). Very rarely we have *-uññe* rather than *-ññe*, i.e., *kotruññe* ‘pertaining to the family’, *lantuññe* ‘royal’, *lykuññe* ‘pertaining to a thief.’

²⁷ The one exception is B *-pikwalaññe* used in forming compound adjectives denoting age, e.g., *ikaṃ-pikwalaññe* ‘twenty years’ old.’

²⁸ Thus Hittite *hanzāssa-* ‘offspring,’ *iugassa-* ‘yearling’ *pedassahh-* ‘to put in place’ (< **pedessa-* < *peda-* ‘place’) (Kloekhorst 2008:216), *genussa-* ‘knee-pad.’

However, Anatolianists are not in full agreement about the history of *-assa-*. Heretofore the standard explanation (Melchert in various publications) takes it as reflecting PIE **-eh_aso-* and compares it directly with Latin *-ārius* (e.g., *agrārius* ‘agrarian’) from **-eh_asyo-*.²⁹ If **-eh_aso-* is indeed the PIE ancestor of Anatolian *-assa-*, then Tocharian *-ṣṣe* must have arisen from *-āṣṣe* by redivision into *-ā-ṣṣe* and then the spread of *-ṣṣe* to other noun types (just as the productive suffix *-tste* ‘having X’ is redivided from *-ātstse* from PIE **-eh_atyo-*).

However, Kloekhorst (2008:216), following Georgiev (1967:164), thinks (with good evidence) that PIE **-Vh₂sV-* is preserved in Hittite as *-VhsV-* and that *-assa-* comes from **-Vsyo-*. If so, the Tocharian *-ṣṣe* and Anatolian *-ssa-* are the PIE genitive ending **-syo* added to the various stem vowel types and reanalyzed as an inflectable stem-formative rather than an inflectional ending.³⁰

2. The Situation in Old Church Slavonic

Superficially at least the situation in Slavic, particularly Old Church Slavonic, most nearly resembles that which we find in Tocharian. Particularly it is the case that, as with Tocharian, the derivation of denominal adjectives from nouns is fully productive, though, unlike Tocharian, denominal adjectives can only be derived from the singular of the noun.

A peculiarity of Slavic, which has received less attention than it deserves, is that Slavic, unlike Tocharian, has *two* systems of derived denominal adjectives superimposed on one another. The first, and older, system derives adjectives from nouns from abstract inanimates up the animacy scale through the “lower” end of the non-proper human nouns. This system has varied exponents, including descendants of PIE **-(i)yo-*, but is probably most commonly characterized by Proto-Slavic **-bško/a-*, e.g., *zemŕn-* ‘earth’ > *zemŕsko/a-* ‘earthly,’ *mirŕ* ‘world’ > *mirŕsko/a-* ‘worldly,’ *čŕlověkŕ* ‘human being’ > *čŕlověčŕsko/a-* ‘human.’ This system acts much as does in English, etc. (and to a certain extent in Tocharian), in that “there is a strong

They may also occur nominalized: *Istanamassa-* ‘deity of the ear,’ *Sakuwassa-* ‘deity of the eye,’ *Tarhuntassa-* ‘city of (the god) *Tarhunta-*, etc. (Hoffner and Melchert 2008:56).

²⁹Though not customary to do so, I would add Greek adjectives in *-aios* (< **-eh_asyo-*) as well.

³⁰Both Lycian and Carian also show examples of secondary inflection of the inherited genitive ending **-oso* (Melchert, forthcoming).

tendency for adjectives to be used for indefinite reference, whereas nouns are used for definite reference. *Dijavolb přeměni se vb možeskb* [ADJECTIVE] *obrazb* (Suprasliensis 78.24) ‘The devil changed himself into the form of a man’ [beside] *vblēzb vb lono moža* [GEN.] *močaaše* (Suprasliensis 567.60) ‘Getting into the man’s chest, it was torturing him’” (Huntley 2002:179-180).³¹

However, unlike English and Tocharian, there is a second system, for personal nouns only (i.e., those at the very top of the animacy scale). Adjectives from *o*-stem nouns at this level have the suffix *-ovo/a-*³² and adjectives from *a*-stem nouns have the suffix *-ino/a-*. Nouns at this level are almost by definition definite and thus the adjective does not signify indefinite reference. Rather, the adjective is normally used when the modifier is singular and itself unmodified, whereas in all other situations the modifier is in the form of the genitive.³³ Thus the difference between adjective and genitive is formal rather than semantic and has nothing to do with definiteness or animacy.³⁴

2.1. Nested Modifiers in OCS and in Slavic in General

Nested modifiers in Old Church Slavonic are handled similarly but not identically to Tocharian. The normal situation in OCS is for a genitive to modify a genitive; there are expected instances of an adjective, “regular” or denominal, modifying a genitive as well. While it is easy enough to find examples of the construction wherein a noun is modified by an adjective which, in turn, is modified by a genitive in Tocharian B³⁵, there is one example only of this in all OCS: *da sbtvorō volō*

³¹It should be noted that not quite all nouns permitted the derivation of an adjective. Those nouns which were themselves nominalized adjectives or participles did not permit further derivation. Further examples of this and all Old Church Slavonic types are to be found in Huntley (1984).

³²This suffix is not wholly restricted to this second system; it also provides a few adjectives to the first system as well, e.g., *dobū* ‘oak’ > *dobovo/a-* ‘oaken.’

³³“... genitive is replaced by possessive adjective if the possessor is represented by a substantive which denotes a person or an animal and which is not otherwise modified” (Lunt 1968:128).

³⁴Corbett (1987:307), unlike many investigators, makes a clear distinction between “possessive adjectives,” in *-in-* or *-ov-* and formed from animate nouns, and other “denominal adjectives” which “behave rather differently.” His article is devoted to the first group.

³⁵Cf. (above) *sārwanāšše* [‘face’ ADJ.] *maṅḍālne poysintse* [‘Buddha’ GEN.] ‘on the maṅḍala of the Buddha’s face.’

otbčŕ [ADJECTIVE] *si* [DATIVE]³⁶ ‘that I should do the will of my father’ (Suprasliensis 349.27, quoted in Huntley 1993:177). Likewise there are only two examples of the construction whereby adjectives modify adjectives known in Old Church Slavonic. However, unlike the case of Tocharian, in both cases the adjectives agree in number, gender, and case with the noun the higher adjective modifies: *otb uzdy* [GEN. SG. F.] *koňbnyje* [ADJ., GEN. SG. F.] *česarę* [ADJ., GEN. SG. F.] ‘from the bridle of the horse of the Emperor’; *obrazomb* [INST. SG. M.] *krestbnyimb* [ADJ., INST. SG. M.] *xristovomb* [ADJ., INST. SG. M.] ‘with the sign of the cross of Christ’ (Suprasliensis 5.19; Huntley 1993:177). In Tocharian the doubly embedded adjective agrees with the noun underlying the higher derived embedded adjective.³⁷

The Old Church Slavonic rule, then, is that an unmodified genitive may be turned into a denominal adjective; the genitive-to-adjective rule is triggered by lack of definiteness, except with high animacy nouns (personal names and the like) where it is essentially exceptionless; in the rare cases where a modified genitive is turned into a denominal adjective, its dependent genitive is also made into an adjective (by case attraction) agreeing with highest noun. Thus for embedded modifiers we have:

[[[gen] gen] NOUN]
[[[adj_a] adj_a] NOUN_a] (very rare)

The situation in the other Slavic written languages is not always the same. In general we can see a tendency for the denominal adjective to give way before the genitive. This tendency is strongest in Polish but also very strong in Russian (see Corbett 1987 for a very useful summary of the situation in Slavic). Polish, Russian, and most other modern Slavic languages are like OCS in that the denominal adjective option is only possible with unmodified modifiers. Nested modifiers to adjectives do not occur. However, on the southern rim of the West Slavic languages we find a set of languages, Slovak, Old Czech (but not contemporary Czech), and Upper Sorbian (not

³⁶Old Church Slavonic uses both genitive and dative, apparently synonymously (and thus unlike Latin and Hittite [Watkins 1967]).

³⁷E.g., *laksañai* [ADJ., FEM . ACC. SG.] *klautsaišše* [ADJ., MASC. NOM. SG.] *špel* [NOUN, MASC. NOM. SG.] ‘poultice of fish ears’ as discussed above.

Lower Sorbian), that do allow nested modifiers where both modifiers appear as denominal adjectives. In such cases the more deeply embedded modifier agrees with the noun underlying the less deeply embedded modifier, just as in Tocharian.³⁸ Thus we have (examples all from Corbett):

- Old Czech: *ot krvi* [NOUN, GEN. SG. FEM.] *Abelovy* [ADJ., GEN. SG. FEM.] *pravého* [ADJ., GEN. SG. MASC.] ‘from the blood of the just Abel’
 Slovak: *môjho* [ADJ., GEN. SG. MASC.] *otcova* [ADJ., NOM. SG. FEM.] *knižnica* [NOUN, NOM. SG. FEM.] ‘my father’s library’
 Upper Sorbian: *w našeho* [ADJ., GEN. SG. MASC.] *nanowej* [ADJ., LOC. SG. FEM.] *chěži* [NOUN, LOC. SG. FEM.] ‘in our father’s house’

Old Russian shows a few such constructions, the best in Corbett’s opinion being: *toě* [ADJ., GEN. SG. FEM.] *Marfynimŭ* [ADJ., INST. SG. MASC.] *mužemŭ* [NOUN, INST. SG. MASC.] ‘with the husband of that Martha.’ Though found in only a small minority of modern Slavic languages, this construction may well be Proto-Slavic and the situation in OCS, where the denominal adjective could take no further modifiers, may be an innovation.³⁹

2.2. Control of Denominal Adjective on Pronouns and Relative Pronouns in Slavic.

Corbett’s focus in his 1967 article is on whether the modifier, once in the form of a denominal adjective, can control (i.e., be the antecedent of) personal pronouns and relative pronouns, as well their own attributive modifiers (as discussed above). All Slavic languages allow the denominal adjective to function as the antecedent of a personal pronoun,⁴⁰ some

³⁸At times Upper Sorbian shows case attraction of the more deeply embedded modifier to the case of the higher modifier—just as in Old Church Slavonic on those rare occasions where there are nested denominal modifiers in that language.

³⁹Corbett takes the situation in Old Church Slavonic as original and the expanded possibilities of Upper Sorbian, etc., as innovations. However, since in attested Slavic the trend has otherwise been uniformly in the direction of replacing the denominal adjective with the genitive, it would seem more likely that the most expansive use of the denominal adjective is the earlier situation and that already in Old Church Slavonic we see the beginnings of increasing restrictions on them.

⁴⁰Polish is a partial exception. An example of the control of a personal pronoun is Macedonian, *Pred nas e majčniot* [ADJ., NOM. SG. MASC.] *stan* [N., NOM. SG. MASC.]. *Taa* [PRO., NOM. SG. FEM.] *saka da go prodade* ‘Before us is

allow for both personal pronoun and relative pronoun,⁴¹ fewer yet are like Upper Sorbian and allow for a personal pronoun, a relative pronoun, and an attributive modifier. There is a hierarchy: control of the attributive modifier implies the control of a relative pronoun implies the control of a personal pronoun.⁴²

3. Tocharian Denominal Adjectives and (Relative) Pronouns.

When comparing the Slavic situation with Tocharian, we have to remember that in Slavic the denominal (or “possessive”) adjective is used with highly animate nouns whereas in Tocharian highly animate nouns usually are in the genitive. Since the more animate the noun, the more likely it is to serve as an antecedent for either a personal or relative pronouns (Itagaki and Prideaux 1985), it is not too surprising that relevant Tocharian examples are in short supply. An inexhaustive survey has turned up no cases of a denominal adjective serving as the antecedent of a personal pronoun. However, we do have a most interesting example of one serving as the antecedent of a relative pronoun: (41a3) *mākce_u ykeṣṣa kektseñe tā_u kenaṣṣe satāṣlñe* ‘whatever place the body [has], exhalation [has] that bit of earth.’ This line of poetry is grammatically complex, one might even say convoluted, but it is clear that the relative pronominal adjective *mākce_u* is controlled by *ike* ‘place’ which lies behind the denominal adjective *ykeṣṣe*.⁴³

mother’s [lit.: maternal] flat. She wants to sell it” (Corbett 1987:311).

⁴¹An example of controlling a relative pronoun is provided by nineteenth century Russian, *Iskal pokrovitel’stva* [N, GEN. SG. NEUT.] *Kazimirova* [ADJ., GEN. SG. NEUT.], *kotory postupil črezvyčajno neostorožno* “(He) sought Kazimir’s patronage, who acted extremely imprudently” (Corbett 1987:308).

⁴²English does not usually allow control by denominal adjectives of personal, or relative pronouns, e.g., **The Elizabethan age was an astounding era. She [i.e., Elizabeth].....* That kind of sentence does not seem entirely grammatical to me, but is acceptable to others (e.g., an anonymous reviewer). Other restricted contexts of morphological derivation, e.g., *John became a guitarist because he thought it was a beautiful instrument* (Corbet, 1987:306, from Lakoff and Ross, 1972:121) also have a variable reception. Such a sentence is questionable for some native speakers of English, but perfectly acceptable for others (including the author).

⁴³Just as an aside, the cases of control in Slavic do not include those situations where a single modifier has an appositive. In OCS some 5% of all possessive constructions were of this sort. An Old Russian example is *vnukъ Volodimerъ* [ADJ.] *Monomaxa* [GEN.] ‘Vladimir Monomax’s grandson’ (Suzdal’ Chronicle, Laurentian manuscript). (Exactly the same concatenation of names appears as

4. Situation in the Anatolian Languages

The relationship between denominal adjective and genitive in Anatolian runs the gamut of possibilities. Hittite has a virtually non-existent system of denominal adjectives paired, as one would expect, with robust use of the genitive. The western Anatolian language, Luvian, Lycian, and Lydian, however, show a much greater use of denominal adjectives--to the point that Cuneiform Luvian has only denominal adjectives.⁴⁴ Since there are no genitives in Cuneiform Luvian (CLuvian), the use of the denominal adjective says nothing about definiteness or animacy. It is significant in this situation that CLuvian, like Tocharian, can form denominal adjectives from plural nouns, though only in the dative-locative and ablative-instrumental, as well as singular ones. These “plural adjectives” are formed by inserting a *-nz-* before the case ending, thus (dat-loc.) *-aššanzanz(a)* and *-aššanzati* (e.g., DINGIR.MEŠ-*aššanzati waššarahiti* ‘by the favor of the gods’ [Melchert, 2002:188]). It is also interesting to note that nested modifiers can occur in CLuvian; they are all adjectives of course and, unlike Tocharian (but as occurs rarely in OCS and Upper Sorbian), they all agree with the ultimate head noun (Melchert 2003:202), thus [[[adj_a] adj_a] NOUN_a] only (e.g., *ta-ni-ma-si-na* REGIO-*ni-si-na* INFANS-*ni-na* ‘a child of every country’), i.e., case attraction is mandatory.

Lydian is largely like CLuvian in that the genitive has been almost entirely ousted from its original noun-modifying role (the genitive singular has entirely disappeared; the genitive plural has very largely shifted its use to that of a dative). Noun modification, except in a few cases of genitive plurals, is done with denominal adjectives in *-Vli-*. I have no data on nested modifiers in Lydian: I assume they act as they do in CLuvian.

Lycian (and Milyan), on the other hand, have both productive genitives and productive denominal adjectives. Human proper names, with one exception, and topographic proper names take the genitive as noun modifiers, while

adjective + adjective and genitive + genitive in the same manuscript [Richards 1976:262-263].)

⁴⁴The discussion of the situation in the various Anatolian languages owes much to H. Craig Melchert (p.c.). I am very much in his debt, but he is not responsible if I have misconstrued the data.

common nouns and *divine* proper names take denominal adjectives. Whether we take the distinction between proper and common nouns as one of definiteness or animacy (or some combination of both), the behavior of divine names in this regard is surprising. Once again I have no data on embedded modifiers.

Like Lycian, Hieroglyphic Luvian (HLuvian), with both genitive and denominal adjectives, shows yet another pattern: for divine proper names the ratio of genitive to adjective is 66% to 33% (15 tokens), for other personal proper names the ratio is 83% to 17% (18 tokens), while for other human and divine animate common nouns it was 11% to 89% (19 tokens). There was only one example of an animate common noun (“sheep and goats”) and that took a genitive. Inanimate common nouns took the genitive 17% and the adjective 83% (6 tokens).⁴⁵ Anatolian is like Tocharian in that inherited denominal adjectives could be of either the shape **(i)yo-* or **eh₂so-* (or *-syo-*; see above); Hittite and Lydian have added **-lo-*, much as Tocharian has added **-nyo-*.

5. Greek and Latin

Both Greek and Latin act a little like Slavic in that they have a system of “ordinary” denominal adjectives for low-animacy nouns and a second system for high animacy nouns. Actually, since this second system derives adjectives from proper nouns (including geographical names), it is not so much high animacy as it is high definiteness (Delbrück 1893:446-448, Wackernagel 1908:137-146). Within Greek this option is most widely exercised in Aeolic dialects where, for instance, patronymics are in adjectival form and not in the genitive common to other varieties of Greek. Greek examples, all Homeric, include *naûs Agamenonéê*, *Aiolíê nêsos*, *Telemônios Aías*. As an increasingly rare variant the denominal adjective was a possibility even in medieval Greek.⁴⁶ Within Italic it is, I think,

⁴⁵I am indebted to Craig Melchert (p.c.) for these figures. He knows of no instances in any of the Anatolian languages of a denominal adjective controlling a (relative) pronoun. However, the paucity of data makes this absence probably non-significant. It should be noted that in HLuvian we find the same mixed appositive usage seen in Slavic, e.g., *za wanin=za Zahanas* [GEN.] *Zitis* [GEN.] *nimuwiyayan=za* [Adj.] ‘this stele [is] Zahanas’, Zitis’ son [adj]’ (Melchert 1990:202ff).

⁴⁶Wackernagel (1908:138) notes a Byzantine, *Doukikês rîzês kládon* ‘a shoot of the Dukas family.’ As in Slavic and HLuvian there is the possibility of

possible to read the evidence that this kind of denominal adjective was restricted to divine names (e.g., *flāmen diālis*) and that its extension to other proper nouns was a matter of Greek influence on Latin. Whether by inheritance or borrowing, the situation in Classical Latin was very similar to that in Greek. In both languages the denominal adjective might appear occasionally with a common noun such as ‘father’ (e.g. Pindar’s *patría óssa* ‘his father’s voice’ or Latin *patrio corpore* ‘from his father’s body’ or *ex maerore patrio* ‘from the sufferings of his father.’ In both Greek and Latin the option of substituting a denominal adjective for a genitive existed only in the case of unmodified genitives, so the issue of nested modifiers does not arise; there is no evidence that denominal adjectives could control either personal or relative pronouns.⁴⁷

The rule by which genitives of personal names could be replaced by denominal adjectives has been borrowed, as a largely literary device, in western European languages, whether Germanic or Romance, and thus examples such as English, “a Shakespearean sonnet.”

6. Indo-Iranian

Indic and Iranian would appear to act very differently with respect to denominal adjectives. Iranian languages form denominal adjectives freely from nouns at the low end of the animacy scale (i.e., like Germanic and Romance languages), but not from higher up. Indic, on the other hand freely forms denominal adjectives from all nouns; an older stratum shows *-(i)ya-*, a newer stratum shows *vṛddhi*, e.g., from *índra-* ‘Indra’ we have both *índriyá-* and *aindrá-* ‘pertaining to Indra.’ I find no discussion that suggests when one uses the adjective and when one uses the genitive. Neither in Indic nor in Iranian does the adjective control a personal or relative pronoun.

appositives differing in form, e.g. (Homeric) *Gorgeiē kephalē deinoōio pelōrou* ‘the head of the Gorgon, a frightful creature.’

⁴⁷An anonymous reviewer suggests that patronymic adjectives may form a category of their own (and adds Gaulish patronymics in *-iknos* and Lepontic ones in *-alos*) and thus, by implication, they may not be particularly relevant to this discussion. Certainly they are “special cases” in the high frequency of their occurrence instead of genitives. Still there are enough cases where we find denominal adjectives that are not patronymics in Greek and Latin (I can say nothing about Continental Celtic), e.g., *Gorgeiē kephalē deinoōio pelōrou*, *flāmen diālis*, that it seems wisest to include them here

7. Armenian

Attested Armenian would appear to be very much like Germanic and Romance: widespread adjective derivatives of low animacy nouns used in generic situations, but no adjective derivatives for high animacy nouns. However, there is some evidence that the situation may have been different in pre-Armenian. The ending of the genitive plural is *-c'*, which is commonly taken as a reflex of an adjectival PIE **(i)sko-* (Godel 1975:106). If derived adjectives were widespread, it makes sense that they might replace the genitive plural if the latter were threatened disappearance,⁴⁸ since *the power of presidents* is essentially the same as *presidential power*. The reanalysis of **-isko-* as STEM VOWEL + **-sko-* (similar to the reanalysis suggested for PIE **-eh_asyo-* in Tocharian) would have been greatly aided by the productivity of *i*-stems in pre-Armenian. Adjectives derived from *i*-stems would have been ambiguous as to whether they should be segmented **-isko-* (historically correct) or **-i-sko-* (innovative, whence **-o-sko-*, etc.).

8. Conclusions

Tocharian acts like Proto-Slavic, and possibly some western Anatolian languages, e.g., Hieroglyphic Luvian, with regard to control issues.⁴⁹ Like western Anatolian, and possibly Sanskrit, Tocharian has a single integrated system of denominal adjectives from the bottom to top of the animacy scale.⁵⁰ Only Tocharian and, limited to oblique cases, Hieroglyphic Luvian have denominal adjectives derived from duals and plurals as well as singulars.

The basic goal of this paper is to examine the denominal adjectives of Tocharian, both morphologically and, more importantly, syntactically and to compare the Tocharian phenomena with similar constructions in the other Indo-European groups. Having done so, it is hard not to ask oneself if there are any implications for Proto-Indo-European itself. Was Proto-Indo-European like Tocharian, Proto-Anatolian, and

⁴⁸At least the genitive plural of *o*-stems, **-om*, would have suffered the same fate as the accusative singular **-om* and disappeared.

⁴⁹The indeterminacy with regard to western Anatolian is of course due to the paucity of evidence.

⁵⁰Contrast Slavic, Greek, and Latin with *two* systems, one for low animacy nouns and another for very high animacy nouns.

Proto-Slavic with a productive system of deriving, from virtually every noun, denominal adjectives with the ability to substitute for virtually any genitive and retain that genitive's ability to act as the antecedent for pronouns? Or was Proto-Indo-European like most attested Indo-European languages with only a restricted set of denominal adjectives (mostly to inanimate nouns) and no ability for those adjectives to act as antecedents of pronouns?

If we posit these phenomena for Proto-Indo-European, we are certainly reconstructing a situation that no one has heretofore done, and on the basis of a clear minority of the attested Indo-European branches. On the other hand, the dialect distribution of those branches is a strong one: Anatolian and Tocharian, the first branches to break away from the rest of Proto-Indo-European, and Slavic, with residual remnants in Greek and Italic (and possibly Armenian).

If we do not posit these phenomena in Proto-Indo-European, then the Anatolian, Tocharian, and Slavic situations would be the result of independent innovations. Ultimately our decision between these two possibilities may depend on our assessment of the likelihood of this sort of thing being an independent creation. Certainly we have attested cases of its disappearance in both Slavic (e.g., Russian with regard to Old Church Slavonic) and probably Anatolian⁵¹ and no certainly attested examples of its creation. But, we are dealing with very limited data that will not support any statistical argument for or against. For what it is worth, I am inclined to believe, on the basis of the totality of not altogether compelling evidence, that Proto-Indo-European did look a lot like Tocharian or Upper Sorbian.

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⁵¹Hittite for instance is almost certainly innovative in the very low productivity of denominal adjective creation, whether measured either against all we know about Proto-Indo-European or its sister Anatolian languages. Whether Proto-Anatolian was like "average Proto-Indo-European" in this regard or more like the attested western Anatolian languages cannot be known with any certainty.

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