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Linguistic Change and Reconstruction Methodology

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1. Introduction

A frequent source of syntactic change is a two-stage process of semantic fading followed by (or perhaps simultaneous with) reanalysis of function through abduction. By “fading” I mean that the original semantic force of a morpheme is lost, e. g., a distal demonstrative comes to have only a sense of definiteness, a verb of volition comes to have only a sense of futurity. In the limiting case, the original sense is lost entirely, e. g., a language loses a category of grammatical gender without losing the morphemes which were the formal markers for that category. By “abduction”¹ I mean a process of reanalysis which Robert Stockwell has called “jumping to conclusions”, or, in traditional terms of logic, applying the “fallacy of affirming the consequent”. Consider the following example:

- (1) Stage I (Abduction) > Stage II
If a noun has a suffix “n”, If a noun has a suffix “n”,
the noun is masculine. the noun is masculine.
Noun X has a suffix “n”. Noun X is masculine.

Therefore, X is masculine. Therefore, X must have a
suffix “n”.

Suppose that our hypothetical suffix “n” is some sort of definite determiner which is in agreement with masculine gender. Through semantic fading of the definiteness marking, speakers are left ‘uncertain’² of its function. The stage is set for abduction, which provides this suffix with a function, viz., it marks nouns as grammatically masculine. When speakers have made the abductive leap to Stage II, then deductive processes may take over, viz., “If a noun

is masculine, it must have a suffix “n”; X is masculine; therefore, X must have a suffix “n”.

In fact, this example is not so hypothetical inasmuch as we can see a real example in comparative evidence from the North Bauchi group of West Chadic-B.³ Most, if not all, the languages of this group have grammatical gender, but of the nine members of this group known to be still spoken (Skinner 1977), only Warji systematically marks gender on its nouns in citation form:

(2)	Warji	Miya	Kariya	Pa'a	
Masculine	<i>k̄aasu-na</i>	<i>kusiy</i>	<i>k̄aasu</i>	<i>k̄əsiki</i>	‘bone’
Masculine	<i>zama-na</i>	<i>dzam</i>	<i>dzam</i>	<i>jama</i>	‘beans’
Feminine	<i>yir-ay</i>	<i>wir</i>	<i>wir</i>	<i>rei</i>	‘neck’
Feminine	<i>wun-ay</i>	<i>wun</i>	<i>wun</i>	<i>vura</i>	‘girl’

The Warji suffixes derive historically from the Afroasiatic determiners masculine *n, feminine *t (Greenberg 1960). (The Warji feminine -ay derives historically from *at by a general sound change affecting noninitial *t and *d in this group.) The original agreement pattern still exists in this group, e. g., Miya *na-kən/na-ka kusiy* ‘this/that (masculine) bone’, *ta-kən/ta-ka wir* ‘this/that (feminine) neck’, but note that the demonstratives are preposed and have an additional element -kən for the proximal sense and -ka for the distal sense. Some languages in this group still suffix their demonstratives, e. g., Pa'a (Skinner 1979: 62), and Miya has post-nominal demonstratives in a few fixed phrases, e. g., *muku ta-ka* ‘that day’.

Based on comparative evidence within North Bauchi and elsewhere in West Chadic, we can reconstruct the following scenario: Proto-North Bauchi had suffixed definite determiners which showed gender agreement with the head noun; as the semantic function of these suffixed determiners faded, “heavier”, perhaps originally more emphatic, forms began to take over the demonstrative function from the simple suffixes,⁴ though they probably cooccurred with the new demonstratives for a time; eventually the simple suffixes fell into disuse in most of the languages, but in Warji, their function was reinterpreted as being one of overt grammatical gender marking. This reanalysis provided the suffixes with a new function and motivated their extension to citation forms of nouns (see Schuh 1983 a: 175–176 for further discussion).

The aims of this paper are two: first, in the spirit of the general purpose of the workshop for which this paper was conceived, I hope to show that the mechanism of syntactic change outlined above is a universal one. Even though we lack “vertical” historical records for most of the world’s language groups, nonetheless we can feel confident in suggesting historical scenarios such as that above based on comparative evidence alone.

Second, I hope to show how we can understand phenomena within Afroasiatic without making unreasonable claims about reconstructions. Thus, we can identify morphemes as cognate without having to claim that the actual constructions in which they occur are cognate. In many Afroasiatic languages, we find “t” and “n” affixes on nouns, e. g., in Berber, most feminine nouns have a *t*-prefix and often a -*t* suffix; in Classical Arabic, all nouns are cited with nunation and most feminine nouns contain *taa' marbuuta*; in Bade (a West-Chadic-B language), all nouns are cited with a final -*n* (Lukas 1968, Schuh 1975). We are safe in assuming that all these “n’s” and “t’s” are cognate, probably all being reconstructible to Afroasiatic gender-sensitive determiners. However, we do not have to reconstruct “nunation” to the level of Proto-Afroasiatic in order to explain its appearance in both Arabic and Bade.⁵ The morphemes in question and the general mechanism of change have been present throughout the history of Afroasiatic; it is not surprising that similar changes could operate again and again, quite independently in time and space, to produce similar results.

In the remainder of this paper, I will consider two further cases of the “fading-abduction” mechanism of change in Chadic, pointing to likely parallel developments elsewhere within and outside Afroasiatic.

2. Genitive-linking morphemes

The following historical development in marking N + N genitive constructions has taken place repeatedly and independently within Chadic:

(3)	Stage I	>	Stage II	>	Stage III
	Juxtaposition		Direct vs. linked		Linked only

That is, we reconstruct the earliest stage as having no formal marking other than head noun directly preceding the genitive noun or pronoun. In fact, there are few, if any, Chadic languages which retain this state of affairs. We can illustrate this with Bolanci, a West Chadic-A language whose genitive constructions are of the Stage I type, though comparative evidence from within Bole-Tangale, the subgroup to which Bolanci belongs, suggests that it probably has not inherited this genitive type directly from Proto-Chadic:⁶

- (4) Bolanci (Schuh, ms[a])
- | | | | | |
|---------------------|--------------------|----------------------|-----------------|-------------|
| <i>osoki</i> 'bone' | <i>osoki kom</i> | 'cow's bone' | <i>osoki-ni</i> | 'his bone' |
| <i>ooshi</i> 'goat' | <i>ooshi Bomoi</i> | 'Bomoi's goat' | <i>ooshi-ko</i> | 'your goat' |
| <i>amma</i> 'water' | <i>amma yamba</i> | 'rain (God's water)' | <i>amma-no</i> | 'my water' |

At Stage II, some genitive constructions retain the "direct", juxtaposed form, but others require a "linker", which might be translated 'of'. This is probably the most frequently found state of affairs in modern Chadic languages. The linked construction usually represents "alienable possession", i. e., the head noun is an acquired possession of the genitive noun or pronoun. The direct construction represents other relations which might be characterized as "genitive", e. g., "inalienable possession" (body parts, kin terms, sometimes words such as 'home' or 'hometown') and phrases where the genitive is a modifier of the head. The latter are often translatable as compounds in English, e. g., 'bag of cloth' = 'cloth bag', 'beer [made] of sorghum' = 'sorghum beer', etc.. In many languages, the distinction between alienable and inalienable possession is productive, so that the "direct" construction signals inalienability, whereas the "linked" construction with the same head noun signals alienability. On the other hand, the use of direct or indirect genitive may be (partially) lexicalized, so that one must know for particular nouns used as heads whether the direct or the linked construction is required.

Miya illustrates all these features. In (5 a) are linked constructions, where the head noun could only be an acquired possession; in (5 b) are direct constructions with the sense of compounds; in (5 c) are examples where choice of direct or linked construction depends on the sense; and in (5 d) are examples of kin terms, where choice of direct or linked construction is lexically determined in Miya.

- (5) Miya (Schuh, ms[b])
- | | | | | | |
|----|-------------------------|-----------------------|----------------------|-----------------------|---------------|
| a) | <i>mbərgu na Vaziya</i> | 'Vaziya's ram' | <i>mbərgu nu-wun</i> | 'my ram' | |
| | | | (masculine head) | | |
| | <i>təmaku ta Vaziya</i> | 'Vaziya's ewe' | <i>təmaku taa-za</i> | 'her ewe' | |
| | | | (feminine head) | | |
| b) | <i>bakwala peler</i> | 'bag (of) skin' | | | |
| | <i>kwakwasə zuway</i> | 'shell (of) a peanut' | | | |
| | <i>nduwula rəfə</i> | 'pot (for) sauce' | | | |
| c) | <i>kusiy Vaziya</i> | 'Vaziya's bone' | <i>kusiy-wan</i> | 'my bone' | |
| | | | (masculine head) | | |
| | <i>kumay Vaziya</i> | 'Vaziya's ear' | <i>kumay-aza</i> | 'her ear' | |
| | | | (feminine head) | | |
| | cf. <i>kusiy nu-wun</i> | 'my bone' | | (acquired possession) | |
| | <i>kumay ta Vaziya</i> | 'Vaziya's ear' | | (cut from an animal) | |
| d) | <i>yasə-wan</i> | 'my brother' | but | <i>lay nu-wun</i> | 'my son' |
| | <i>vaki-wun</i> | 'my sister' | but | <i>wun tu-wun</i> | 'my daughter' |

Of interest for this discussion is the source of the genitive linkers. In nearly every language, the linkers come historically from the determiner system. In the Miya example above, the linkers come from the by now familiar **n* (m) and **t* (f), but other determiners can also become linkers. There is a determiner **k* reconstructible for Chadic and found in Cushitic as well. Where it is found in West and Central Chadic, it is usually gender-neutral, but in East Chadic, it is generally associated with masculine gender. We can illustrate **k* as a linker in the Gashua dialect of Bade, a West Chadic-B language. Bade is nearly a Stage-III language, preserving the direct construction only for a few nouns with pronominal genitives, as in (6 a). Linked genitives with a masculine head and pronominal possessor use a linker *n*, whereas those with a feminine head use *tk*, which looks like a combination of feminine **t* and the determiner **k* (6 b). All constructions with a noun as genitive use *k* (6 c).

- (6) Bade (Gashua dialect) (Schuh, 1977)
- | | | | | |
|-----------------------|-----------------|-------------|-------------------------------|-----------------------------|
| a) Direct: | <i>ngwa</i> | 'household' | <i>ngwaa-ja</i> | 'our (exclusive) household' |
| | <i>ba</i> | 'co-wife' | <i>baa-gəm⁷</i> | 'your (feminine) co-wife' |
| b) Linked: | <i>kunu</i> (m) | 'belly' | <i>kunaa-n-ja</i> | 'our (exclusive) belly' |
| (pronominal genitive) | <i>miya</i> (m) | 'mouth' | <i>miyaa-n-əm⁷</i> | 'your (feminine) mouth' |
| | <i>mai</i> (f) | 'mother' | <i>mii-tk-ja</i> | 'our (exclusive) mother' |
| | <i>da</i> (f) | 'eye' | <i>da-tk-əm⁷</i> | 'your (feminine) eye' |

c) Linked:	<i>ngwa-k mazam</i>	'household of a blacksmith'
(noun genitive)	<i>kunu-k tla</i>	'belly of a cow'
	<i>da-k aku</i>	'eye of a goat'

A straightforward example of a Stage-III language is Hausa, a West Chadic-A language. In Hausa, all genitive constructions with a masculine head noun have a linker *n*, and all those with a feminine head noun have a linker *t*, which has become *r* before a consonant by a regular sound change.

(7) Hausa				
<i>dookii</i>	(masculine)	'horse'	<i>dookii-n-aa</i>	'my horse'
			<i>dooki-n Ali</i>	'Ali's horse'
<i>hannuu</i>	(masculine)	'hand'	<i>hannu-n-sa</i>	'his hand'
			<i>hannu-n Ali</i>	'Ali's hand'
<i>mijji</i>	(masculine)	'husband'	<i>miji-n-ki</i>	'your husband'
			<i>miji-n A'i</i>	'A'i's husband'
<i>riigaa</i>	(feminine)	'gown'	<i>riigaa-t-aa</i>	'my gown'
			<i>riiga-r Ali</i>	'Ali's gown'
<i>kafaa</i>	(feminine)	'foot'	<i>kafa-r-sa</i>	'his foot'
			<i>kafa-r Ali</i>	'Ali's foot'
<i>maataa</i>	(feminine)	'wife'	<i>maata-r-ka</i>	'your wife'
			<i>maata-r Ali</i>	'Ali's wife'

An interesting case is Kera, an East Chadic-A language (Ebert 1979). Although Kera is a basically a Stage-III language, meaning that it has only linked genitives, it has a productive distinction between alienable possessive constructions and other types of genitives (including inalienables), which are expressed, respectively, by linked and direct constructions in most languages that have the distinction at all. For the alienable type, pronominal genitives in Kera have a linker *n* and nominals have a linker *kə* (8 a); the other types of genitives, illustrated in (8 b), use several different linkers, some of which seem to be at least in part lexically specific to the head noun, but most of which are transparently related historically to determiners. (See Ebert 1979: 155–156 and Schuh 1983 a: 189–190 for discussion of the latter type of linker). Kera does preserve a few direct constructions, illustrated in (8 c), mostly in compounds of the type noted for Miya in (6 b) above, though they seem to be productive for a few nouns in an inalienable genitive sense.

(8) Kera				
a)	<i>kul ni-n</i>	'my hut'	<i>kul kə kumnaŋ</i>	'chief's hut' (masculine head)
	<i>harga naat-a</i>	'her goat'	<i>harga kə həlgəŋ</i>	'woman's goat' (feminine head)
b)	<i>kor-d-ən</i>	'my blood'	<i>kor-də hulum</i>	'person's blood' (masculine head)
	<i>cuu-r-u</i>	'his head'	<i>cəə-rə hulum</i>	'person's head' (feminine head)
	<i>kəpaŋ-gə boore</i>			'firewood' (lit.: 'wood of heating')
	<i>kusuk-də-m</i>			'your flesh' (masculine head)
	cf. <i>kusuk nə-mti</i>			'your meat (for eating)', with "alienable" linker
c)	<i>ku-u</i>	'his mouth'		
	<i>moomə tər</i>	'girl's grandfather'		
	<i>ku kuli</i>	'doorway' (lit.: 'mouth (of) hut')		
	<i>akaarə pepen</i>	'rainbow' (lit.: 'in-law (of) God')		

It seems that Kera has undergone two rounds of developing genitive linkers, whereby the linkers resulting from the first round became lexically frozen and rather unproductive, leading to a new round with the productive linkers seen in (8 a).

The examples presented here, and many others that could be cited (see Schuh 1983 a, section 3, for several more), make it clear that the development of linkers from determiners has happened within Chadic many times independently. Were we able to reconstruct genitive-linking morphemes for Proto-Chadic, we would expect to find the same morphemes as linkers throughout the family. Yet, as we have seen, different languages use historically different morphemes. For example, within West Chadic-B, Miya has *n* masculine and *t* feminine with no trace of *k*; Bade has *k* for all genitives with nominal as "possessor".

In Schuh (1983 a: 184) I proposed two possible models for how definite determiners could become linkers. In (9), "that" stands for the determiner in question, O stands for marking of a genitive construction by juxtaposition, "*that" stands for the innovated linking morpheme:

(9)	a)	N_1 -that O N_2	>	N_1 *that N_2	' N_1 of N_2 '
	b)	N_1 , that O N_2	>	N_1 *that N_2	' N_1 of N_2 '

In model (9 a), the original construction would be something like English 'that horse of John's', but with N_1 of the genitive construction

having its determiner suffixed, as is the common pattern in Chadic. Since N_1 of a genitive construction is inherently determined, the definitizing function of the determiner fades, allowing reinterpretation simply as a linking element. In model (9 b), N_1 is in apposition to a genitive phrase with a demonstrative pronoun as head, something like English ‘the horse, that of John’. Again, the appositional nature of the construction fades, and along with it, the demonstrative force of “that”, with subsequent reinterpretation as a linking element only. These models are probably not the only possibilities, but whatever the model, reanalysis through fading and abduction is almost certainly the path by which determiners may become linkers.

Two questions remain: 1) why should linkers first develop only as markers of alienable possession, as in Stage II, and 2) why should these linkers subsequently spread to all genitive constructions, as in Stage III? The answer to the first question is semantic, viz., overt definite reference to head nouns of genitive constructions really only makes sense for alienable possessions. Phrases such as ‘this arm of John’s’, ‘that mother of John’s’, where demonstratives refer to inalienable possessions, must be understood to have some sort of rhetorical force beyond normal deixis. As for compound type phrases, e. g., ‘this firewood’ (literally, ‘this wood [of] fire’ in Chadic languages), the determiner can be understood only as modifying the whole entity, not the head separately. Thus, the constructions schematized in (9 a, b) would occur with any frequency only for acquired possessions, e. g., ‘this horse of John’s’.

The explanation for why linkers should expand to all genitive constructions as in Stage III is one of textual frequency combined with a universal linguistic preference for analytic over synthetic constructions. Although the Stage-II linked constructions cover a semantically more limited range than direct constructions (alienable possession vs. everything else), they are textually more frequent. As the semantic distinction governing the difference between genitive constructions fades, a single construction type will tend to take over. The linked type is favored by textual frequency, but possibly more important, by a universal preference for analytic constructions over synthetic ones. Outside Chadic, we can see this preference in genitive constructions in many languages, e. g., French or Spanish, where all genitives are now analytically marked by the preposition *de* even though Latin had synthetic case-marking, and Modern Hebrew, where the productive genitive uses *shel* + genitive (*bet shel-i* ‘my house’), originally a phrase

meaning ‘that [which is] to ...’, even though Biblical Hebrew used direct juxtaposition, a construction type that persists only in some fixed or archaic phrases in Modern Hebrew.

Inasmuch as Chadic languages have independently innovated linkers from demonstratives through a general mechanism of change, we would expect convergent developments elsewhere in Afroasiatic, and indeed, these exist. For Egyptian, Gardiner (1979: 65–66) says, “The genitive is of two kinds, *direct* and *indirect*. The direct genitive follows the noun that governs it, immediately and without connecting link [see (10 a)] This form of genitive is usual wherever the connexion between governing and governed noun is particularly close, as in titles, set phrases, etc.”, i. e., the type of construction I have called “compounds” for Chadic. Gardiner goes on to say (p. 66), “In the indirect genitive the noun is preceded by the genitival adjective *ny* ‘belonging to’ ...”, clearly the familiar demonstrative element **n*. Egyptian linkers agree in gender with the head noun (10 b), hence *n-t* in the second example of (10 b), with a feminine head noun:

- (10) Egyptian
- | | | |
|------------|--------------------|---|
| a) Direct: | <i>imy-r pr</i> | ‘steward’ (lit.: ‘overseer [of] house’) |
| | <i>hm ntr</i> | ‘priest’ (lit.: ‘servant [of] God’) |
| b) Linked: | <i>nsw n Kmt</i> | ‘the king of Egypt’ |
| | <i>niwt nt nhh</i> | ‘the city of eternity’ |

Berber likewise has linked and direct genitives. The direct type is restricted to a very small number of kin terms. Examples in (11) are from my own field notes on Tamazhaq (dialect of Tanout, Niger):

- (11) Tamazhaq
- | | | |
|------------|---------------------|---------------------------|
| a) Direct: | <i>ci-k</i> | ‘your (masculine) father’ |
| b) Linked: | <i>al ^ m-n ^ k</i> | ‘your (masculine) camel’ |
| | <i>^ fus-n ^ k</i> | ‘your (masculine) hand’ |

3. Relative markers

Definite determiners can become markers of relative clauses. I have not found any Chadic languages where determiners have unequivocally become relative pronouns (as they have, for example, in German), though Kanakuru comes close. What has happened in a number of languages is that erstwhile definite determiners have

become an obligatory part of the relative construction. I propose the following scheme (COMP = “complementizer”, i. e., a subordinating conjunction introducing a relative clause; *DET = a determiner associated specifically with relative clause marking; *RELPRO = a relative pronoun developed from a determiner; RC = relative clause):

- (12)
- | | |
|------------------------------|-----------------------------|
| Stage I | Stage II |
| Noun (DET) [(COMP) ...] RC > | Noun *DET [(COMP) ...] RC > |
| Stage III | |
| Noun [*RELPRO ...] RC | |

According to this model, in Stage I, a noun may be modified by a determiner in addition to a relative clause. In Stage II, the primary function of the determiner has faded (at least when used in conjunction with a relative clause). In Stage III, abduction has operated to provide the faded determiner with a new function, that of showing that the noun with which it is associated is the antecedent to a relative clause.

Ngizim (West Chadic-B) represents Stage I. Ngizim has a relative COMP, *waara*, which is invariable regardless of features of the antecedent or the position relativized on. No determiner is required on the antecedent to a relative clause, and indeed, determiners rarely appear at all in noun phrases containing relative clauses. When they do, they are at the end of the entire noun phrase, not directly after the antecedent (see last example in (13)). In Schuh (1972: 128) I claim that the relative COMP may optionally be omitted. However, on close examination of texts and elicited examples, this seems questionable, at least as a productive and frequently applied rule. Omission is rare in natural texts, and there it is mainly in certain expressions, especially in temporal clauses with the noun ‘time’ as head (“the time that they left ...”, etc.).

- (13) Ngizim
- | |
|--------------------------------|
| <i>nən waara wanee yu</i> |
| man COMP sent me |
| ‘the man that sent me’ |
|
 |
| <i>səma waara na sa bai</i> |
| beer COMP I drink NEG |
| ‘the beer that I didn’t drink’ |

<i>bee waara aa d’aaci tku</i>
thing COMP AUX head-your this
‘this thing that is on your head’

Hausa is moving in the direction of Stage II. Like Ngizim, Hausa has an invariable relative COMP, *da*, which is obligatorily present. Unlike Ngizim, the antecedent to a relative clause in Hausa nearly always has a determiner. By far the most common forms for such determiners are the clitic *-n* (masculine or plural), *-r* (feminine), which in other contexts roughly means “the one previously mentioned or implied”. Unlike Ngizim, the determiner is cliticized to the antecedent, not to the full noun phrase. In the examples in (14a), this determiner could have the “previous reference” meaning, but in (14b), this reading is not possible: in the first example, the existence of any such hole is being questioned, and in the second, reference is to an unspecified day in the future. However, Hausa does not seem fully to have reached Stage II since presence of a determiner with the antecedent to a relative clause is not an absolute requirement for grammaticality, as the example in (14c) shows:

- (14) Hausa
- a) *maalami-n da ya kooyaa mini Hausa*
 teacher-DET COMP he taught to-me Hausa
 ‘the teacher who taught me Hausa’
riiga-r da kakee soo ka sayaa
 gown-DET COMP you-CONT want you buy
 ‘the gown that you want to buy’
- b) *inaa ka ga raami-n da zan iya shigaa?*
 where you see hole-DET COMP FUT-I able enter
 ‘where have you ever seen a hole that I could enter?’
Allah ya kaawoo raana-r da zaa
 he bring day-DET COMP FUT
mu gamu da shii
 we meet with him
 ‘may Allah bring a day when he and I will meet’
- c) *bayaanin lookacii da ya shuudee*
 explanation time COMP it pass
 ‘explaining a time that has passed’

Bade, a West Chadic-B language closely related to Ngizim, has traits of Stages I, II, and III. It has a COMP, *bee*, which introduces relative clauses. With *bee* present, the antecedent may be modified by a definite determiner or not, as in (15 a). Like Hausa, however, the antecedent is sometimes accompanied by a definite determiner which in other contexts would probably not be used. The determiners most commonly used here are the proximal demonstratives or a set of demonstratives meaning ‘the very ...’. Thus, in (15 b), the antecedents have suffixed possessive pronouns; a phrase N + possessive pronoun would rarely appear with an additional determiner.⁸ Bade allows omission of *bee*, but when it is omitted, the antecedent invariably has a demonstrative modifier, as in (15 c). I hesitate to call this demonstrative a “relative pronoun”, mainly because the demonstrative can cooccur with the relative COMP. However, the fact that the demonstrative is commonly associated with relative clauses seems to be what allows *bee* to be omitted, meaning that the situation is ripe for dissociating the demonstrative from its leftward attachment to the antecedent and reassociating it rightward to become the true head of the relative clause.

- (15) Bade (personal field notes)
- a) *damən bee gə tləbaru*
 wood COMP you split
 ‘wood that you have split’
mdən bee a kard-aara
 person COMP FUT knock down-her
 ‘the person who will throw her down’
mdə msoo bee jaawo
 man this COMP come
 ‘the/this man who had come’
- b) *fee-wun mdəno bee wu ngwaawo*
 things-your these COMP you remove
no
 TOPICALIZER
 ‘your things that you have removed’
mang-aara msənoo bee atu jaad ii-ci
 friend-her this COMP she take to-him
waina-w
 cake-the
 ‘her boyfriend to whom she had taken cakes’

- c) *vənakoo mcoo mdau kauyaaw ee-c-u*
 fish this one fry for-him-the
 ‘the fish that one had fried for him’
mdə msoo jaaw da pakp ii-kci sariyaw
 man this came he distribute to-them judgement
 ‘the man who came passed out judgement to them’

Kanakuru comes close to being a Stage-III language in the sense that morphemes which were formerly free demonstratives have become specialized as “relative demonstratives”. Newman (1974: 95) says the following:

A noun and a following relative clause must be connected by a demonstrative. If the head noun has been generated with any of the optional demonstratives, no special rel marker is needed. If a rel clause modifies a noun generated without a demonstrative, a special rel demonstrative [is required]. This rel demonstrative is gender sensitive. It is *ji* (< **jə*) if the head noun is feminine, *mə* (usually *m* after a simple vowel) if the head noun is [-f] or plural. Unlike the freely chosen demonstratives, which are inherently either [+def] or [-def], the rel demonstratives occur both with definite nouns and with indefinite nouns.

In (16), INDEF = what Newman calls an “indefinite demonstrative”, THIS = proximal demonstrative, REL = what Newman calls the “rel demonstrative”, and ICP = Intransitive Copy Pronoun, a pronominal suffix on intransitive verbs reflecting features of the subject:

- (16) Kanakuru (Newman 1974: 94–95)
- a) *kile nini naa tada*
 pot INDEF I broke
 ‘a certain pot (masculine) that I broke’
gunyoi je do-ta məna
 girl THIS come-ICP house
 ‘this girl (feminine) who came home’
- b) *kile m naa tada*
 pot REL I broke
 ‘a pot (masculine) that I broke’

gunyoi ji do-ta məna
 girl REL come-ICP house
 ‘the girl (feminine) who came home’

Gude (Central Chadic-A) is structurally almost identical to Kanakuru in the way it marks its relative clauses. Compare the following quote about Gude from Hoskison (1983: 57–59) with the quote above from Newman (1974):

Usually, a demonstrative suffix is used to link the head noun to the relative clause. If the head noun does not already contain a demonstrative suffix (*-na*, *-tsə*, *-tə*) or the definite suffix (*-kii*), then a semantically empty *-tə* suffix or *ətə* pronoun is used.

Gude is only distantly related to Kanakuru within Chadic, the two languages are not geographically contiguous, and the relative demonstratives are not cognate, all of which suggests that the two languages have independently innovated in the same direction.

As a final example, consider the following quotation and illustration for Kera (East Chadic-A) from (Ebert 1979: 257):

Ein R[elativ]S[atz] kann im Kera nur *reidentifizierende* Funktion haben; es kommen also keine RS zu indefiniten Nomina (wie z. B.: er sucht *eine* Frau, die ...) vor. Da Definitheit am Ende der NP markiert wird und dem RS kein anderes Attribut folgen kann, steht nach dem RS das Definitheitsmorphem. [Emphasis in original.]

- (17) Kera
gedel bə minti pepe-ŋ a ɲurbun-u-ŋ
 mud *DET COMP rain-DET AUX soften-it-DET
 ‘the mud that the rain had softened’

Ebert does not explain how Kera does express phrases translatable as relative constructions with indefinite antecedents. It seems, however, that Kera differs from the languages above by having retained the definite sense of the determiners even after having grammaticalized them as specific to relative constructions.

Languages with relative COMPs or relative pronouns derived historically from demonstratives are widespread in Afroasiatic. Be-

low, I cite examples from Tamazhaq, Egyptian, and Classical Arabic. In each case the underlined relative marker is obviously related to demonstratives in the same language, and in some cases, to determiners reconstructible for Proto-Afroasiatic.

- (18) Tamazhaq (personal field notes)
awed[^]n wa yigm[^]d[^]n ‘the man who entered’
tamtut ta təgm[^]d[^]t ‘the woman who entered’
ɣ[^]lek w[^]n əgm[^]dnin ‘the people who entered’
ab[^]gug wa təgz[^]ma ‘the ram that you slaughtered’
- (19) Egyptian (Gardiner 1979: 147–154)
s nty hr st ‘a man who has a lump’
p3 t hnkt ... nty rdi.n.i n.tn sw ‘the bread and beer ...
 which I have given to you’
- (20) Classical Arabic (Cowan 1968: 72)
ar-rajulu llaḏii ɖaraba Muhammadan
 ‘the man who struck Mohammed’
al-bintu llatii ḏahabtu maʿahaa ʔilaa l-suuqi
 ‘the girl with whom I went to the market’

4. Other cases

The preceding sections present two cases of convergent syntactic change involving determiners. Determiners and pronouns provide a rich area for such change. In this section I will mention just a few further examples, without going into detail.

Determiners may become third person pronouns. In Afroasiatic, this has been particularly common for the third person masculine singular. For this person, across Afroasiatic one finds at least three common forms: “s”, “n”, and “y”. It seems unlikely to me that we want to reconstruct three unrelated pronoun shapes for this person. Rather, I would suggest that at least the “n” has its origin in the masculine demonstrative. Within Chadic, “n” is not particularly common in personal pronoun function; within West Chadic, “n” stands out as different from other pronouns, e. g., in Bolanci the

“n” pronoun appears only as a pronominal enclitic and is the only personal pronoun with low, rather than high, tone (Lukas 1970 – 72: section 158).

Given the close relation between pronouns and determiners, we would expect to find convergent syntactic developments where the reinterpreted morphemes are reconstructed as determiners in some cases and pronouns in others. One such case is in the development of copulas. The most likely reconstruction for Proto-Afroasiatic equational sentences is simple juxtaposition of subject and predicate – this is still common across the Afroasiatic family and is a frequent construction throughout the world. Juxtaposition is certainly the most common Chadic form for equational sentences, but a number of languages have developed copulas from demonstratives or pronouns, e. g., Hausa and Kilba (Schuh 1983 b). A particularly interesting case of convergent development is Egyptian and Gude. Both these languages have equational sentences of the following form (Egyptian data from Gardiner 1979: 104, Gude data from Hoskison 1983: 68):

(21)		Pred.	COP	Subject
	Egyptian:	<i>dmī</i>	<i>pw</i>	<i>ʾImnt</i>
		abode	COP	West
		‘the West is an abode’		
	Gude:	<i>nwanwu</i>	<i>nə</i>	<i>Kwalii</i>
		chief	COP	Kwali
		‘Kwali is chief’		

Of course we have no historical records for Gude, but we do for Egyptian. According to Gardiner (1979: 100), the earliest Egyptian constructions consisted of simple juxtaposition of subject-predicate. Structures such as that in (21) evolved from constructions where, using Gardiner’s terminology, the “logical predicate” came first, especially in constructions questioning or focussing the predicate. Gardiner (1979: 103) describes it this way: “The demonstrative pronoun ... *pw* ... came to be employed as the logical subject after logical predicates consisting of a noun, not however with its own proper meaning of ‘this’ or ‘that’, but as an equivalent for ‘he’, ‘she’, ‘it’ or ‘they’ invariable in number and gender...”, e. g. *hmt w^ob pw n R^o* ‘the wife of a priest *she is* of Re’. He goes on to say (p. 104) that in the later periods “the *logical predicate ... comes*

first and is followed by *pw* as a purely formal logical subject; the real logical subject is added in apposition to *pw*” (my emphasis – RGS). In other words, the direct juxtaposition of subject followed by predicate was replaced by a construction of the form predicate-copula-subject, a construction which itself was originally something like an English cleft sentence. Importantly, the copula was originally a masculine singular demonstrative.⁹ Given the exact structural parallelism of Gude to Egyptian, a similar scenario for the development of Gude equational sentences looks quite reasonable.

Another case of interest is the development of “causative” morphemes. An “s” causative is widespread in Afroasiatic outside Chadic. Hausa has a causative suffix *-as*, e. g., *fīta* ‘go out’, *fītas* ‘take out’, but no other Chadic language that I know of has a causative marked by “s”. Frajzyngier (1984: 148–149) points out that across Chadic, many languages have causative morphemes resembling third person singular pronouns, including both the Hausa *s* just mentioned as well as “n” in a number of languages, and he suggests that these causatives derive from pronouns. This suggestion seems quite reasonable. If the third singular masculine is the most commonly occurring direct object, its meaning as a referential pronoun could fade, leaving only the sense that the verb to which it is attached is transitive. The way is now open to use these newly marked transitive verbs with an object. Using the English verb ‘cook’ and the pronoun ‘it’ to illustrate the stages, we can imagine the following development:

Stage I	Stage II	Stage III
(verb has no morpho-logical mark for transitivity)	(fading of pronominal sense)	(*it becomes causativizer)
I cooked it/meat. It/meat cooked.	I cooked-it (meat). It/meat cooked.	I cooked-*it meat. It/meat cooked.

Unlike the other cases illustrated in this paper, I cannot document such a development with direct historical evidence or with comparative evidence showing varying developmental stages. Yet, it seems significant that the causative morphemes common in Afroasiatic are segmentally like the most common third masculine singular morphemes.

5. Conclusion

In this paper I have shown how a general mechanism of syntactic change, semantic fading accompanied by reinterpretation of function through abduction, can lead to convergent changes in languages separated from each other in time and space. Where the languages are genetically related, it is not surprising to find that not only have the same syntactic changes taken place, but also that cognate morphemes have taken similar functions. Thus, in the two cases that I illustrated in detail, the development of genitive-linking morphemes and the development of relative clause markers, we can be confident that the *n*'s and *l*'s with those functions are indeed cognate. We cannot, however, claim that these attestations are evidence for the languages in question having inherited this way of marking the constructions directly from Proto-Afroasiatic. Indeed, it is clear that convergent developments have taken place repeatedly within Chadic, meaning that we cannot reconstruct the specific forms of the constructions even for Proto-Chadic, much less for Proto-Afroasiatic.

Notes

1. As far as I know, it is Henning Andersen who first used "abduction" as the term for this process in linguistics. See especially Andersen (1973).
2. Terms like "uncertain", "abductive" leap, etc. provide a convenient descriptive scenario for a process which, in most cases, probably unfolds over several generations. I do not mean to suggest that speakers, confused about what forms in their language mean, consciously try to work out explanations.
3. The Chadic family has three major branches: West Chadic, comprising languages found mainly in northeastern Nigeria; Central Chadic (called "Biu-Mandara" by Newman [1977]), comprising languages in northeastern Nigeria and northern Cameroon; and East Chadic, comprising languages spoken in western and central Chad. Newman (1977) has a fourth branch, Masa, comprising languages spoken along the Chad-Cameroon border. Jungrathmayr–Shimizu (1981) link this group with Central Chadic. Newman (1977) has a binary split within each major group, which he calls simply "A" and "B" for each group. I adopt that terminology here.
4. A parallel from colloquial English would be expressions like 'this here book', 'that there house'.
5. Arabic and Bade have gone a stage beyond Warji in having lost the gender association of their suffixes and having further reanalyzed them as simple "nominal markers". With this reanalysis, there was no longer any reason to have two suffixes, so the suffix "n" has been extended to all nouns. This hypothesized

development is confirmed for Bade by a word list from the now extinct Teshin-anchi dialect, collected in the early part of this century by colonial officers, where most feminine nouns do not have the *-n* suffix, though all masculine nouns do. My thanks to John Lavers who discovered and provided a copy of this list from the Kaduna, Nigeria, archives.

6. Kanakuru, a language rather distantly related to Bolanci within Bole-Tangale, is a Stage-II type language (Newman 1974). The more closely related Karekare, on the other hand, is a Stage-III language (M. H. Schuh, field notes). This suggests that Proto-Bole-Tangale should be reconstructed as already being at Stage II. As the function of the "direct vs. linked" distinction faded, Karekare extended the "linked" type, moving to Stage III, while Bolanci extended the "direct" construction, making it a "renewed Stage I" language.
7. The second feminine singular pronoun is reconstructible as **kam*, and is still pronounced as such in the closely related Ngizim and Duwai languages. The initial **k* has weakened to *g*- in Gashua Bade and has been lost altogether in the linked genitive constructions.
8. Phrases such as *əkil-aa-ŋ-ii mdo* 'these your cattle' are not ungrammatical in Bade. However, they carry a sense of "particularity" or the like, the "neutral" sense of possession being expressed simply by the noun with the possessive suffix. This sense of "particularity" may well be present when such phrases have relative clause modifiers. Indeed, the frequent association of this particular function of demonstratives with relative clause modifiers could be a path by which demonstratives could be reinterpreted as relative pronouns.
9. The Egyptian third masculine singular *p* or *f* looks out of place in Afroasiatic. I suggest that it derives from **s*, or more precisely **sw*. As anecdotal support for the plausibility of this etymology, I note that my older daughter, at about age 3, consistently pronounced all words beginning "sw-" with initial [f], e. g., [fan] for 'swan'.

References

- Andersen, Henning
1973 "Abductive and deductive change", *Language* 49: 765–793.
- Cowan, David
1968 *An introduction to Modern Literary Arabic* (Cambridge: Cambridge University Press).
- Ebert, Karen H.
1979 *Sprache und Tradition der Kera, Teil III: Grammatik* (Marburger Studien zur Afrika- und Asienkunde A-15) (Berlin: Dietrich Reimer).
- Frajzyngier, Zygmunt
1984 "On the Proto-Chadic syntactic pattern", in: J. Bynon (ed.), *Current progress in Afro-Asiatic linguistics* (Current Issues in Linguistic Theory 28) (Amsterdam: Benjamins), 139–159.
- Gardiner, Sir Alan
1979 *Egyptian grammar*³ (Oxford: Griffith Institute, Ashmolean Museum).
- Greenberg, Joseph H.
1960 "An Afro-Asiatic pattern of gender and number agreement", *JAOS* 80: 317–321.

- Hoskison, James T.
1983 *A grammar and dictionary of the Gude language* (Ph. D. dissertation, Ohio State University).
- Jungraithmayr, Hermann – Kiyoshi Shimizu
1980 *Chadic lexical roots²: Tentative reconstruction, grading and distribution* (Marburger Studien zur Afrika- und Asienkunde, A-26) (Berlin: Dietrich Reimer).
- Lukas, Johannes
1968 "Nunation in afrikanischen Sprachen", *Anthropos* 63: 97–114.
1970–72 "Die Personalia und das primäre Verb im Bolanci (Nordnigerien)", *Afrika und Übersee* 54: 237–286, 55: 114–139.
- Newman, Paul
1974 *The Kanakuru language* (West African Language Monographs 9) (Leeds: The Institute of Modern English Language Studies in Association with the West African Linguistic Society).
1977 "Chadic classification and reconstructions", *Afroasiatic Linguistics* 5 (1): 1–42.
- Schuh, Maxine H.
Field notes on Karekare collected in Potiskum, Nigeria, 1969–70.
- Schuh, Russell G.
1972 *Aspects of Ngizim syntax* (Ph. D. dissertation, UCLA).
1975 "Nunation and gender in Bade", *Afrika und Übersee* 58: 106–119.
1977 "Bade/Ngizim determiner system", *Afroasiatic Linguistics* 4 (3): 1–74.
1983 a "The evolution of determiners in Chadic", in: E. Wolff–H. Meyer-Bahlburg (eds.), *Studies in Chadic and Afroasiatic languages* (Hamburg: Helmut Buske), 157–210.
1983 b "Kilba equational sentences", *Studies in African Linguistics* 14: 311–326.
ms[a] *A grammar of Miya* [descriptive grammar in preparation].
ms[b] Field notes and draft chapters for an eventual descriptive grammar of Bolanci.
- Skinner, A. Neil
1977 "North Bauchi Chadic languages: Common roots", *Afroasiatic Linguistics* 4 (1): 1–49.
- Skinner, Margaret G.
1979 *Aspects of Pa'anci grammar* (Ph. D. dissertation, University of Wisconsin).

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