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Interrogating the Egypto-Sudanic Arabic Connection

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Abstract: The Arabic dialectology literature repeatedly asserts the existence of a macro-level classificatory relationship binding the Arabic speech varieties of the combined Egypto-Sudanic area. This proposal, though oft-encountered, has not previously been formulated in reference to extensive linguistic criteria, but is instead framed primarily on the nonlinguistic premise of historical demographic and genealogical relationships joining the Arabic-speaking communities of the region. The present contribution provides a linguistically based evaluation of this proposed dialectal grouping, to assess whether the postulated dialectal unity is meaningfully borne out by available language data. Isoglosses from the domains of segmental phonology, phonological processes, pronominal morphology, verbal inflection, and syntax are analyzed across six dialects representing Arabic speech in the region. These are shown to offer minimal support for a unified Egypto-Sudanic dialect classification, but instead to indicate a significant north–south differentiation within the sample—a finding further qualified via application of the novel method of Historical Glottometry developed by François and Kalyan. The investigation concludes with reflection on the implications of these results on the understandings of the correspondence between linguistic and human genealogical relationships in the history of Arabic and in dialectological practice more broadly.

Keywords: dialect classification; subgrouping; Sudanic Arabic; Egyptian Arabic

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1. Introduction

This investigation intends a twofold contribution to the advancement of Arabic dialect classification. In the finer grain, I present an empirical evaluation of the frequently asserted macro-level classificatory grouping comprising the Arabic dialects of Egypt and those of the greater Sudanic region (Fischer and Jastrow 1980; Kaye and Rosenhouse 1997; Dickins 2011; Versteegh 2014). At a broader scale, I seek to interrogate the principal theoretical premise invoked in support of this proposed classification: that the shared (human) genealogical history of speech communities constitutes a reliable a priori basis for the classification of those communities' dialects in terms of diachronic relatedness and/or synchronic similarity. While the former priority will primarily engage specialists in Arabic and related languages, it is hoped that the latter will provide reflection pertinent both within and beyond the Arabist sphere, and initiate mutually informative conversations with colleagues of diverse foci, perspectives and expertise.

Dialectological description of Arabic dialects spoken in the Egyptian and Sudanic areas is remarkable for its unevenness. This broad, contiguous zone extends from the Mediterranean in the north to the Sudan–South Sudan border region in the south, and from the Red Sea westward to the Libyan Desert and, further, the vicinity of Lake Chad in Central Africa—the north–south stretch of the Nile Valley constituting an organizing "spine" and center of geographic and demographic gravity. Arabic varieties spoken in this region are utilized by a combined speaker population well in excess of 100 million (Eberhard et al. 2021). Knowledge of dialect diversity in the Egyptian portion of the zone has benefitted immensely from the achievement of Behnstedt and Woidich's (1985–1999) multivolume dialect atlas, text collection and glossary, and analysis of the dialect of Cairo has been particularly thorough (esp. Woidich 2006b). In comparison, Fischer and Jastrow could write of the vast Sudanic Arabophone territory as late as 1980 that "[w]ir haben

zwar aus diesen Raum eine Anzahl Texte und einige Lehrbücher sowie Vokabulare, aber nicht eine einzige halbwegs moderne grammatische Monographie" [We have from this area a number of texts and some textbooks, as well as vocabularies, but not a single halfway modern grammatical monograph] (Fischer and Jastrow 1980, p. 31). The state of scholarship has improved somewhat since, with the publication of two key book-length treatments of varieties local to the east (Reichmuth 1983) and far west (Owens 1993a) of the Sudanic region alongside thematic analyses of structural phenomena in, respectively, urban and semi-nomadic lects of Sudan's center (Dickins 2007a, 2009, 2010) and west (Manfredi 2014, 2018). Even so, the differential in scholarly attention to the Egyptian and Sudanic dialect areas remains severe, and the two, respectively, contain some of the best and least described speech varieties of modern Arabic.

The relevance of this imbalance is heightened when taken in combination with the fact that dialects of the combined Egypto-Sudanic zone are commonly associated with one another in discussions of Arabic dialect classification and subgrouping, frequently culminating in their collective classification as an identifiable dialectological unit superordinate to more localized groups. Illustrative articulations of this view are, among others, Kaye and Rosenhouse's assertion that "[a]s a whole, Sudanese dialects, at least those in the north, form one macro-grouping with the Egyptian dialects" (Kaye and Rosenhouse 1997, p. 265), and Fischer and Jastrow's positioning of the dialects of central and eastern Sudan as "[d]ie südliche Fortsetzung der oberägyptischen Dialekte" [the southern continuation of the Upper Egyptian dialects] (Fischer and Jastrow 1980, p. 31). To some extent, this lumping may stem from the shared failure of a number of varieties in both the Egyptian and Sudanic areas to clearly align with either of two primary classificatory dichotomies espoused by Arabic dialectologists, the Bedouin vs. sedentary split and the Eastern Arabic vs. Western Arabic split (cf. Heikki Palva 2006): Fischer and Jastrow, for instance, describe the collected dialects of Egypt and the Sudan as taking "eine Sonderstellung zwischen denen des Ostens und des Maghrib" [a special position between those of the East and those of the Maghrib] (Fischer and Jastrow 1980, p. 29). Such negative characterizations, however, framed on these dialects' incongruity with external typologies, do little to positively establish dialectal unity within the Egypto-Sudanic region. In this regard, analysts like the latter authors instead place particular emphasis on the identification of Egypt as the primary source for the historic in-migration of Arabic speakers to the greater Sudan (Fischer and Jastrow 1980, p. 22). It is this second criterion—the putative common genealogical history of the Egyptian and Sudanic Arabophone speech communities—which has most frequently and most prominently featured as the anchoring factor of proposed classificatory relationships between Egyptian and Sudanic Arabic dialects.

Present in the influential early work of Kaye (1976), reliance on genealogical connection persists as the dominant narrative of more recent scholarship linking Egyptian and Sudanic Arabic. This reasoning is encapsulated in Dickins' position that, "[r]eflecting the fact that the major penetration route of Arabic speakers was from Upper Egypt, through Nubia into Central Sudan, CUSA [Central Urban Sudanese Arabic] is more closely related to Egyptian Arabic—and particularly the Ṣaʿīdī [Upper Egyptian] dialects, than any other non-Sudanese dialects" (Dickins 2011, p. 936). Likewise, Versteegh, in describing varieties of the combined Egypto-Sudanic area under the heading "Egyptian dialects," frames his account with the assertion that "[f]rom Egypt, the Arabic language was brought along the Nile to the South, into Sudan and Chad" (Versteegh 2014, p. 205). Certainly, the correlation of linguistic isoglosses to paths of migration and human movement remains a venerable and valuable practice in the Arabist tradition (Behnstedt and Woidich 2005; Heikki Palva 2006) and dialectology more generally (Chambers and Trudgill 2004; Britain 2016). In the Egypto-Sudanic case, however, the practice has not precisely been realized. Likely connected to the comparative lack of reliable dialectological description in the Sudanic portion of the area, observations of genealogical links between Egyptian and Sudanic speech communities have most often been proffered in place of a detailed accounting of shared linguistic features, rather than alongside one—thus positioning common genealogy as a direct *indicator* of

dialectal classificatory relationship, not an *explanans* to be utilized in the interpretation of a relationship separately established on linguistic grounds. On the whole, it is observed that macro-level co-classifications of Egyptian and Sudanic dialects have tended to proceed from the extra-linguistically founded premise of shared population origin to treat the collective body of Sudanic Arabic, definitionally, as "originally a dialect of an Egyptian dialect of Arabic" (Kaye 1976, p. 177), and to subsequently adduce linguistic evidence of this—linguistic—relationship only in a secondary, corroborating fashion (if at all).

Gratefully, a small number of exceptions to this general pattern are to be found. Owens (1993b) undertakes a thorough investigation of the dialectological relationships of Nigerian Arabic, which he situates within concentric spheres of affiliation incorporating, successively, other West Sudanic varieties, Sudanic Arabic writ large, and (primarily Upper) Egypt. In a further (2003) work, the same author presents a focused and convincingly argued account of the migratory dispersal of a particular feature, inflection of the first person imperfect, between specified subregions of the Egypto-Sudanic area. These contributions prove marked advancements in the understanding of dialectal inter-relationships within the region, and stand out for their reliance on concrete linguistic data. However, given their targeted framing and methodological emphasis on "patchwork" features which typify particular pairings/subsets of Egypto-Sudanic varieties but not the area as a whole (Owens 1993b, p. 158), these studies are not positioned to stand as full corrective or confirmation to the more broadly construed claims of macro-level classificatory unity so often advanced elsewhere in the literature. Approaching that task in more direct yet far more perfunctory fashion is Reichmuth, who in the introductory pages of his descriptive grammar of the East Sudanese dialect of the Šukriyya (Reichmuth 1983, pp. 24–29) sketches the extra-Sudanic incidence of several isoglosses characteristic of that variety as a baseline evaluation of its compatibility with the proposal of an Egypto-Sudanic subgroup, among other potential affiliates. Though he does identify a degree of isoglossic overlap between Šukriyya and Egyptian forms, he deems the comparison inconclusive and unable to demonstrate a direct taxonomic dependency. Valuable as Reichmuth's work may be in conception, the preliminary state of his evaluation and its conscious limitation to the focal point of the Šukriyya variety unfortunately constrain its usefulness as a linguistically anchored counterpoint to the genealogy-centered accounts of Egypto-Sudanic subgrouping that continue to dominate Arabist discourse.

It is in relation to this lacuna that I frame the present contribution: a linguistic investigation of the validity of the proposed linking of the Arabic dialects of the Egypto-Sudanic region as a macro-level classificatory unit, as has been prominently and repeatedly proposed in the Arabist literature on the nonlinguistic grounds of shared genealogical history. As described in detail in the following subsections, I shall present data from a selection of Sudanic and Egyptian varieties for analysis via both conventional and more innovative dialectological methods to determine whether their common classification as a macro-level dialect grouping is linguistically justified—or whether, in Reichmuth's words, "[s]o bleibt nur die Annahme gemeinsamer Ursprünge übrig" [all that remains is the assumption of common origins] (Reichmuth 1983, p. 29).

2. Methods and Sources

Consistent with the framing described just above, this investigation does not seek to re-litigate the historical basis of shared genealogies and migration paths that dialectologists and others have considered to bind Arabic speakers of the Egypto-Sudanic region. That these have their root in the first major demographic influx of Arabs westward into Egypt in the seventh century, thence southward into the Sudanic area—incipient as early as the tenth century, more saliently from the fourteenth onward (with prominent place given to tribal entities including the Juhayna and the Jaʿaliyyīn)—is largely accepted in the historical literature and has not substantively fluctuated over the previous century of scholarship (Holt and Daly 2011; and cf. MacMichael 1922). Though this consistency does not elevate the accepted narrative of events or its central tenets beyond any question or criticism

(see, e.g., Spaulding 2000), it does make it likely that any meaningful revision of these understandings needs be based in a specialist comprehension of historical demography and supported by the advent of novel or reinterpreted historical data—neither of which I claim here. Instead, the present inquiry, true to its conception, centers on the evaluation of the linguistic relationship purported to mirror these historical genealogical linkages and connect the region's speech varieties in a manner worthy of reflection in macro-level schemes of Arabic dialect classification.

To accomplish this, I compare dialectological data from a sampling of Arabic varieties local to the proposed Egypto-Sudanic dialect area, in order to establish the definition and incidence of isoglosses which might weigh for or against the identification of a region-wide dialectal unity. I have selected six dialects to serve as core sources of data for this inquiry: three from the Egyptian portion of the zone and three from the Sudanic. The choice of the latter, especially, is constrained on the basis of available descriptive material. Thus, I have opted for the two varieties of Sudanic Arabic most comprehensively documented via book-length descriptive grammars—the dialect of the Šukriyya of eastern Sudan's Buṭāna region, as described by Reichmuth (1983), and that of Arabic speakers living in northeastern Nigeria's Borno state, documented by Owens (1993a)—in addition to the dialect of Khartoum, here mainly reflecting the grammatical sketches of Dickins (2007b, 2011), as occasionally supplemented by material from Bergman (2002) and Hillelson (1935). Together, these exemplify the West Sudanic type (Nigerian) and both traditional (Šukriyya) and urban (Khartoum) speech forms of the core Sudanic area. The three varieties representing the Egyptian portion of the region comprise, from north to south, those of Cairo (Woidich 2006b), Qift (Nishio 1995) on the east bank of the Nile in Upper Egypt, and the il-Biʿeṛāt territory on the Nile's west bank opposite Luxor (Woidich 2006a). Drawn from a larger pool of available descriptive material, these Egyptian varieties have been selected to provide a focus on the Nile Valley, due to its centrality in existing discussions of dialectal interrelationship within the Egypto-Sudanic sphere (Owens 2003; Versteegh 2014). While the dialects of Qift and il-Biʿeṛāt are spoken quite near to one another in absolute terms, each is recognized as belonging to a distinct dialectal subregion of Upper Egyptian Arabic (cf. Behnstedt and Woidich 2018). This sampling of six varieties is not intended to be comprehensive, but rather sufficiently representative to establish the minimum viability of a proposed Egypto-Sudanic dialect classification—in the view that any isogloss with the potential to support a unified Egypto-Sudanic grouping should provide a detectable signal in *at least* this subset of six dialects, and that the artificial reduction in dialect diversity this (or any) sampling entails is more likely to overestimate the incidence of globally unifying features than to ignore them.

As to the nature of such potential features, this inquiry will address variation across the six dialects examined in the areas of phonology (segmental phonology and synchronic phonological processes), pronominal systems (personal, demonstrative, relative and interrogative), verbal inflectional morphology (agreement and tense-aspect-mood marking), and selected areas of syntax (negation, analytic possession, and demonstrative and interrogative word orders) in the attempt to identify shared features which might serve to join all or most of the six in support of a unified Egypto-Sudanic dialect grouping. The first three of these domains, and the features within them, have been chosen for (a) their consistently important roles in existing frameworks of Arabic dialect classification and (b) their attestation via comparable qualities of data across the individual dialect descriptions consulted. The fourth domain, that of syntax, is less commonly relied upon than these first three in general Arabic dialectological surveys,[1] but is included here due to its prominence in discussion of Egypto-Sudanic varieties, specifically (e.g., Versteegh 2014). Coverage within each domain will strive to be inclusive of all potentially relevant variables but will generally restrict discussion to features which typify two or more of the speech varieties under examination, favoring a focus on cross-dialectal commonality rather than individually defining features.

Once the data pertaining to each of these domains have been presented and appropriately described, the global results will be evaluated to determine their consistency with an Egypto-Sudanic classificatory unit proposed on the basis of shared genealogical history of the region's speech communities. Consistent with the migration-based narrative's inherent implication of diachronic linguistic relatedness, elements of these findings will also be assessed in the light of directly attested historical data, as well as comparative and internal reconstructive analyses. Following this, further insight will be derived via application the novel model of Historical Glottometry developed by François and Kalyan (François 2014; Kalyan and François 2018), which will be shown to offer interpretatively relevant perspective on the complex data at hand. Following discussion of these points, I will reflect on their implications for direct reliance on shared genealogical history in the shaping of linguistic classificatory schemes—in the Egypto-Sudanic case, in Arabic at large, and, by extension, as a practice adopted by students and scholars of dialectology more generally.

3. Results

The following subsections present results of the investigation of phonological, pronominal, verbal inflectional, and syntactic variables in the six dialects of the Egypto-Sudanic area currently under consideration. Unless otherwise specified in the text or via a table note, data for each dialect are derived from the descriptive source mentioned in association with that variety in Section 2, above. As relevant, the incidence of a given dialect feature in Arabic varieties spoken outside the immediate study area will also be noted.

3.1. Phonology

3.1.1. Segmental Phonology

This section describes the variable realization of consonantal and vocalic segments in the six studied varieties. In terms of consonants, these variables comprise the reflexes of Old Arabic */g/ (<ج>), */q/, the interdental series */θ, ð̣, ð̣/, and */ṭ/ (a subscript dot indicating the phonemic feature of "emphasis", the phonetic quality of which has been variously described as pharyngealization, verlarization, uvularization, or dorsalization—cf. discussion in Jongman et al. 2011). Vowels examined include reflexes of the Old Arabic diphthongs */ay, aw/ and short vowels */i, a, u/. Results are summarized in Table 1.

Table 1. Segmental Phonology.

Variable	Cairo	Qift	Bʿēri	Khartoum	Šukriyya	Nigeria
*/g/	/g/	/ʤ~ d/	/ʄ~ dʲ/	/ʄ/ [1]	/ʄ/	/ʤ~ ʄ/
*/q/	/ʔ/	/g/	/g/	/g/	/g/	/g/
*/θ/	/t/	/t/	/t/	/t/	/t/	/t/
*/ð/	/d/	/d/	/d/	/d, ḍ/ [2]	/d, ḍ/	/d, ḍ/ [3]
*/ð̣/	/ḍ/	/ḍ/	/ḍ/	/ḍ/	/ḍ/	/ḍ/ [3]
*/ṭ/	/ṭ/	/ṭ ~ tˀ/	/tˀ/	/ṭ/	/ṭ/	/ʠ/
*/ay, aw/	/ē, ō/	/ē, ō/	/ē, ō/	/ē, ō/	/ē, ō/	/ē, ō/
*/i, a, u/	*/i, a, u/	*/i, a, u/	*/i, a, u/	*/i, a, u/	*/i, a, u/	*/i ~ u, a/ [3]

[1] Bergman (2002). [2] Hillelson (1935). [3] Owens and Hassan (2009).

Following Behnstedt and Woidich (2018, pp. 69–70) in identifying the Old Arabic articulation of <ج> as [g], rather than the received [ʤ] of the Classical Arabic tradition, we may conservatively view the /g/ realization of */g/ in Cairo as a retention. Outside Cairo, more fronted realizations are evidenced. The palatal articulation /ʄ/ dominates in the core Sudanic region represented by the dialects of Khartoum and the Šukriyya, and is variably present in Nigeria and in Bʿēri Arabic, the southernmost of the three Egyptian varieties examined.[2] Realization as an alveopalatal affricate /ʤ/ is variably attested for Nigeria and Qift, and increasingly alveolar articulations /dʲ/ and /d/ are additionally observed in the Bʿēri and Qift varieties, respectively. None of these realizations, then, is ubiquitous. Palatal /ʄ/ is perhaps of high salience, given its comparative rarity outside

this region (primarily also known from a limited number of varieties of the Arabian Peninsula—Ingham 1971; Zaborski 2007), but cannot be described as a typifying feature of the collected Egypto-Sudanic dialects as whole, or even of a substantial majority.

Perhaps of greater potential in this sense is the voiced reflex /g/ of Old Arabic */q/, robustly characteristic of all varieties in the sample outside of Cairo. Typical of all six dialects inclusive of Cairo is the merger of the Old Arabic interdental series */θ, ð, ð̣ / with corresponding alveolar stops */t, d, ḍ/. Setting apart the three varieties of the Sudanic area, however, is an additional emphatic reflex /ḍ/ of */ð/, the conditioning of which vis à vis plain /d/ is not immediately clear, but which is clearly and consistently attested across all three varieties and must logically have preceded the more general merger of */ð/ > /d/. Neither the voicing of */q/ nor the fortition of the interdentals is unique to the Egypto-Sudanic region, as these features are pervasive throughout the modern Arabic-speaking world. The coincidence of the two is perhaps more noteworthy, breaking as it does from the oft-discussed Bedouin/sedentary dichotomy which associates voiced reflexes of */q/ with the preservation of interdentals and voiceless realizations with their loss. Taine-Cheikh (2000), however, illuminates in detail the more general co-occurrence of these two isoglosses across a wide, northeast African geographic zone stretching from western Libya to points in the Sinai Peninsula and easternmost Hijaz, thereby rendering the coincidence less unusual in the Egypto-Sudanic area's immediate geographic context.

Far scarcer, but not unknown, in broader dialectological light are glottalic/glottalized realizations of */ṭ/, comprising the Nigerian implosive /ɗ̣/ alongside the glottalized articulation /ṭˀ/ typical of Bʿēri and variably noted for Qift—all viewed similarly here for the conspicuous involvement of the glottis in the production of each (downward retraction of the glottis in /ɗ̣/, closure and release of the glottis in/ṭˀ/). Similar realizations are noted outside the Egypto-Sudanic area in some Moroccan varieties as well as in scattered locations in the Levant and southern Arabia (cf. Zeroual 2006); these remain minority forms cross-dialectally, however, and may therefore be indicative of a linkage between the three specific Egypto-Sudanic dialects that display them. These realizations do not, however, serve to typify Egypto-Sudanic varieties as a whole, and neither is their status as innovation or retention—a crucial distinction in this instance—immediately clear.

In terms of vocalism, we may note the ubiquitous monophthongization of inherited diphthongs */ay, aw/ to long mid vowels /ē, ō/. This feature links all six members of the present sample, though it does not meaningfully distinguish them from neighboring dialects to the east (Kaye and Rosenhouse 1997) or immediate west (Owens 1984). Retention of all three Old Arabic short vowels has been invoked as a more distinctive regional feature in the case of Egyptian varieties (Versteegh 2014), and this generalization bears out in the current sample for all dialects save that of Nigeria, in which reflexes of Old Arabic */i, u/ are largely noncontrastive. This consistency is noteworthy in the context of widespread merger of */a, i/ to the west of the Egypto-Sudanic area and of */i, u/ to its north and east. Retention of all three vowels is not unknown outside the area, however—attested, for example, in Yemen and other portions of the Arabian Peninsula (Behnstedt and Woidich 2018)—and the nature of the feature as a common inheritance rather than a shared innovation limits its utility in support of a diachronically oriented, migration-based model of dialect classification, as will be discussed in Section 4.1 below.

3.1.2. Phonological Processes

Our review of phonological features also includes three synchronically active phonological processes: the raising of /a/ > /e/ in word-final position (often referred to as final *imāla*); the elision of unstressed /i, u/ in nonfinal open syllables following a vowel; and the shortening of phonemically long vowels in unstressed position. The incidence of these processes is summarized in Table 2 (<+> denoting the presence of a given process in each dialect and <−> its absence).

Table 2. Phonological Processes.

Variable	Cairo	Qift	Bʿēri	Khartoum	Šukriyya	Nigeria
/a, ā/ > /e/ / _#	−	+	+	−	−	+
/i, u/ > Ø / VC_CV [-stress]	+	+	+	+	+	−
/V̄/ > [V] / [-stress]	+	+	+	−	−	−

A process which may be broadly described as word-final /a/-raising, affecting reflexes of both Old Arabic */a, ā/, is indicated for the Bʿēri, Qift and Nigerian dialects. Cross-dialectally, processes with similar phonetic outcomes may be identified in a number of Levantine varieties, alongside looser correlates in Mesopotamia, Arabia and elsewhere in the Arabic-speaking world (cf. Levin 2007). However, significant differences in conditioning complicate the co-identification of the three Egypto-Sudanic processes as a single, shared feature, either within or without the sample: raising in Qift is reported to occur word-finally (though it would appear from Nishio's data that the rule is variably applied), Bʿēri Arabic raises in pausal position, and in Nigerian Arabic /a/ is raised word-finally as triggered by the presence of a front vowel in the preceding syllable. Regardless of this feature's ultimate (dis)unity, it is not sufficiently widespread in the sample to be considered characteristic of a potential Egypto-Sudanic dialect grouping, occurring as it does in three dialects at most.

Elision of /i, u/, however, presents a different picture. Five of the six dialects in the sample display a similar form of conditioned deletion affecting the two short high vowels to the exception of their low counterpart, the core environment of which involves occurrence in a nonfinal, unstressed open syllable preceded by a vowel. In Nigerian Arabic, all short vowels, including /a/, are potentially subject to elision processes, and the conditioning environment is somewhat distinct from and more limited than that observed elsewhere in the set, requiring the presence of a preceding long vowel or sonorant (see Owens 1993a, pp. 33–36). The consistent occurrence of the elision feature across the remainder of the dialects surveyed is noteworthy, though not necessarily distinctive, as it further typifies an extensive array of additional dialects spoken across the Levant, Northwest Arabia, and elsewhere (frequently identified under Cantineau's traditional designation *parlers différentiels* for their distinct treatment of high and low short vowels under these conditions).

Finally, the shortening of unstressed long vowels is observed to occur across the sample's three Egyptian varieties, and is in fact commonly referenced as a distinctive phonological process of that area. While this generalization is borne out for Egyptian varieties by the current data, it would not seem to extend to the Sudanic contingent of the dialects examined, all three of which maintain vocalic length distinctions in both stressed and unstressed positions.

3.2. Pronominal Morphology

3.2.1. Personal Pronouns

Table 3 summarizes the independent personal pronoun paradigms for the six dialects under review. Discussion here will primarily focus on these morphologically free forms, used in subject function, though mention of their enclitic counterparts utilized in object and possessive roles is also made as relevant below. Note that the Qift forms cited ending in /a/ vary with equivalents ending in /e/ (see discussion of /a/ > /e/ raising in Section 3.1.2), and that one speaker of this variety attests a 3.pl form *humman*.

On the whole, the observations arising from comparative review of these paradigms tend toward the identification of distinct Egyptian and Sudanic norms over pan-regional unity. The first such generalization that can be made is the association of 1.pl forms lacking initial /n/ (typically viewed as an innovative) with the dialects of the Egyptian portion of the area, and forms maintaining it with those of the Sudanic portion—here considering Nigerian *anīna* an /n/-ful form, perhaps remodeled by analogy with 1.sg *ana*, and additionally recognizing the occasional occurrence of /n/-ful reflexes in Egyptian territory, as described variably for Qift. In the second place, we may also observe the distinct distri-

butions of "short" and "long" forms of the third person pronouns, with short, monosyllabic forms (e.g., Šukriyya *hū*, *hī*, *hun*, *hin*) typical of the Sudanic portion of the region and long, disyllabic forms (e.g., Cairo *huwwa*, *hiyya*, *humma*) typical of Egyptian territory. In the singular, both short and long forms may be considered innovations from earlier *huwa, *hiya (which appear to be variably retained in Khartoum and Qift alongside innovative short and long forms, respectively). For the plural, typically reconstructed as *hum, *hinna, the long masculine and short feminine forms may be seen as innovations and the short masculine and long feminine forms as retentions (Fischer and Jastrow 1980; Procházka 2014). The geographic distribution of third person patterns is somewhat complicated by the "mixed" composition of the Nigerian paradigm, presenting short forms in the singular and long forms in the plural, and the existence of both short and long variants of the Bʿēri singulars, but overall the general principle of bifurcation between the two subregions—rather than commonality across them—is maintained. Also consistent with this pattern are shifts of */nt/ > /tt/ in second person forms and 3.m.pl *hum > *hun* in the dialects of the Šukriyya and Khartoum, the latter perhaps deriving via analogy with feminine *hin*. An exception is the shift of initial */a/ > /i/ in all six dialects' second person forms, an innovation common to the majority of modern Arabic varieties.

Table 3. Independent Personal Pronouns.

Pronoun			Cairo	Qift	Bʿēri	Khartoum	Šukriyya	Nigeria
3rd	Sg.	m.	*huwwa*	*huwa ~ hūwa*	*hū ~ hūwa*	*hu ~ huwa* [1]	*hū*	*hu*
		f.	*hiyya*	*hiya ~ hīya*	*hī ~ hīya*	*hi ~ hiya* [1]	*hī*	*hi*
	Pl.	m.	*humma*	*humma*	*huṃṃa*	*hum ~ hun* [1]	*hun*	*humma*
		f.	–	–	*hinna*	[*hin*]	*hin*	*hinna*
2nd	Sg.	m.	*inta*	*inta*	*inta*	*inta ~ itta* [1]	*itt*	*inta*
		f.	*inti*	*inti*	*inti*	*inti ~ itti* [1]	*itti*	*inti*
	Pl.	m.	*intu*	*intu*	*intu*	*intu ~ ittu* [1]	*ittu*	*intu*
		f.	–	–	*intan*	[*intan ~ ittan* [1]]	*ittan*	*intan*
1st	Sg.		*ana*	*ana*	*ana ~ āna*	*ana*	*ana*	*ana*
	Pl.		*iḥna*	*iḥna ~ naḥna*	*iḥna*	*niḥna*	*niḥna*	*anīna*

[1] Bergman (2002) [transcription of final vowel length regularized for comparability].

The loss of the masculine/feminine distinction in second and third person plurals, with consequent generalization of the inherited masculine form, may be noted in Cairo and Qift and would appear to be currently progressing in the dialect of Khartoum, where distinctive feminine plural forms appear obsolescent and are sociolinguistically associated with rurality (Dickins 2007b, p. 561). Indeed, given the relative population structures of the speech communities under discussion, such a rural/urban dichotomy may underlie the distribution of this feature in the current sampling more meaningfully than would the geographic divide described in relation to the previous two, though it should not escape notice that the two geographically atypical cases, Khartoum and Bʿēri, represent the northernmost Sudanic and southernmost Egyptian varieties sampled, respectively. In either case, the picture is once again one of heterogeneity rather than conformity of personal pronoun systems across the Egypto-Sudanic zone.

Turning briefly to the bound personal pronoun forms, not presented in Table 3, three distinctive features are observed. The unusual retention of 2.sg.f *-ki* and the innovation of 3.m.sg *-a* (< *-hu) serve to bind Nigerian and Bʿēri, while the remaining varieties instead attest the innovative forms *-ik* and *-u* (though Qift *-o*) near-ubiquitous in modern Arabic, likely as pre-diasporic developments (cf. Behnstedt and Woidich 2005; Owens 2006). Thirdly, the three Sudanic dialects of Nigeria, Khartoum and (more marginally) the Šukriyya share with one another the variable loss of initial /h/ in third person bound forms, and display similar interactions of this feature with stress assignment.

3.2.2. Demonstrative Pronouns

The proximal and distal demonstrative pronoun series of the six dialects examined are presented in Table 4. This presentation summarizes a highly diverse array of available data, particularly as pertains to the three Egyptian varieties. Intra-dialectally varying forms deemed to represent progressive degrees of reduction from a common source etymon have been simplified with a single representation here, and those displaying singular sporadic phonetic developments or synchronically predictable pausal realizations are likewise not shown; for a full accounting of all variants, relevant to this analysis and otherwise, see Woidich (2006b, pp. 44–46, 303), Nishio (1995, p. 190), and Bergman (2002, p. 43). When a sole plural form is indicated, its use comprises both masculine and feminine values, its position within the table selected on the basis of cognacy.

Table 4. Demonstrative Pronouns.

	Pronoun		Cairo	Qift	Bʿēri	Khartoum	Šukriyya	Nigeria
Near	Sg.	m.	*da ~ dawwa*	*de*	*da*	*da*	*da*	*da*
		f.	*di ~ diyya*	*dey ~ dīye*	*di*	*di*	*di*	*di*
	Pl.	m.	*dōl(a)*	*dōl ~ dowal*	*dōl(a)*	[*dōl*] [1]	*dōl*	*dōl(a)*
		f.	–	*dōle*	*dēl(a)*	*dēl*	*dēl*	*dēl(a)*
Far	Sg.	m.	*dukha*	*dakka ~ dāk*	*dukkāti*	*dāk*	*dāk*	*ḍāka*
		f.	*dikha*	*dikke*	*dikkīti*	*dīk*	*dīk*	*ḍîke*
	Pl.	m.	*dukham*	*dokkum*	*dukkumma*	[*dōlāk*] [1]	*dōlak*	*ḍōlak(a)*
		f.	–	–	*dikkinna*	*dēlak ~ dēk*	*dēlak*	*ḍēlak(a)*

[1] Bergman (2002).

As a point of departure for analysis, it seems likely that the full array of forms presented here (with the possible exception of the distal plurals, as discussed below) ultimately originates in a paradigm similar to that attested for the Šukriyya variety in Table 4. Relevant features at a broad level of Arabic demonstrative classification involve the leveling of initial /d/ (< */ð/) across all members of the paradigm, the absence of a reflex of the Old Arabic presentative particle *hā-, and the use of vowel alternation to indicate gender distinction in both the singular and plural while, for the most part, simultaneously maintaining consonantal marking of plurality (for further discussion of these traits in cross-dialectal context, see Magidow 2013). Taken individually, none of these characteristics is restricted to the Egypto-Sudanic area; their converging incidence, however, largely is, identifiable elsewhere in comparable fashion only at scattered points in southwestern Arabia and possibly the central Levant (Magidow 2016). The essential tenets of this shared basic paradigm, then, together rise as a potentially significant piece of linguistic evidence supporting the common classification of the dialects of the Egypto-Sudanic area.

At the same time, substantial secondary divergences parallel the north–south splits between Egyptian and Sudanic varieties already observed in relation to several personal pronoun forms. Primary among these is the rise of forms etymologically comprising a demonstrative element of the type witnessed above supplemented by the incorporation of a following independent personal pronoun. With the exception of the Qift variant *dāk*, these forms have entirely supplanted the presumably unsupplemented original distals in the three Egyptian varieties (e.g., Cairo *dukha* < *dāk huwwa, *dikha* < *dīk hiyya, etc.), and occur variably in the proximal series of the two northernmost Egyptian varieties as well (e.g., Qift *dīye* < *di hīye). Magidow (2013, p. 400) has previously proposed that these composite forms evolved from an original presentative structure of the same composition, on the basis of like presentatives in use in other dialects, such as Ḥassāniyya. This assessment is support by the presence of presentatives of this type closer to home in the current sample, in the form of Nigerian *dawa* < *da huwa 'here he is . . . ', *ḍākwa* < *dāk huwa 'there he is . . . ', etc. (cf. Cairo *dawwa* 'this (m.sg)', *dukha* 'that (m.sg)'). This development—to which Nigerian shares the precursor, but in which it does not participate—thus serves to differentiate the three Egyptian dialects of the sample from their Sudanic counterparts.

Following from analysis of Egyptian distals in this manner is the further insight that the Cairo, Qift and Bᶜēri paradigms may display a distinctive, vowel-alternating mode of plural formation. In contrast to the distal plurals of the three Sudanic varieties, which are transparently formed via the addition of the distal morph *-k* to the existing proximal plural, the Egyptian forms do not contain any visible reflex of the proximal plural's distinctive /l/—instead, we encounter a plural marking back vowel of the type *dukham*, *dokkum*, *dukkumma*. It is certainly possible that an original /l/ of the plural form has simply vocalized, or that, given the occurrence of /u/ in some Egyptian m.sg forms (e.g., Bᶜēri *dukkāti*), these plurals contain reflexes of a generalized singular *dāk. It is also plausible, however, to connect the vowel-alternating inflection attested in, e.g., Qift *dakka*, *dikke*, *dokkum*, to that known from a number of North African varieties, as in Ḥassāniyya *ðāk* (m.sg), *ðīk* (f.sg), *ðūk* (pl.) (Taine-Cheikh 2007). If this development is indeed reflected in the Egyptian forms, it would mirror that encountered in the Khartoum variant *dēk*, which may in turn have a counterpart in the initial element of Bᶜēri f.pl *dikkinna*. Such plurals are not the norm in the three Sudanic varieties, however, which instead maintain the /l/-marked plural intact (including in the Nigerian presentative set perhaps cognate to the Egyptian distals, m.pl *ḍolakkahumma*, f.pl *ḍelakkahinna*), thereby presenting a further potential north–south distinguishing feature among the dialects examined.

The final secondary development of note in relation to the demonstrative pronouns is the occasional loss of gender distinction in the plural, accompanied by the generalization of a single plural form to encompass both gender values. In the Egyptian varieties that have lost their original gender distinction, an original masculine form has generalized, whereas in Khartoum, when gender distinctions are lost, it is an original feminine form that has done so (compare Šukriyya m.pl *dōl*, f.pl *dēl* with Cairo c.pl *dōl(a)*, Khartoum c.pl *dēl*). Qift, with m.pl *dōl*, f.pl *dōla ~ dōle*, would seem to have initially followed Cairo in generalizing a masculine form, but subsequently reallocated originally variable *dōl ~ dōla* to distinct gender values (perhaps via analogy with the f.sg nominal marker *-a*). Given the differentiated pathways taken in the generalization of formerly gendered forms in the dialects of Cairo and Qift, on the one hand, and Khartoum, on the other, it is perhaps advisable to view these two developments as parallel yet independent.

3.2.3. Relative Pronoun

Rather than unifying the Egypto-Sudanic zone, relative pronoun forms further perpetuate the previously witnessed divide between the three Egyptian varieties of Cairo, Qift and il-Biᶜeṛāt and the three Sudanic ones of Nigeria, Khartoum and the Šukriyya. The former set all display the identical relative form *illi*, reflecting a development near-ubiquitous across modern Arabic varieties (Vicente 2009). The dialects of the Sudanic area, on the other hand, all present the identical form *al-*, which has for all intents and purposes functionally merged with the definite article (Dickins 2009). This latter development is far less common in comparative scope, but is also apparent in a small number of dialects of the northern Fertile Crescent area (Vicente 2009).

3.2.4. Interrogative Pronouns

Table 5 summarizes the interrogative pronouns 'who?', 'what?' and 'which?' attested for the six dialects under investigation. Cautiously excluded here are forms transparently mirroring Classical Arabic *ʔayy* 'which?' noted for Cairo and Nigeria, on the grounds that this is frequently identified in the modern Arabophone world as a diglossic import, not indicative of these varieties' inter-dialectal relationships but rather of their individual connections to a shared acrolect (cf. Woidich 2006b, p. 35). In the case of Qift, such a form is the only one given for 'which?' by Nishio (1995); interpretation of this is fact discussed below.

Table 5. Interrogative Pronouns.

Pronoun	Cairo	Qift	Bʿēri	Khartoum	Šukriyya	Nigeria
'who?'	*mīn*	*mīn*	*mīn*	*minu* [1]	*minū* [1], *min*	*mine*
'what?'	*ē(h)*	*ē*	*ē(h)*	*šinu* [1]	*šinū* [1], *šin*	*šinu* ~ *šunu*
'which?'	*anhi* [1] ~ *āni*	[*ayy*]	*innhi* [1]	*yātu* [1]	*yātū* [1]	*yēnu* [1] ~ *yatu* [1]

[1] Demonstrates agreement phenomena.

Replicating the geographic patterning now familiar from other aspects of the pronominal system, forms for 'who?' in the Egyptian portion of the Egypto-Sudanic region are unified in displaying an innovative, sporadic long vowel /ī/. This long vowel is not present in any of the three more southerly varieties, though these likewise agree with one another in the inclusion of an original personal pronoun, incorporated alongside inherited *min as a marker of gender and number agreement. Such inflectional behavior is maintained in its full form in the dialect of the Šukriyya (m.sg *minū*, f.sg *minī*, m.pl *minun*, f.pl *minin*), alongside an uninflecting form *min* (the distinct syntactic behavior of which is treated below in Section 3.4.4). Inflecting forms are noted as well in older descriptions of the speech of Khartoum (Hillelson 1935), though modern sources (Dickins 2007b; Bergman 2002) indicate that an invariant (originally m.sg) *minu* at least alternates with these, if it has not replaced them entirely. The latter outcome would seem to have been the case for Nigerian *mine*, which does not inflect for number or gender but appears to display the reflex of an earlier incorporated pronoun. As isoglosses, both short and long vocalic reflexes, as well as personal pronoun incorporation, are well known outside the Egypto-Sudanic region.

Forms for 'what?' follow a similar north–south division: those of the three Egyptian dialects feature a reflex of earlier *ēš < *ʔayy šayʔ'which thing?', while those of the Sudanic varieties seem to ultimately reflect a version of a similar etymological source phrase with the inclusion of nunation: *šin < *ʔayy šayʔin 'which thing?'. As observed for the Sudanic 'who?' forms, 'what?' forms of this area also display the incorporation of personal pronouns, with comparable patterns of productivity in agreement inflection to those described just above. Though neither the nunated nor the non-nunated derivation serves to unify the study area, both are widespread in modern Arabic more broadly.

Pronouns meaning 'which?' may additionally be distinguished into northern and southern blocks within the Egypto-Sudanic zone, though along a slightly different boundary. Complicating evaluation in the context of the present study is the recording of a single form *ayy* for Qift, which, as has been noted, likely represents a borrowing from Classical Arabic *ʾayy* (more transparently so in the case of Cairo *ʾayy*, which displays an initial glottal stop regularly lost in the variety). It is probable that Qift also includes (or included, until recently) a form cognate with Cairo *anhi*, Bʿēri *innhi*, perhaps similar to the *ʾinhī* reported for nearby ʿIzbat al-Būṣa (Khalafallah 1969). Regardless, it would appear that forms of this type, reflecting Old Arabic *ʔayyun (or Aramaic *aynā*) combined with an etymological personal pronoun, are typical of the Egyptian portion of the area, and likely also include the Nigerian variant *yēnu*. The southern dialects, including Nigerian via its variant *yatu*, are instead distinguished by reflexes of earlier *ʔayyat (plus incorporated pronoun). Products of both etymologies inflect for agreement when following a modified noun (e.g., Bʿēri m.sg *innhū*, f.sg *innhī*, pl. *innhumma*, Khartoum m.sg *yātu*, f.sg *yāti*, pl. *yātum*), but occur invariantly when preceding one—the Sudanic varieties fixing an original masculine singular form in this usage, the Egyptian ones more often an original feminine. Forms of the *ʔayyun type are well known beyond the confines of the Egypto-Sudanic region. Reflexes of *ʔayyat are much more unusual, known elsewhere only from a few locations in western (and especially northwestern) Arabia (cf. Reichmuth 1983, p. 118).

3.3. Verbal Inflectional Morphology

3.3.1. Agreement Inflection

Table 6 summarizes the major distinctive elements of verbal agreement inflection across the Egypto-Sudanic varieties surveyed. The feature "f.pl" refers to the presence of

distinct masculine and feminine agreement morphemes in the second and third person plurals of all conjugation paradigms; those dialects that do not display this feature have generalized inherited m.pl forms across both contexts. The remaining features relate specifically to either the perfect or the imperfect conjugation of Form I sound verbs, as indicated in the table.

Table 6. Verbal Agreement Inflection.

Pronoun	Cairo	Qift	Bᶜēri	Khartoum	Šukriyya	Nigeria
f.pl	–	–	+	[+]	+	+
Perfect						
1.sg	*-t*	*-t*	*-t*	*-ta*	*-t* ~ ˈ_*(-t)*	ˈ_*(-t)*
3.f.sg	*-it*	*-at*	*-at*	*-at*	*-at*	*-at*
3.m.pl	*-u*, *-ū-*	*-u* ~ *-ow*, *-ū-* [1]	*-aw*, *-ō-*	*-u*, *-ō-* [2]	*-u*, *-ō-*	*-o*, *-ō-*
Imperfect						
Prefix V	C*i-*	C*i-*	C*i-*, C*a-*	C*a-*	C*a-*	C*a-* ~ C*i-*
1.sg	*a-*	*a-*	*n-*	*a-*	*a-*	*(b)a-* ~ *n-*
1.pl	*n-*	*n-*	*n-. . . -aw*	*n-*	*n-*	*n-* ~ *n-. . . -u*

[1] Behnstedt and Woidich (1985–1999, Map 207). [2] Bergman (2002).

Parallel to the pronominal development described in Section 3.2.1, above, the dialects of Cairo and Qift do not retain a gender distinction in plural agreement morphology, and this distinction appears to be fading from use in the dialect of Khartoum. This development may thus be seen as a source of differentiation within the six varieties sampled, perhaps reflecting a rough north–south geographic divide, perhaps on the basis of difference between urban and rural populations. All dialects which distinguish the feminine plural do so in a formally identical manner, via use of a suffix *-an* (3.f.pl)/*-tan* (2.f.pl).

In assessing agreement markers of the perfect conjugation, features distinctive of this dataset in the pan-Arabic view include the conjugation of the 1.sg (identical in all cases to the 2.m.sg), the 3.f.sg, and the 3.m.pl. The 1.sg forms of the three dialects of the Egyptian area show the expected *-t* (< *-tu) typical of the great majority of modern Arabic varieties. Among the three dialects of the Sudanic area, however, we view a pair of innovative local developments. In Khartoum, the 1.sg agreement value is marked with the suffix *-ta*, the /a/ of which likely represents the morphologized product of a former paragogic vowel, following an earlier development *-tu > *-t (similar to the 3.m.sg *-a* of geminated verbs in the same dialect). In Nigeria, we witness the loss of earlier 1.sg *-t* and consequent rise of contrastive stress distinguishing 1.sg *kaˈtab* from 3.m.sg *ˈkatab*; the original *-t* resurfaces prevocalically, as when preceding a bound object suffix or occasionally in connected speech. The same inflectional pattern is recorded among the Šukriyya, there alternating with more standard *-t*. The 3.f.sg suffix is *-at* in all dialects save that of Cairo, where it is *-it*. The Cairene reflex is innovative; retention of inherited *-at* thus typifies the rest of the group, though as a feature it does not serve to differentiate these dialects from neighboring varieties of Libya or the Arabian Peninsula.

South of Cairo, one encounters lowered realizations of the inherited 3.m.pl suffix *-ū. These begin marginally in Qift, in a minority variant *-ow* of more general *-u*. In Bᶜēri, this suffix is *-aw*, with an allomorph *-ō-* in nonfinal position (i.e., when followed by an additional suffix), and Nigerian Arabic likewise appears to show lowered realizations, *-o* and *-ō-*, in both conditions—though definitive interpretation of the Nigerian data is potentially confounded by the influence of vowel harmony (Owens 1993a, p. 105). In the dialects of Khartoum and the Šukriyya, a lowered realization only emerges as a nonfinal allomorph, contrasting final *-u* with nonfinal *-ō-*. The universally lowered reflexes identified in Bᶜēri and Nigerian are a traditionally acknowledged "Bedouin" feature characteristic of a wide array of Arabic varieties from North Africa to the Arabian Peninsula to Mesopotamia. The conditioned lowering exemplified in the speech of Khartoum and the Šukriyya is of far more limited distribution, though it does also occur in the dialect of Mecca and the Jewish communolect of Baghdad (Reichmuth 1983, p. 28). Were these two types of

lowering to be identified as a single dialectal feature, then they would serve as an additional southerly isogloss linking the three Sudanic varieties, as well as the southernmost Egyptian variety—however, it is not clear that it is warranted to overlook the potentially significant allomorphic differences between the two.

Turning to the imperfect conjugation, the six dialects do not pattern uniformly with regard to the quality of the vowel utilized in the formation of imperfect agreement prefixes with Form I sound verbs. As noted in relation to several previous features, the general shape of the distribution would seem to be one of a north–south divide: the varieties of Cairo and Qift, aligning with the majority of modern Arabic varieties, show a prefix vowel /i/, while those of Khartoum and the Šukriyya have /a/. The dialect of Nigeria offers variation on this count, speakers utilizing both /i/ and /a/ reflexes. In Bᶜēri, the prefix vowel shows harmony with the theme vowel of the inflected verb, thus manifesting as /i/ or /a/ in predictable fashion. All of these patterns may be considered innovative in relation to the oldest reconstructable state of this variable in Arabic, which has been proposed to consist of alternation between /a/ and /i/ in inverse relation to the height of the imperfect theme vowel, in accordance with the Barth-Ginsberg Law (Bloch 1967; Pat-El 2017) Thus, salient isoglosses within the Eypto-Sudanic area, none of these developments are confined to the zone: generalization of /a/ is known in Western Arabia and the Yemeni Tihama, while that of /i/ dominates elsewhere, and harmonization of the Bᶜēri type is also known in North Africa (cf. Behnstedt and Woidich 2005, pp. 12–13).

The innovative first person agreement marking scheme 1.sg *n-*/1.pl *n-…-u*, typical of North Africa west of the Egypto-Sudanic area, also appears in our data as an inflectional norm in Bᶜēri and as an available variant in Nigerian. Though its presence is of dialectological note, this feature does little to clarify broader understandings of a potential macro-level Egypto-Sudanic dialect classification, as heterogeneity on this point is already well established in both the Egyptian and Sudanic portions of the area. For excellent discussion of this development's history and distribution in the region, see Owens (2003).

3.3.2. Tense, Aspect, Mood and Voice Inflection

Beyond agreement, Table 7 summarizes additional verbal inflectional morphology utilized in the expression of tense, aspect, mood and voice. The prefix of the imperative mood is provided first, followed by the passive marker. Next, an array of "preverbal" modifiers are included which indicate a complex (and often varying) set of tense, aspect and mood values, details of which will be explicated as part of the following discussion.

Table 7. Tense, Aspect, Mood and Voice Inflection.

Pronoun	Cairo	Qift	Bᶜēri	Khartoum	Šukriyya	Nigeria
Imperative Prefix	*i-*	*i-*	*i-*	*a-* [1]	*a-*	*a-*
Passive Prefix	*it-*	*it-*	*it-*	*it-*	*in-*	*an-*
TAM modifiers						
*bi-	*bi-*	[*ba-* [2]]	–	*bi-*	*bi-*	*b-*
*ʕammāl	*ʕammāl*	–	*ʕa-* ~ *ʕama-*	–	–	–
*rāħ	*ħa-* ~ *ha-*	*ħa-*	*ṛāħ* ~ *ṛaħa* ~ *ħa-*	*ħa-*	–	–

[1] Bergman (2002). [2] Behnstedt and Woidich (1985–1999, Map 221).

Vowel qualities of the imperative prefix display a similar north–south differentiation to that previously noted for the prefix vowel of the imperfective, and in synchronic terms these two traits are likely not systemically independent; total convergence of this kind is likely best interpreted as innovative in each case, the probable product of analogy (cf. Bar-Asher 2008). A prefix *i-* is thus encountered in the three dialects of Egypt, while the form *a-* is found in the three varieties of the Sudanic portion of the region. The latter is known outside the area in the same limited distribution described for the C*a-* prefix vowel (Section 3.3.1), while the former occurs in modern Arabic more widely.

The passive morpheme splits the area latitudinally in a similar manner, though in this instance Khartoum, the northernmost variety of the Sudan, is seen to pattern with the body of Egyptian varieties in displaying *-it*. The dialects of Nigeria and the Šukriyya, on the other hand, share in presenting /n/-based forms. Both features are generally considered to be innovations on the Old Arabic type, and each shares a wide distribution in the modern Arabophone world more broadly.

The first TAM modifier to be discussed, (shallowly) reconstructable to *bi-, is the most widely distributed in the present sampling with detectable reflexes in all but one of the six varieties—not being recorded for Bʿēri. In Nigerian, this morpheme has partly been subsumed into the person marking system, occurring as a quasi-fixed component of originally vowel-initial agreement prefixes of the imperfect conjugation; elements of productive use do remain, though their precise functions in Nigerian remain far from clear (see discussion in Owens 1993a, pp. 106–10). Values of *bi-* in Khartoum and among the Šukriyya more plainly include continuous (ongoing, repetitive, habitual) aspect, and futurity. Cairene *bi-* echoes the former of these, though notably not the latter, and adds a meaning of general realis or indicative mood (Brustad 2000, pp. 246–47). Little information on preverbal modifiers is provided as part of Nishio's descriptive materials for Qift. Behnstedt and Woidich's (1985–1999) immediately neighboring sample point of il-Barāhma, however, attests a "Verbmodifikator Präsens" *ba-*, which, given its treatment in the atlas, likely expresses semantics similar to those of Cairo *bi-*. While the functions of these various items are thus differentiated across the dialects examined, their simple exponence as a feature does unite the greater part of the area. Reflexes of innovative *bi- are, of course, well known outside the Egypto-Sudanic zone as well—most especially in the Levant, the Arabian Peninsula, and Libya. Semantically, the functional range described for the core Sudanic varieties is the more typical cross-dialectally, which in some cases leans even more heavily toward future and volitional readings.

An additional continuous aspect marker is found in Egypt, reconstructable to *ʕammāl. This item is reflected in Cairene *ʿammāl*, the meanings of which are far more narrowly defined than those of *bi-* and express a notion of intensity, iterativity, and repetition. Bʿēri *ʿa-* ~ *ʿama-* is of more generalized usage, and is reported to carry functions largely comparable to those filled by reflexes of *bi- in other dialects of the sample. Though *ʕammāl is not entirely absent in Sudanic territory (cf. Hillelson 1935), it is a definitive rarity there, and does not occur in the three Sudanic dialects sampled. It is elsewhere known outside Egypt from the Levant and scattered points in southwest Arabia. Future tense markers reflecting *rāħ are attested in all three Egyptian dialects and in Khartoum. In the latter location, *ħa-* is reported by both Dickins (2007b, p. 569) and Bergman (2002, p. 38) as a recent Egyptianism. In light of its absence in the other Sudanic varieties sampled, and the lack of a clear dialect-internal grammaticalization chain (*maša* largely outcompeting lexical *rāħ* as the general term for 'go' in Sudanic dialects), this attribution is likely correct. Regardless of its ultimate originality in Khartoum, this innovative feature serves to differentiate the two southernmost varieties of the sample from the four northernmost, which join a wide array of modern dialects to attest products of this development from Algeria to Mesopotamia (cf. Leddy-Cecere 2020).

3.4. Syntax

The following subsections address a selection of syntactic features relevant in the evaluation of a potential Egypto-Sudanic dialectal unity, namely negation strategies, analytic genitive structures, the ordering of adnominal demonstratives, and WH-question formation. Though all elements of the ensuing discussion will likely be familiar to Arabic dialectologists, it bears note that, while syntactic variation of these types has frequently been addressed in formal (Aoun et al. 2010), comparative (Brustad 2000) and diachronic light (Wilmsen 2014), it has less often been the stuff of broad-based efforts toward top-tier Arabic dialect classification. In the Egypto-Sudanic case specifically, however, shared syntactic features—particularly the latter two considered in this section—are consistently among

the few concrete pieces of linguistic evidence invoked in support of the identification of a unified subgroup (cf. Versteegh 2014, p. 209); as such, they merit a full treatment here.

3.4.1. Negation

Rather than uniting the six Egypto-Sudanic dialects surveyed, negation strategies are seen once again to divide the region into northern and southern camps, reminiscent of geographic patterns previously established in relation to numerous phonological and morphological variables already considered. The three Egyptian varieties surveyed display a "split" negation system typical of both modern and historical forms of Arabic, whereby two distinct strategies exist for the negation of verbal and nonverbal predicates. In all three dialects, the first of these involves a discontinuous negation structure, the second a unitary particle deriving diachronically from a negated third person singular pronoun (having since shed such morphological specification). The following examples from Cairene, showing verbal *ma . . . -š* and nonverbal *miš* (~*muš*), are typical:

1. *ma katab-š*
   NEG wrote.3MSG-NEG
   'He did not write.' (Cairo: Woidich 2006b, p. 335)
2. *da miš kwayyis*
   that NEG good
   'That is not good.' (Cairo: Woidich 2006b, p. 334)

Equivalent markers in Qift and Bᶜēri are *ma . . . -š/muš* and *ma . . . -(i)š/miš*. Bᶜēri stands out for allowing at least a limited application of verbal *ma . . . -(i)š* to nonverbal predicates (e.g., *ma zēn-iš* 'not good', Woidich 2006a, p. 303) alongside more standard *miš*, although potential pragmatic specificities of such usage remain undescribed (cf. discussion in Brustad 2000, pp. 291–94).

In the three Sudanic varieties of the sample, by contrast, no such verbal/nonverbal distinction in negation strategies exists, and both predicate types are negated by a unitary operator with no discontinuous element. Consider, from Khartoum:

3. *ma btafham ʕarabi*
   NEG understand.2MSG Arabic
   'You don't understand Arabic.' (Khartoum: Dickins 2007b, p. 570)
4. *inta ma kwēyis*
   you NEG good
   'You are not nice.' (Khartoum: Dickins 2007b, p. 570)

Negator *ma ~ mā* is used similarly in the dialects of the Šukriyya and Nigeria. In the latter variety, alongside *ma* we also encounter a generalized negator *mi* grammaticalized from an earlier negated third person pronoun and used in nonverbal negation, thus analogous in origin to Egyptian *miš ~ muš* but with no sign of an original discontinuous element -*š*. In sum, then, we find negation dividing the sampled dialects into Egyptian and Sudanic camps on two fronts. In the first place, the three Egyptian varieties are defined by the presence of discontinuous negation, and the three Sudanic varieties by its absence; in the second, the Egyptian dialects characteristically comprise distinct verbal and nonverbal negation strategies while the Sudanic dialects do not—Bᶜēri and Nigerian each demonstrating a degree of variable "slippage" from these otherwise generalizable norms. On the first count, the innovative Egyptian trait is broadly typical of dialects of the Arabic-speaking West, the more conservative Sudanic one those of the East. On the second count, it is Sudanic which stands out against the general backdrop of modern Arabic in utilizing a single strategy for the unmarked negation of both verbal and nonverbal predicates, though such may in fact represent a retention of inherited properties of Old Arabic *mā* (cf. discussion in Brustad 2000, pp. 277–83; Ouhalla 2008).

A third negation type, that of a negated personal pronoun paradigm fulfilling what has often been described as a negative copular function, is also in evidence in dialects of the Egypto-Sudanic area; however, a paucity of coverage in descriptive sources renders

a comprehensive evaluation here impossible. On the basis of those dialects for which sufficient data are available (those of Cairo, Nigeria and the Šukriyya), it seems likely that a north–south split of the dimensions already described characterizes treatment of this negation strategy as well. This would be true both in terms of the pragmatic markedness of such usage (largely unmarked in the two Sudanic varieties, while in Cairene indicating the negation of a presupposition) and in terms case assignment (the negative structure generally triggering accompanying accusative pronouns in the two Sudanic varieties but nominative ones in Cairene, e.g., Šukriyya *māk*, Cairo *mantāš* 'you (m.sg) are not'). Though thus not inconsistent with the geographic division outlined in relation to the better known strategies, more definitive analysis of this third negation type awaits further descriptive information.

3.4.2. Analytic Genitive

All six dialects of the Egypto-Sudanic area examined present use of an analytic genitive structure alongside the inherited Old Arabic synthetic (juxtaposed) genitive. Such structures as a general scheme are a widespread innovation in modern Arabic, though individual forms and properties vary widely from dialect to dialect (Behnstedt and Woidich 2005; Eksell Harning 1980). The essential components of the construction are a possessum, which governs a following genitive exponent, which in turn governs a following (nominal or pronominal) possessor, on the model of the following:

5. *al-kutub ħaggat al-madrasa*
   DEF-books GEN DEF-school
   'the books of the school' (Khartoum: Dickins 2007b, p. 570)
6. *ik-kaṛafattāt bitūʕ-ik*
   DEF-ties GEN-you.FSG
   'your ties' (Cairo: Woidich 2006b, p. 59)

Beyond the existence of the general schema, which all six dialects attest, the overall picture of analytic genitive structures across the varieties sampled is one of both formal and functional diversity. In the first place, a wide array of different exponents occur, of diverse etymology. The most widely spread are those reconstructable to *bitāʕ, ultimately < *matāʕ'property'. Reflexes of the latter are distributed broadly from Morocco to the southern Levant, but known with the sporadic mutation of initial */m/ > /b/ in the eastern portion of this region only (Egypt and the Sudan, alongside some Levantine attestations). Such forms are instantiated in Cairo *bitāʕ* and Qift *bitāʕ ~ ibtāʕ*, the sole genitive exponents reported at these locations, and in variation with products of other etymologies in the dialects of il-Biʿeṛāt (*ibtāʕ*), Khartoum (*bitāʕ*), and (more marginally) the Šukriyya (*bitāʕ ~ butāʕ*), thus leaving Nigerian the sole dialect sampled not to attest a reflex. There, the genitive exponent is instead *hana* < *hana 'thing', which is also reflected in Bʿēri *ihnīn*, and encountered outside the region in the interior northern Levant. Alongside *bitāʕ*, Khartoum sports an exponent *ħagg* < *ħaqq 'property, right', well known from dialects of the Arabian Peninsula, which is also attested as a marginal variant *ħagg* among the Šukriyya. The primary exponent in this last variety is *hūl* (likely < *hū li- 'it (3.m.sg) [is] for'), which may also be reflected in its f.sg guise *hīl* as a suppletive variant member of the Nigerian *hana* paradigm: m.sg *hana*, f.sg *hīl ~ hinta*. Šukriyya further attests yet another variant *allīl* (< *allī li- 'which [is] for'), also known from dialects of southern Egypt not included in this sample (Behnstedt and Woidich 2005).[3] Thus, the picture which emerges is one in which reflexes of *bitāʕare typical and (to a degree) distinctive of the bulk of the varieties surveyed, though not to the exclusion of other exponents in use in the same speech communities. Meanwhile, reflexes of *hana, *hūl and *ħaqq serve to unite pairs of dialects within the sample, but do not broadly typify the set as a whole.

As far as syntactic behavior and semantic functions are concerned, the information provided by descriptive sources is uneven, but the following generalizations may be made. In all cases save that of Qift, for which Nishio does not specify, exponents are observed to agree in gender and number with their governing possessum (e.g., Bʿēri m.sg *ihnīn*,

f.sg *ihnīt*, m.pl *ihniyyīn*, f.pl *ihniyyāt*); such inflection in fact reveals underlying variation in the use of *bitāʕ*, which inflects for m.pl as *bitāʕīn*/*ibtāʕīn* in the Khartoum, Bʿēri and Šukriyya dialects, but as *bitūʕ* in Cairo. These agreement properties are not unique to the Egypto-Sudanic area, though nor are they universal cross-dialectally. Cairene *bitāʕ* constructions have been demonstrated to show a strong dispreference for the governing of indefinite and/or nonspecific possessors, outside of an idiomatic meaning of 'one who likes . . . ' (Brustad 2000, pp. 80–82); information is lacking for Qift and Bʿēri, but Dickins (2007b) description of Khartoum *bitāʕ* and *ħagg* would seem to indicate a similar state of affairs. In the Šukriyya and Nigerian dialects, however, such uses are noted, in Nigerian even extending as far as fully nonreferential classificatory function:

7. *nāga hīl šukriyya*
   camel GEN Šukriyya
   'a Šukriyya woman's camel' (Šukriyya: Reichmuth 1983, p. 112)
8. *maraba hīl lēs*
   cloth GEN lace
   'lace cloth' (Nigeria: Owens 1993a, p. 64)

Examples like these indicate a clear heterogeneity of analytic genitive functional properties within the Egypto-Sudanic zone, and mirror potential correlates in dialects as far-flung as Morocco and Kuwait (cf. Brustad 2000). Though a geographic, social, or other ordering may ultimately underlie these patterns, information is insufficient to offer such a determination at the present time.

3.4.3. Adnominal Demonstrative Order

The etymological form and paradigmatic organization of demonstratives has been described above (Section 3.2.2) as a potentially strong instance of innovative uniformity across members of a proposed Egypto-Sudanic dialect classification. In addition to these commonalities noted in the morphological dimension, the syntactic properties of demonstratives in adnominal usage also display distinctive and uniform characteristics across dialects of this region—a fact which has arisen in the Arabist literature as one of a small number of concrete linguistic traits identified as definitive of a macro-level Egypto-Sudanic grouping. Specifically, demonstratives in all six dialects sampled occur post-nominally, as in (9) and (10), thus opposed to the typical Arabic pre-nominal pattern exemplified by Moroccan in (11):

9. *ar-rājil da*
   DEF-man DEM.MSG
   'this man' (Nigeria: Owens 1993a, p. 45)
10. *ir-rijjāl dowal*
    DEF-men DEM.MPL
    'these men' (Qift: Nishio 1995, p. 190)
11. *hād n-nās*
    DEM DEF-people
    'these people' (Moroccan: Brustad 2000, p. 118)

While available as a pragmatically marked alternative to the pre-nominal position in many dialects, as well older forms of Arabic, utilization of the post-nominal structure as an unmarked norm, without a genuinely productive pre-nominal counterpart, is highly unusual cross-dialectally and virtually restricted to the Egypto-Sudanic area (Brustad 2000; Vicente 2006). Within the area, minor but potentially significant exceptions in the form of rhetorically/stylistically specified usages and fixed expressions with pre-nominal ordering may be noted for—at least—the dialects of Cairo and the Šukriyya; the implications of these will be considered in Section 4.1. Irrespective of this fact, post-nominal demonstrative order in its present incarnation does appear to present a key point of unity across dialects of the Egypto-Sudanic zone, and a key point of distinction between these and the collective body of Arabic varieties spoken elsewhere.

3.4.4. WH-Movement

Alongside post-nominal demonstrative position, Versteegh notes for "Egyptian Arabic . . . as well as . . . the related Sudanese dialects" an additional conspicuous syntactic trait: the nonfronting of WH-elements in content questions (Versteegh 2014, p. 209). Such in situ question formation is not typical of Arabic, in which the fronting of interrogative elements, whether accompanied by resumption or gapping, is more usually the unmarked norm (Aoun et al. 2010). Retaining a degree of cautious agnosticism regarding Qift, the descriptive source for which does not provide sentence level examples, in situ question formation is attested across the full set of Egypto-Sudanic varieties sampled. Representative instantiations are provided in (12) and (13), accompanied by a WH-fronted sentence from Lebanese Arabic in (14) for comparison:

12. *ʕawz min-ha ʔē?*
want.MSG from-it what
'What do you want from it?' (Bᶜēri: Woidich 1974, p. 54)

13. *jīt maʕa minu?*
came.2MSG with who
'Who did you come with?' (Khartoum: Dickins 2007b, p. 562)

14. *šu badd-ak tə-ʔra b-l-ʔawwal?*
what want-2MSG 2-read in-DEF-first
'What do you want to read first?' (Lebanese: Aoun et al. 2010, p. 140)

In addition to this pattern, Šukriyya departs from the rest of the dialects in containing a parallel set of interrogative pronouns, morphologically distinguished by the lack of an incorporated personal pronoun (see Section 3.2.4), which are not utilized in situ but only in fronted position. Compare the following (with the /n/ of *šin* assimilating to following /b/ in (16)):

15. *bi-d-dūr šinū?*
CNT-2-want what
'What do you want?' (Šukriyya: Reichmuth 1983, p. 117)

16. *šim bi-d-dūr b-u?*
what CNT-2-want with-it
'What do you want with it?' (Šukriyya: Reichmuth 1983, p. 117)

Despite its status as a minor and pragmatically marked variant, the structural properties of this usage have important ramifications for the interpretation of the otherwise regular and distinctive feature of in situ WH-question formation in Egypto-Sudanic dialects. They, and other points noted throughout our review of these varieties' phonological, morphological and syntactic characteristics, will provide a critical qualitative dimension to the global evaluation of linguistic evidence for an Egypto-Sudanic dialect classification based in shared genealogical history. It is to this task we shall turn in the paper's remaining sections.

4. Discussion

4.1. Global Evaluation of Results

Having reviewed the major phonological, pronominal, verbal inflectional and syntactic characteristics of the Arabic dialects of Cairo, Qift, il-Biᶜeṛāt, Khartoum, the Šukriyya, and Nigeria, we will now direct the information adduced toward a linguistic evaluation of existing proposals of an Egypto-Sudanic dialect classification, as has been repeatedly asserted on the nonlinguistic basis of shared genealogical history uniting the region's Arabic speakers. In the event that such nonlinguistic factorsas migration history and common descent prove viable grounds for the classification and grouping of language varieties used in the region, expectation is that a substantial number of shared linguistic features will arise to characterize the varieties in question. This would justify the prediction of a meaningful degree of dialectological similarity as a consequence of the historical and demographic unity ascribed to their speakers by extra-linguistic lines of research.

This expectation, however, is not substantively met by the linguistic data gathered through the process of this inquiry. Of over fifty phonological, morphological, and syntactic features identified and discussed in the preceding subsections, only seven may be recognized as uniformly present across all Egypto-Sudanic varieties sampled. These are:

- */θ, ð, ḏ/ > /t, d, ḍ/ (Section 3.1.1)
- */aw, ay/ > /ē, ō/ (Section 3.1.1)
- Initial */a/ > /i/ in second person pronouns (Section 3.2.1)
- Proximal demonstrative paradigm on the pattern *dā, dī, dōl, dēl (Section 3.2.2)
- 1.sg/2.m.sg perfect in *-t*, or further evolution thereof (Section 3.3.1)
- Post-nominal demonstrative order (Section 3.4.3)
- In situ WH-question formation (Section 3.4.4)

To these, we might, for the sake of consideration, generously add six more—those features which proved characteristic of all but one of the surveyed dialects, and whose incidence may thus have been proved broader in a different sampling. These are:

- */q/ > /g/ [all but Cairo] (Section 3.1.1)
- Distinction of */a, i, u/ [all but Nigerian] (Section 3.1.2)
- /i, u/ > Ø / VC_CV [-stress] [all but Nigerian] (Section 3.1.2)
- 3.f.sg perfect in *-at* [all but Cairo] (Section 3.3.1)
- Continuous aspect marker from *bi- [all but Bʿēri] (Section 3.3.2)
- Genitive exponent from *bitāʕ[all but Nigerian] (Section 3.4.2)

The question, then, stands: Are these features sufficient to corroborate the existence of a linguistically significant Egypto-Sudanic dialect classification, proceeding from a common dialectal input carried by those historical communities who introduced Arabic first to Egypt, then to the Sudanic area via subsequent migration?

Though no conventionalized, objective threshold exists by which to make such a determination, the evidence in the Egypto-Sudanic case is not compelling—neither in terms of its quantity nor, critically, its quality. Of the thirteen isoglossic features identified as uniform or near-uniform across the six varieties examined, two—3.f.sg *-at*, and distinction of */a, i, u/—are clear retentions from a common Old Arabic inheritance, not innovations distinctive of further dialectal diversification. While thus not contradicting a narrative of dialectal relatedness due to shared migration history, neither do they positively support one: rather, they simply reflect the fact that dialects of the Egypto-Sudanic area have remain largely unimpacted by the mergers of */a, i/ emanating from the west of the modern Arabic-speaking world and */i, u/ associated with its north and east, as well as the change *-at* > *-it* typical of a number of Eastern Mediterranean varieties. None of these facts are surprising, and do nothing to indicate a shared developmental history of Arabic varieties in the region—simply a shared, central geography.

Of the remaining features which may be considered genuinely innovative, some are so ubiquitous across modern Arabic as to hold little meaningful value in establishing an identifiable Egypto-Sudanic dialect classification based in shared demographic heritage. Among these are the monophthongization of */ay, aw/, retained as diphthongs only in scattered relict zones; the use of a 1.sg/2.m.sg perfect suffix *-t* (< *-tu), typical of virtually all modern Arabic varieties save those of the northern Fertile Crescent and parts of Yemen; and the change of initial */a/ > /i/ in the second person independent pronouns, identifiable in the vast majority of dialects outside the Arabian Peninsula (and many within it). These traits do not serve to differentiate dialects of the Egypto-Sudanic area from their immediate geographic neighbors in eastern Libya, the Hijaz or the Sinai (Owens 1984; Schreiber 1970; de Jong 2000), nor from the bulk of modern Arabic more broadly. A further number of features are not quite so universal in attestation, but still spread far beyond the bounds of the Egypto-Sudanic region. Fortition of interdental fricatives to corresponding stops, though not typical of the Egypto-Sudanic varieties' closest orbit of northern neighbors in eastern Libya or the Sinai (Owens 1984; de Jong 2000), is shared with the majority of varieties (both "sedentary" and some traditionally "Bedouin") of the remainder of North Africa and the

Levant, as well as urban Hijazi speech across the Red Sea (Schreiber 1970).[4] Elision of /i, u/ (but not /a/) in unstressed, open-syllable environment is well known outside the region and is present in the Egypto-Sudanic varieties' easterly dialectal neighbors in the Sinai and Mecca; the same is true for the voicing of */q/ > /g/, which is commonplace westward into Libya as well (de Jong 2000; Schreiber 1970; Owens 1984). Reflexes of the verb-modifying prefix *bi- extend beyond the Egypto-Sudanic zone's eastern edges into the urban Hijaz and the Sinai (Schreiber 1970; de Jong 2000), and further into Arabia and the Levant. Though absent from eastern Libya, their presence resumes in that country's west (Owens 1984). These features, then—while of obvious descriptive relevance—do not much contribute toward the definition of a classificatory unit which interprets the Egypto-Sudanic varieties as a discretely identifiable group, distinguished from other, neighboring dialects by the products of a separate developmental history.

The original thirteen features which might have been invoked in this regard, then, have fallen to four: a proximal demonstrative paradigm on the pattern *dā, dī, dōl, dēl, unmarked and obligatory post-nominal demonstrative order, in situ WH-question formation, and use of the genitive exponent *bitāʕ. These traits, held in common across all or nearly all members of the sampled group, are both innovative and, largely, distinctive—not generally encountered beyond these dialects' immediate environs, neither are they typical even of closely neighboring varieties. A similar demonstrative paradigm is reported for Mecca alongside more common variants with an initial *hā- element, and *bitāʕis variably attested in some dialects of the Sinai, but neither trait dominates in either region (Schreiber 1970; de Jong 2000). Both Meccan and eastern Libyan Arabic allow in situ WH-question and post-nominal demonstrative orders, but these are not unmarked or obligatory to the degree identified among the Egypto-Sudanic dialects considered here (Schreiber 1970; Owens 1984). From a synchronic descriptive standpoint, then, these four isoglosses stand as strong candidates to delineate linguistically meaningful boundaries between dialects of the Egypto-Sudanic area and adjacent Arabic varieties.

Such does not automatically, however, render these four features supportive of an Egypto-Sudanic dialect classification of the form so often proposed, predicated on the shared genealogical history of the Egyptian and Sudanic Arabic speech communities. Under such a framework, the claim advanced is that the migration of Arabic speakers from Egypt to the Sudanic region from the early Middle Ages onward carried to the latter a linguistic input characterized by recognizable dialectological features which may be observed to meaningfully describe and unite Arabic varieties of the Egypto-Sudanic zone to this day. There are clear reasons to doubt, however, that three of the four diagnostic features remaining to us represent the products of such a history. The *bitaʕ-type genitive exponents, for example, may be of reasonable antiquity—possibly attested as early as the eleventh century (Lentin 2018)—yet at the same time show every indication of representing a (Lower) Egyptianism only much later adopted by Arabic speakers of Upper Egypt and the Sudan. In the present sample, reflexes of *bitaʕexist below Qift only in variation with other, heterogeneous genitive exponents, and are consistently identified by researchers and speakers alike as carrying urban and Egyptian sociolinguistic valuation (for empirical investigation of this sociolinguistic dimension, see Miller and Abu-Manga 1992; Miller 2005). These facts, combined with the relative novelty of *bitaʕforms noted by Hillelson (1935) and their absence from Nigerian, would support a scenario of spread accompanying the colonial expansion and consolidation of Cairene political influence throughout the region under the Ottoman/Khedival and Anglo-Egyptian state apparatuses (ca. 1820–onward), rather than as part of an original linguistic input carried southward during the first waves of Arabization several centuries earlier.

Certain data likewise complicate the identification of two further syntactic features, post-nominal demonstrative order and in situ WH-question formation, as having arrived to Sudanic territory as part of a founding in-migration of Arabic speakers from Egypt. While post-nominal demonstrative ordering is normative throughout the Egypto-Sudanic region today (as the sampled dialects attest), this is known to not always have been the case. Doss

has demonstrated that pre-nominal demonstrative ordering in Egypt long existed as a historical alternative alongside the presently familiar post-nominal, and was "alive and productive" (Doss 1979, p. 356) in direct historical attestations dating as late as the seventeenth and eighteenth centuries; the pre-nominal structure, in fact, still exists in modern Cairene in a number formulaic usages and fixed expressions, including the grammaticalized *dilwaʔti* 'now' (< *di l-waʔt 'this time'). Though lacking a pre-modern textual record to provide comparable direct evidence, similar synchronic clues (e.g., Šukriyya and earlier Khartoum *daħīn* 'now' < *dal-ħīn 'this time') indicate that exclusively post-nominal demonstrative order has likewise not always been uniform in the Sudanic area (Reichmuth 1983, pp. 122–26). In this light, the present-day regime of obligatory post-nominal demonstrative ordering becomes a far less viable candidate to have been imported to the Sudanic area from Egypt as part of the latter region's initial Arabicization—not only because it does not appear to always have existed in Sudanic Arabic varieties, but also because it would not seem to have been so established in Egyptian varieties of the relevant era to begin with.

Direct historical attestation of WH-question formation is unfortunately less forthcoming, but internal reconstruction of the multimorphemic Sudanic interrogative pronouns *šinu and *minu may prove similarly revelatory. In contrast to their Egyptian counterparts of the types *ē(h) (< *ēš) and *mīn, these forms incorporate a reflex of a personal pronoun, which in some varieties still inflects to demonstrate agreement with the interrogated noun phrase. This difference is a critical one, in that it points to a structural dissimilarity in the diachronic source constructions that have given rise to the respective sets of interrogatives. Namely, the presence of the incorporated pronoun in the Sudanic varieties indicates the (historical) presence of a syntactic transformation in WH-questions, by which the non-interrogative element undergoes movement and is resumed by a third person pronoun in its deep-structure position. The following alternation of interrogatives with/without incorporated pronouns in the dialect of the Šukriyya is instructive:

17. *min ħaddas-ak?*
who told.3MSG-you
'Who told you?' (Šukriyya: Reichmuth 1983, p. 116)

18. *al-ħaddas-ak minū?*
REL-told.3MSG-you who
'Who told you?' (Šukriyya: Reichmuth 1983, p. 116)

The pronoun-incorporating structure in (18) would, presumably, have originally had its roots in a more complex, cleft-like structure on the order of (19), which has subsequently been subject to syntactic reanalysis/rebracketing:

19. *[al-ħaddas-ak]$_i$ min [hū]$_i$?
REL-told.3MSG-you who he
'He that told you, who is he?'

While sentences like (15), above, make it demonstrably clear that pronoun-incorporating interrogatives in present-day Sudanic varieties do not (or do not necessarily) carry a synchronic clausal interpretation of this type, the diachronic implication of this developmental pathway should not be overlooked. While questions formed in the manner of *raʔy-ak ē?* and *raʔy-ak šinu?* 'What's your opinion?' (Cairo and Khartoum, own knowledge) may both be validly described synchronically as displaying in situ formation, the latter presupposes an earlier cleft structure (*[raʔy-ak]$_i$ šin [hu]$_i$ 'Your opinion, what is it?'), which in turn presupposes the existence of a once-productive, WH-fronted, pronounless *šin* (cf. older Sudanese *šin gōl-ak* 'What do you say [lit. What's your saying]?'; Hillelson 1935, p. 62). The former does not, and the congruous modern products are thus assigned to two demonstrably incongruous developmental paths.

In the cases of WH-questions and demonstrative order, then, we must heed Pat-El's warning that "syntactic reconstruction based on cognate patterns may conflate genuine inherited syntactic material with cases of parallel development" (Pat-El 2020, p. 332)—

or, we may add, cases of contact-induced convergence. Either or both of these syntactic patterns may have emerged in dialects of the Egypto-Sudanic area independently, or either or both may be the products of mutually influenced development through centuries of intra-regional contacts. In light of the historical and internally reconstructed data, however, neither appear to have been imported intact from Egypt to the greater Sudan with the onset of Arab settlement.

In terms of common Egypto-Sudanic features identified by this investigation which do in fact support such a narrative, we are subsequently left with a single linguistic trait: a proximal demonstrative paradigm on the model *dā, dī, dōl, dēl. This commonality is a genuinely striking one—being both innovative and distinctive—and demonstrative pronouns are undoubtedly a substantial feature of relevance to any serious attempt at Arabic dialect classification (see Magidow 2013, 2016). Yet, most would agree that they do not, in isolation, provide a viable solitary basis for the formulation of such groupings. This remaining commonality is thereby rendered less proof positive of classificatory relationship and more enigmatic isogloss to be marked for future investigation in light of broader Arabic demonstrative typologies. The traditional Egypto-Sudanic classification of the Arabic dialectology literature, predicated on the nonlinguistic genealogical relatedness and shared migration history of the region's Arabic-speaking communities, is thus left roundly unsupported following focused linguistic review.

4.2. Whence from Here? An Excursus in Historical Glottometry

Rejection of the traditionally formulated, genealogy-based Egypto-Sudanic dialect classification at a macro-level does not, however, refute or diminish the multifarious and noteworthy dialectal commonalities linking and cross-cutting smaller subsets of Arabic varieties spoken in this region, in varying combinations. These isoglosses, and the linguistic relationships they identify, are real and significant, and merit further study and elaboration—more than can be accomplished in a single contribution, by a single researcher, or, perhaps, via a single perspective on the information at hand. In cases like the present one, in which a long-standing hypothesis has been determined to lack fit, a fresh view on existing data is often as essential, and as conducive to progress, as the gathering of new. Here, one such opportunity (among many) comes in the form of "Historical Glottometry," a novel approach to linguistic subgrouping recently elaborated by François and Kalyan (François 2014; Kalyan and François 2018).

Historical Glottometry was developed by its creators for application in scenarios in many ways analogous to the Egypto-Sudanic case described heretofore, in which the potential for "tree-like" relationships between once-unitary dialectal entities and "wave-like" patterns of convergence between previously more distinctive groups both loom large, and need both be considered in any comprehensive interpretation of the data. The method accomplishes this by integrating the key dialectological notion of the isogloss with the comparative method's focus on the common innovation, and labors to produce a diachronically interpretable measure of the relative strengths of multiple potential classificatory units revealed by analysis of a given dataset. Such an approach has been called for previously in the study of Arabic dialects (for a forcefully argued articulation, see Magidow 2017), and Historical Glottometry in particular has fruitfully filled this role in the examination of Boni dialect linkages (Elias 2019) and the Sogeram language family (Daniels et al. 2019), among others. I offer a preliminary application of the method here not as a route to a definitive classificatory model, but instead as an exploratory exercise into new views which may inform future analysis of the Egypto-Sudanic data, failing the identification of a meaningful macro-level relationship based in shared migration history. For example, review of the isoglosses presented in Section 3 offered numerous examples of two-way divisions separating northern dialects of the Egypto-Sudanic area from southern, but the precise positioning of isoglosses within this general pattern was observed to frequently shift on the basis of individual features, and to display a number of variable exponences. Can

a technique like Historical Glottometry offer additional, informative perspective which might lead to clarity in the comprehension and description of cases like these?

The tradition of quantitative dialectometry of which Historical Glottometry is a part is not alien to the Arabic dialectological tradition (see Behnstedt and Woidich 2005, pp. 106–35, for discussion), yet similarly has not been widely embraced by the field's practitioners—for a host of valid critiques. As an analytical tool, Historical Glottometry joins these approaches in the effort to produce a linguistically meaningful yet condensed mathematical summation of data researchers "already know" (Daniels et al. 2019, p. 124) but which is copious and complex enough to defy ready intra-set comparability without transformation. Historical Glottometry accomplishes this via the production of two related values, each attending to a different aspect of linguistic classification generally agreed to hold significance in the field: "cohesiveness," a measure of the proportion of relevant isoglosses held in common by the members of a potential classificatory unit, and "subgroupiness," a measure of the number of isoglosses unique to the members of a proposed grouping. For a fully elaborated discussion of these measures' conception and justifications, see Kalyan and François (2018, pp. 68–71); to summarize, cohesiveness is calculated as the number of innovative isoglosses shared by all members of a proposed grouping divided by the total number of isoglosses attested by any member of the group, thus taking into account both the quantity of isoglosses supporting a group and those conflicting with it; subgroupiness is derived by multiplying a grouping's cohesiveness value by the number of exclusively shared isoglosses unique to the members of that group, thereby recognizing the importance of distinctiveness to most models of dialect classification while weighting the value of such features to reflect their position in broader dialectological context.

To apply this approach and calculate cohesiveness and subgroupiness scores for the array of dialect linkages attested by the Egypto-Sudanic data, I have accumulated the combined set of isoglosses considered in Section 3, focusing on those features which are clearly identifiable as innovative which are attested in a minimum of two varieties, and determined their presence/absence in each of the six dialects sampled. This tabulation of 342 values (6 dialects × 54 isoglosses) is included in Appendix A. I then calculated cohesiveness and subgroupiness scores for each of the subgroupings attested in the collected data, summarized in Figure 1, below. Cohesiveness scores are shaded in black, subgroupiness scores in white. Acronyms identify the composition of each classificatory group supported in the data by at least one exclusively shared feature (e.g., CBQK is a group consisting of the dialects of Cairo, Qift, il-Biʿeṛāt and Khartoum; KSN those of Khartoum, the Šukriyya and Nigeria, etc.).

The first and most evident take-away from the Historical Glottometry analysis of the Egypto-Sudanic dialects is that two potential classificatory units stand out as particularly strong and "subgroupy": these are CQB and KSN—in other words, the three dialects of the Egyptian area taken as a group, and the three of the Sudanic. Not only do these respective sets of varieties share a meaningful proportion of their total features, but they also display a high number of exclusively shared features not identifiable outside the confines of the grouping (9 for each group). This geographical polarization of the dialect region, divided into groups representing the three northernmost and the three southernmost varieties of the sample, is replicated in the four-way groupings that emerge, which, with one (weaker) exception, consist of all three members of CQB or KSN in addition to one member of the other triad—the substantial diminution of both cohesiveness and subgroupiness incurred via such additions, though, reinforces the interpretation of the Egyptian/Sudanic split as a primary faultline in the data, rather than a single stage in a more gradual fading between northern and southern features. Indeed, turning to pairwise relationships, we similarly see that, excepting two linkages involving Nigerian, all other two-dialect groupings attested are internal to the CQB or KSN headings. Despite high cohesion, these are on the whole substantially weaker than either of the three-way groupings in terms of subgroupiness. Even the most significant pairing, KS, emerges as notably less strong than its superordinate KSN. These are key indications that the pan-Egyptian and pan-Sudanic dialect entities

KSN and CQB represent are not illusory extracts of a gradated continuum, nor secondary linkages of core plus orbit, but rather demonstrable, classificatorily significant units across which multiple distinctive, innovative features obtain. Historical Glottometry, then, has offered incisive, actionable insight to be further pursued in reshaping understandings of what dialect classifications may succeed the macro-level Egypto-Sudanic hypothesis: a scenario under which an Egyptian and a Sudanic group, though sharing a few broad characteristics and more numerous partially cross-cutting trends, stand out as robustly and independently definable in the absence of overarching linkage.

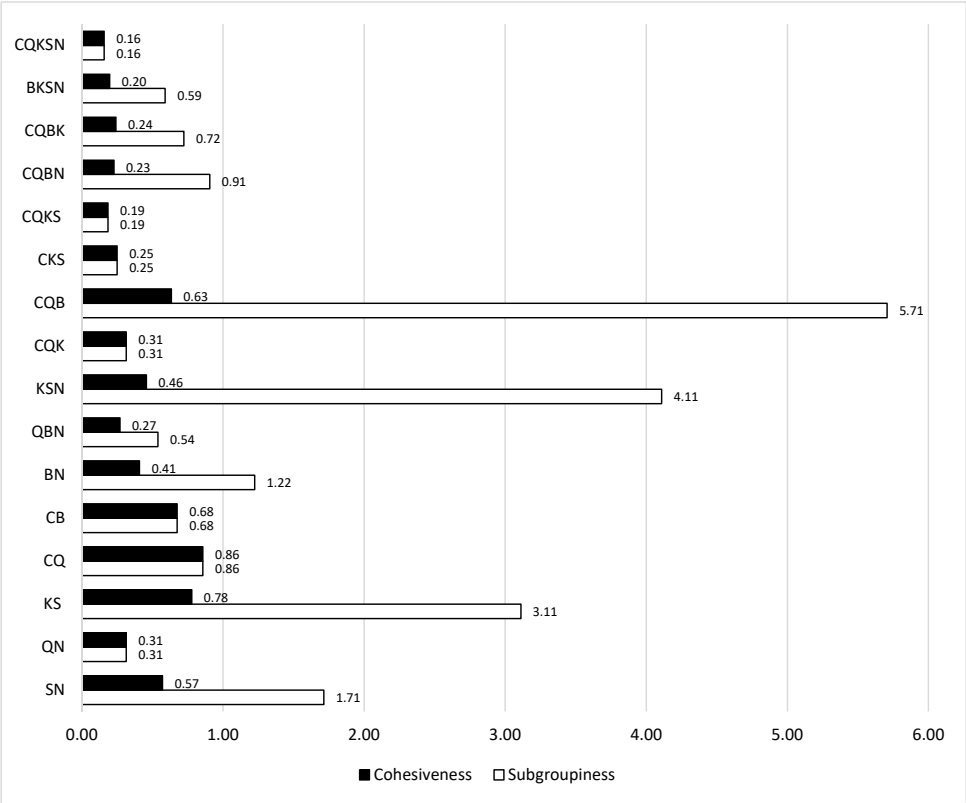

Figure 1. Historical Glottometry Scores of Attested Egypto-Sudanic Dialect Subgroupings.

The exception to this pattern is, as mentioned, Nigerian, which the four-way grouping CQBN shows to pattern more closely to the body of Egyptian varieties than does any other Sudanic dialect sampled; the still stronger pairwise grouping BN shows this affinity to exist more precisely with the dialects of Upper Egypt, particularly those represented by Bʿēri. This finding is notable in light of the well-described linguistic and demographic linkages between Upper Egypt and the Western Sudanic area detailed by Owens (1993b, 2003), including isoglosses beyond those considered here and a set of thoroughly sketched population movements from north to south occurring most prominently in the years leading up to 1500. The significance is thus twofold, serving as: (a) corroboration (admittedly circumstantial) of Historical Glottometry's compatibility with otherwise-derived understandings of the region's linguistic interrelationships, and (b) a reminder that the impact of migration events and shared genealogical history is not to be ignored in the interpretation of linguistic classificatory relationships. This last, then, underlines the urgency of the question of how a linguistically meaningful Egypto-Sudanic classification at large, girded by similar nonlinguistic factors, could fail to emerge in our broader analysis?

5. Conclusions

Given that population movements and shared genealogical histories of speech communities can and do influence dialect development in meaningful ways, it is understandable that these factors were utilized as proxy for genuine linguistic data in initial postulations of a classificatory affinity between Egyptian and Sudanic varieties of Arabic. These were generated at a time when such data were not forthcoming, and much of both areas remained dialectological *terra incognita* to Western Arabist scholarship. The window of usefulness for such stand-ins, though, is past. Existing descriptive works treating dialects of the Egypto-Sudanic region, though limited, are shown here to be sufficient to transition beyond this stage to engage in genuine linguistic evaluation of at least a subset of the varieties in question: their similarities, their differences, and their interrelationships. Yet, until this point, such has not been attempted in more than cursory fashion. Instead, once-preliminary assumptions based on nonlinguistic details were carried forward as received linguistic interpretation—fed by confirmation bias to the casual dialectological observer in the form of salient shared retentions, participation of dialects in broad areal trends, and instances of convergence via matter- and pattern-based borrowing or, conceivably, parallel development.

The present inquiry has demonstrated that, when faced with concerted linguistic investigation, little meaningful support can be found for the proposal that contemporary dialects of the Egyptian and Sudanic zones together constitute a viable classificatory grouping that reflects a common linguistic input carried by founding migrations of Arabic-speaking populations from the former region the latter. The study is not without its limitations—its relatively narrow sampling and inattention to lexical variables, to start—but regardless has advanced a fairly unambiguous conclusion: that the historical demographic and genealogical ties seen to bind the area's Arabic-speaking communities in human relation to one another do not similarly define the relationships of those communities' dialects. Instead, these appear to pattern in discrete Egyptian and Sudanic blocs without significant superordinate connection, as occasionally disrupted by point-specific linkages and recent convergences contravening their general independence.

How is this contradiction between two dimensions of connectedness, the demographic-historical and the linguistic, to be reconciled? The first response of many will, perhaps, be to question the veracity of one set of understandings or the other. The linguistic findings of this study are, of course, not beyond reproach, and room similarly exists to interrogate historical conceptions of the Arabicization of Egypt and the Sudan from initial Muslim conquests (Booth 2013) to consolidation under the early Caliphate (Power 2012) to southward migrations of the medieval period (Spaulding 2000). But prior to—or, perhaps, in conjunction with—such, I would call for a pause. As dialectologists, we should not miss the opportunity to reflect on the assumptions and theoretical stances that have led us to such a conflicting position, and to ask whether the more fruitful questioning is that of the data or that of the frames through which we are wont to interpret it.

Much remains unknown about today's Arabic dialects' collective linguistic past, and much of that unknown is undoubtedly relevant to the sound comprehension and interpretation of their dialectological present. We must not, however, allow pursuit of those unknowns to become a preoccupation that unduly limits our imagination of what dialect classification strives to describe, or how the linguistic reality it represents enters into being. The amount to be learned from painstaking and revelatory excavation of the dialectal foundation laid by the earliest and subsequent waves of Arab migration and expansion is enormous—but it will never constitute a complete account. Arabic's arrival and establishment beyond its pre-Islamic environs via the physical movement of peoples is an obvious, massive watershed; all the same, myopic focus on the legacy of this era risks an artificial confidence that "by the 10th century [or perhaps, in the Egypto-Sudanic case, the fourteenth] dialectal areas were already shaped" (Abboud-Haggar 2006, p. 620).

The linguistic traces of past movements and demographic linkages are often long-lasting and significant—but they are not guaranteed to be present, and nor are they, when present, indelible. Contemporary sociolinguistic scholarship (Trudgill 1986; Al-Wer 2007) has repeatedly shown language use in the wake of demographic upheaval to be highly variable and diffuse, often so much so as to defy stable dialectological description. Similar states have been demonstrated for the Caribbean Englishes of Le Le Page and Tabouret-Keller (1985) and, at greater time-depth, in the case of Indo-European and Proto-Greek (Garrett 2006), to the extent that the *prima materia* of future dialect formations is reduced to classificatory nondistinctness. Moreover, as much as a dialect linkage is a product of its input, it is in equal or greater proportion an emergent entity which manifests over time, the earlier connectivities and commonalities shaped by its social and interactional past fully prone to being remolded and over-written—or occasionally, as we may be witnessing in the instances of syntactic convergence covered above, created anew as speakers' present dictates. As Behnstedt and Woidich remind their colleagues following discussion of the development of the Egyptian dialect area, "[in] the historical evaluation of Arabic dialect phenomena, one cannot always assume that a feature was introduced from the original home of the speakers and implanted somewhere. One should also entertain the possibility that a given feature is the result of dialect mixing and dialect contact which eventually led to new dialects and new dialect areas" (Behnstedt and Woidich 2018, p. 95). My hope is that the present investigation of Egyptian and Sudanic Arabics serves to answer and emphasize this timely and pressing call.

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Appendix A

Table A1. Values for Historical Glottometry Analysis of Arabic Dialects of the Egypto-Sudanic Region.

Innovation [1]	Cairo	Qift	Bʿēri	Khartoum	Šukriyya	Nigeria
*/g/ > /ɟ/	−	−	+	+	+	+
*/g/ > /ʛ/	−	+	−	−	−	+
*/ð/ > /ḍ/	−	−	−	+	+	+
*/θ, ð, ḍ/ > /t, d, ḍ/	+	+	+	+	+	+
*/aw, ay/ > /ē, ō/	+	+	+	+	+	+
/a/ > /e/ / _#	−	+	+	−	−	+
/i, u/ >Ø / VC_CV [-str.]	+	+	+	+	+	−
$\overline{V}$ > V / [-str.]	+	+	+	−	−	−
*niħnā > *iħnā	+	+	+	−	−	−
*huwa, hiya > *hū, hī	−	−	+	+	+	+
*huwa, hiya > *huwwa, hiyya	+	+	+	−	−	−
*hum > *humma	+	+	+	−	−	+
*hum > *hun	−	−	−	+	+	−

Table A1. *Cont.*

Innovation [1]	Cairo	Qift	B·ēri	Khartoum	Šukriyya	Nigeria
*hinna > *hin	−	−	−	+	+	−
loss of f.pl agr.	+	+	−	+	−	−
*-hu > *-a	−	−	+	−	−	+
*-hu > *-u	+	−	−	+	+	−
*-ki > *-ik	+	+	−	+	+	−
*/h/ > /h ~ Ø/ in 3OBJ PROs	−	−	−	+	+	+
*/a/ > /i/ in 2SBJ PROs	+	+	+	+	+	+
*/nt/ > /tt/ in 2SBJ PROs	−	−	−	+	+	−
leveled */ð/ in DEMs	+	+	+	+	+	+
V-alternating DEM gender	+	+	+	+	+	+
*dō/ēlāk distal pl. DEMs	−	−	−	+	+	+
*dū/ēk distal pl. DEMs	+	+	+	+	−	−
DEM < *DEM + PRO	+	+	+	−	−	−
c.pl *dōl	+	+	−	−	−	−
REL *illī	+	+	+	−	−	−
REL *al-	−	−	−	+	+	+
*mīn 'who?'	+	+	+	−	−	−
*minu 'who?'	−	−	−	+	+	+
*ēh 'what?'	+	+	+	−	−	−
*šinu 'what?'	−	−	−	+	+	+
*anhu 'which?'	+	+	+	−	−	+
*yātu 'which?'	−	−	−	+	+	+
1.sg PRF *-tu > *-t	+	+	+	+	+	+
1.sg PRF *-t > *ˈ_(-t)	−	−	−	−	+	+
3.m.pl *-u > *-o/-aw	−	+	+	−	−	+
3.m.pl *-ū- > *-ō-	−	−	+	+	+	+
IPRF *Ci-	+	+	+	−	−	+
IPRF *Ca-	−	−	−	+	+	+
IPRF *a-, n- > *n-, n-…-u	−	−	+	−	−	+
IMP *i-	+	+	+	−	−	−
IMP *a-	−	−	−	+	+	+
PASS *t-	+	+	+	+	−	−
PASS *n-	−	−	−	−	+	+
CNT *bi-	+	+	−	+	+	+
CNT *ʕammāl	+	−	+	−	−	−
FUT *rāħ	+	+	+	+	−	−
verbal NEG *mā …-š	+	+	+	−	−	−
distinct nominal NEG	+	+	+	−	−	+
GEN *bitāʕ	+	+	+	+	+	−
GEN *ħagg	−	−	−	+	+	−
GEN *hūl	−	−	−	−	+	+
GEN *hana	−	−	+	−	−	+
NOUN DEM order	+	+	+	+	+	+
in situ WH-questions	+	+	+	+	+	+

[1] As necessary, innovations have been reformulated from their in-text descriptions to match Historical Glottometry's sole focus on innovations rather than retentions; only those innovations attested in 2+ varieties are listed, and an innovation is considered present in a given dialect even if its occurrence there is variable. Innovations are presented in the order they are discussed in the article text.

Notes

1 Though see Brustad (2000), for a broad-based comparative analysis.

2 Development of a fronted realization [ɟ] is likely to be quite old, potentially described by Sibawayh as early as the eighth century (cf. Zaborski 2007); this remains, however, innovative relative to the realization *[g] reconstructable with reference to several modern Egyptian and Peninsular dialects, as well as Semitic more broadly.

3 For further discussion of these and other exponents and their diachronic sources, see Eksell Eksell Harning (1980) and Leddy-Cecere (2018).

[4] Sporadic */ð/ (> */ð̣/?) > /ḍ/ in Sudanic varieties, but not Egyptian ones, also indicates that more general loss of interdentals in those dialects likely post-dates arrival of their speakers to Sudanic territory.

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