

The Arabic Origins of "Animal Terms" in English, German, and French: A Lexical Root Theory Approach

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Abstract

This paper examines the Arabic cognates and/or origins of *animal* terms in English, German, French, Latin, and Greek from a lexical root theory perspective. The data consists of about 200 *animal* terms such as *cow*, *sheep*, *horse*, *lion*, *swine*, *bird*, *duck*, *snake*, and so on. The results show that all such words are true cognates in Arabic and such languages, with the same or similar forms and meanings. The different forms amongst such words are shown to be due to natural and plausible causes of phonetic, morphological and semantic change. For example, English *sheep* comes from Arabic *kabsh* 'male sheep' where /k & sh/ merged into /sh/. Similarly, Latin *bov*, Greek *bous*, French *beef*, English *cow* (*bull*, *bullock*), German *Kuh*, Lithuania *karve*, and Church Old Slavonic *krava* derive from Arabic *baqara(t)* 'cow' via different routes, including reordering, shortening, and turning /q/ into /k & s/ (or merging it with /b/ into /v & w/), and /r/ into /l or Ø/. This implies that Arabic, English and so on belong not only to the same family but also to the same language, contrary to traditional Comparative Method claims. Due to their phonetic complexity, huge lexical variety and multiplicity (e.g., 500+ *lion* words), Arabic words are the original source from which they emanated. This proves the adequacy of the lexical root theory according to which Arabic, English, German, French, Latin, and

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Greek are dialects of the same language with the first being the origin.

Keywords: Animal terms, Arabic, English, German, French, Latin, Greek, historical linguistics, lexical root theory

1. Introduction

The genetic relationship between Arabic, English, German, French, Latin, Greek and Sanskrit has been firmly established in a good number of papers (Jassem 2012a-f, 2013a-f), which cover the three main areas of language study: phonetics/phonology, morphology/grammar, and semantics/lexis. At the lexical level, the first study was Jassem (2012a: 225-41), which showed that numeral words from *one* to *trillion* in Arabic, English, German, French, Latin, Greek and Sanskrit share the same or similar forms and meanings in general, forming true cognates with Arabic as their end origin. For example, *three* (*third*, *thirty*, *trio*, *tri*, *tertiary*, *trinity*, *Trinitarian*) derives from a 'reduced' Arabic *thalaath* (*talaat* in Damascus Arabic (Jassem 1993, 1994a-b)) 'three' through the change of /th & l/ to /t & r/ each. This led to the rejection of the claims of the comparative 'historical linguistics' method which classifies Arabic, on the one hand, and English, German, French, and so on, on the other, as members of different language families (Bergs and Brinton 2012; Algeo 2010; Crystal 2010: 302; Campbell 2006: 190-191; Crowley 1997: 22-25, 110-111; Pyles and Algeo 1993: 61-94). Therefore, he proposed the lexical root theory to account for the genetic relationships between Arabic and English, in particular, and all (Indo-)European languages in general for three main reasons: namely, (a) geographical continuity and/or proximity between their homelands, (b) persistent cultural interaction and similarity between their peoples over the ages, and, above all, (c) linguistic

similarity between Arabic and such languages (see Jassem 2013b for further detail).

All subsequent studies gave a decisive and clear-cut linguistic evidence. Jassem (2012b: 59-71) traced the Arabic origins of common contextualized biblical or religious terms such as *Hallelujah*, *Christianity*, *Judaism*, *worship*, *bead*, and so on. For instance, *hallelujah* resulted from a reversal and reduction of the Arabic phrase *la ilaha illa Allah* '(There's) no god but Allah (God)'. That is, *Halle* is *Allah* in reverse, *lu* and *la* 'not' (pronounced *lo* also) are the same, *jah* is a shortening of both *ilaaha* 'god' and *illa* 'except' which sound almost the same. Jassem (2013d: 126-51) described the Arabic cognates and origins of English, German, and French *water* and *sea* terms like *water*, *hydro*, *aqua*, *sea*, *ocean*, *ship*, *navy*, *fish*, all of which derive from Arabic sources. Jassem (2013e: 631-51) traced back the Arabic origins of *air* and *fire* terms in English and such languages. Finally, Jassem (2013f) traced back the Arabic origins of *celestial* (e.g., sky, star, sun) and *terrestrial* (e.g., earth, mountain, hill) terms in English and such languages.

At the morphological level, three papers have appeared. Jassem (2012f) showed that inflectional 'plural and gender' markers as in *oxen*, *girls*, *Paula*, *Charlotte* formed true cognates in all. Similarly, Jassem (2013a: 48-72) demonstrated the Arabic origins of English, German, and French derivational morphemes as in *activity*, *activate*, *determine*, *whiten*, whose identical Arabic cognates are *ta* (e.g., *salaamat(i)* 'safety', *takallam* 'talk') and *an* (e.g., *wardan* 'bloom'). Finally, Jassem (2013b: 234-48) dealt with the Arabic origins of negative particles and words like *in-/no*, *-less*, and *-mal* in English, French and so on.

At the grammatical level, three papers have been conducted so far. Jassem (2012c: 83-103) found that personal pronouns in Arabic, English, German, French, Latin and Greek form true cognates, which descend from Arabic directly. For example, *you*

(*ge* in Old English; *Sie* in German) all come from Arabic *iaka* 'you' where /k/ changed to /g (& s)/ and then to /y/; Old English *thine* derives from Arabic *anta* 'you' via reversal and the change of /t/ to /th/ whereas *thou* and *thee*, French *tu*, and German *du* come from the affixed form of the same Arabic pronoun *-ta* 'you'. Jassem (2012d: 323-59) examined determiners such as *the*, *this*, *a/an*, *both*, *some*, *all* in English, German, French, and Latin which were all found to have identical Arabic cognates. For instance, *the*/*this* derive from Arabic *tha/thih* 'this' where /h/ became /s/. Jassem (2012e: 185-96) established the Arabic origins of verb *to be* forms in all such languages. For example, *is/was* (Old English *wesan* 'be'; German *sein*; French *etre*, *es*, *suis*) descend from Arabic *kawana* (*kaana*) 'be' where /k/ became /s/.

At the phonological level, Jassem (2013c) outlined the English, German, French, Latin, and Greek cognates of Arabic back consonants: i.e., the glottals, pharyngeals, uvulars, and velars. For example, *church* (*kirk*, *ecclesiastical*) all come from Arabic *kanees(at)* where /k & n/ became /ch & r (l)/ each. In all papers, the phonetic analysis is central, of course.

In all the above studies, the lexical root theory was used as a theoretical framework, which is so called because of employing the lexical (consonantal) root in examining genetic relationships between words like the derivation of *overwritten* from *write* (or simply *wrt*). The main reason for that is because the consonantal root carries and determines the basic meaning of the word regardless of its affixation such as *overwrite*, *writing*. Historically speaking, classical Arabic dictionaries (e.g., Ibn Manzoor 1974, 2013) used consonantal roots in listing lexical entries, a practice first founded by Alkhaleel (Jassem 2012e).

The lexical root theory is structurally simple, which comprises a theoretical construct, hypothesis or principle and five practical procedures of analysis. The principle states that Arabic

and English as well as the so-called Indo-European languages are not only genetically related to but also are directly descended from one language, which may be Arabic in the end. In fact, it claims in its strongest version that they are all dialects of the same language, whose differences are due to natural and plausible causes of linguistic change. The applied procedures of analysis are (i) methodological, (ii) lexicological, (iii) linguistic, (iv) relational, and (v) comparative/historical. As all have been reasonably described in the above studies (Jassem 2012a-f, 2013a-f), a brief summary will suffice here.

At the outset, the methodological procedure concerns data collection, selection, and statistical analysis. Apart from loan words, all language words, affixes, and phonemes are amenable to investigation, and not only the core vocabulary as is the common practice in the field (Crystal 2010; Pyles and Algeo 1993: 76-77; Crowley 1997: 88-90, 175-178). However, data selection is practically inevitable for which the most appropriate way would be to use semantic fields such as the present and the above topics. Cumulative evidence from such findings will aid in formulating rules and laws of language change at a later stage (cf. Jassem 2012f, 2013a-f). The statistical analysis employs the percentage formula (see 2.2 below).

Secondly, the lexicological procedure is the initial step in the analysis. Words are analyzed by (i) deleting affixes (e.g., *overwritten* → *write*), (ii) using primarily consonantal roots (e.g., *write* → *wrt*), and (iii) search for correspondence in meaning on the basis of word etymologies and origins as a guide (e.g., Harper 2012), to be used with discretion, though.

Thirdly, the linguistic procedure handles the analysis of the phonetic, morphological, grammatical and semantic structures and differences between words. The phonetic analysis examines sound changes within and across categories. In particular, consonants may change their place and manner of articulation as

well as voicing. At the level of place, bilabial consonants ↔ labio-dental ↔ dental ↔ alveolar ↔ palatal ↔ velar ↔ uvular ↔ pharyngeal ↔ glottal (where ↔ signals change in both directions); at the level of manner, stops ↔ fricatives ↔ affricates ↔ nasals ↔ laterals ↔ approximants; and at the level of voice, voiced consonants ↔ voiceless. Similarly, vowels may change as well. The three basic long Arabic vowels /a: (aa), i: (ee), & u: (oo)/ (and their short versions besides the two diphthongs /ai (ay)/ and /au (aw)/ which are a kind of /i:/ and /u:/ respectively), may change according to (i) tongue part (e.g., front ↔ centre ↔ back), (ii) tongue height (e.g., high ↔ mid ↔ low), (iii) length (e.g., long ↔ short), and (iv) lip shape (e.g., round ↔ unround). These have additional allophones or variants which do not change meaning (see Jassem 2013). Although English has a larger number of about 20 vowels, which vary from accent to accent (Roach 2009; Celce-Murcia et al 2010), they can still be treated within this framework. Furthermore, vowels are marginal in significance which may be totally ignored because the limited nature of the changes do not affect the final semantic result at all. In fact, the functions of vowels are phonetic like linking consonants to each other in speech and grammatical such as indicating tense, word class, and number (e.g., *sing, sang, sung, song; man/men*).

Sound changes result in processes like assimilation, dissimilation, deletion, merger, insertion, split, syllable loss, resyllabification, consonant cluster reduction or creation and so on. In addition, sound change may operate in a multi-directional, cyclic, and lexically-diffuse or irregular manner (see 4. below). The criterion in all the changes is naturalness and plausibility; for example, the change from /k/ (e.g., *kirk, ecclesiastic*), a voiceless velar stop, to /ch/ (e.g., *church*), a voiceless palatal affricate, is more natural than that to /s/, a voiceless alveolar fricative, as the

first two are closer by place and manner (Jassem 2012b); the last is plausible, though (Jassem 2013c).

Some overlap exists between the morphological and grammatical analyses. The former examines the inflectional and derivational aspects of words in general (Jassem 2012f, 2013a-b); the latter handles grammatical classes, categories, and functions like pronouns, nouns, verbs, and case (Jassem 2012c-d). Since their influence on the basic meaning of the lexical root is marginal, they may be ignored altogether.

As for the semantic analysis, it looks at meaning relationships between words, including lexical stability, multiplicity, convergence, divergence, shift, split, change, and variability. Stability means that word meanings have remained constant. Multiplicity denotes that words might have two or more meanings. Convergence means two or more formally and semantically similar Arabic words might have yielded the same cognate in English. Divergence signals that words became opposites or antonyms of one another. Shift indicates that words switched their sense within the same field. Lexical split means a word led to two different cognates. Change means a new meaning developed. Variability signals the presence of two or more variants for the same word.

Fourthly, the relational procedure accounts for the relationship between form and meaning from three perspectives: formal and semantic similarity (e.g., *three*, *third*, *tertiary* and Arabic *thalath* 'three' (Damascus Arabic *talaat* (see Jassem 2012a)), formal similarity and semantic difference (e.g., *ship* and *sheep* (see Jassem 2012b), and formal difference and semantic similarity (e.g., *quarter*, *quadrant*, *cadre* and Arabic *qeeraaT* '1/4' (Jassem 2012a)).

Finally, the comparative historical analysis compares every word in English in particular and German, French, Greek, and Latin in general with its Arabic counterpart phonetically,

morphologically, and semantically on the basis of its history and development in English (e.g., Harper 2012; Pyles and Algeo 1993) and Arabic (e.g., Ibn Manzour 2013; Altha3aalibi 2011; Ibn Seedah 1996) besides the author's knowledge of both Arabic as a first language and English as a second language.

In this paper, the lexical root theory will be used as a theoretical framework for the investigation of the Arabic genetic origins and descent of *animal* terms in English, German, French, Latin, and Greek. It has five sections: an introduction, research methods, results, a discussion, and a conclusion.

2. Research Methods

2.1 The Data

The data consists of 200 *animal* words or so, selected on the basis of the author's knowledge of their frequency and use and English thesauri. Animal terms relate to *cattle* (cow, sheep, goat), *chivalry* (horse), *canines* (dog, lion), *fish* (eel), *avians* (duck, bird), *rodents* (rat, mouse), *reptiles* (snake, turtle), and *insects* (bee). They have been arranged alphabetically within each section for quick reference together with brief linguistic notes in (3.) below. All etymological references to English below are for Harper (2012) and to Arabic for Altha3aalibi (2011: 179-204, 237-250), Ibn Seedah (1996 (6 & 8), Ibn Khaalawaih (2013), and Ibn Manzoor (2013).

The data is transcribed by using normal spelling. For exotic Arabic sounds, however, certain symbols were used- viz., /2 & 3/ for the voiceless and voiced pharyngeal fricatives respectively, capital letters for the emphatic counterparts of plain consonants /t, d, th, & s/, /kh & gh/ for the voiceless and voiced velar fricatives each, and /' for the glottal stop (Jassem 2013c).

2.2 Data Analysis

The data will be analyzed theoretically and statistically. The above-surveyed lexical root theory is used as the theoretical framework. The statistical analysis employs the percentage formula, obtained by dividing the number of cognates over the total number of investigated words multiplied by a 100. For example, suppose the total number of investigated words is 100, of which 95 are true cognates. Calculating the percentage of cognates is obtained thus: $95/100 = 0.95 \times 100 = 95\%$. Finally, the results are checked against Cowley's (1997: 173, 182) formula to determine whether such words belong to the same language or to languages of the same family (for a survey, see Jassem 2012a-b).

3. Results

3.1 Cattle Terms (for Cows, Sheep, and Goats)

Animal (*anima, animate, animation, inanimate*) via Latin *anima/animus* 'breath, soul, a current of air' and Greek *anemos* 'wind' from Arabic *naseem, nasma(t)* 'air, person' where /s/ merged into /n or m/, or *ni3am, an3aam* (pl.) 'animals' via reordering, /3/-loss and /l/-insertion. (Cf. **Man** (*human, humanity*) from Arabic *nama, 'anaam* (pl.) 'child, humans, men' via reversal and turning /' into /h/ in *human* or from *'insaan* 'human' where /' became /h/ while /s & n/ merged into /m/; **mean** from Arabic *maheen* 'despised' via /h/-deletion or *ma3na* 'meaning' via /3/-loss; **mine** (**undermine**) from *manjam* where /j/ became /y/, *ma3een* 'resource, container, endless', *manee3* 'strong' via /3/-loss, or *ana* 'me, I' via /m/-split from /n/ (Jassem 2012d)).

Beef (*bovine, buffalo*) from Arabic *baqar(at)* 'cow' via shortening and turning /q/ into /f (v)/ while /r/ into /n/ in *bovine* and /l/ in *buffalo*.

Bellow from Arabic *bala3* 'swallow' via /3/-deletion and lexical shift or *baa3* 'sound of sheep' via /l/-insertion and the change of /3/ to /w/.

Buffalo (*beef*) from Arabic *baqar(at)* where /q & r/ turned into /f & l/ each.

Bull (*bullock*) from a reduced Arabic *baqar(at)* 'cow' (*ba'ar(at)*) in Damascus Arabic (Jassem 1993, 1994) via /q/-deletion and turning /r/ into /l/, *ibl* 'camels' via reordering and semantic shift, or *ba3l* 'husband' via /3/-deletion.

Bullock (*bull*) from Arabic *baqar(at)* 'cow' via reordering and turning /q & r/ into /k & l/ each.

Butter from Arabic *zubda(t)* 'butter' via reordering, merging /z & d/ into /t/, and /r/-insertion.

Calf from Arabic *khilfa(t)*, *khilf* 'a female camel' via lexical shift and turning /kh/ into /k/ or *khaaroof* 'lamb, sheep, calf' via lexical shift and turning /kh & r/ into /k & l/ each.

Cattle from Arabic *shiliat* or *thallat* 'group of animals' through reordering and changing /sh & th/ to /k/, *qaTee3*, *quT3aan* (pl.) 'cattle' via /3/-loss and turning /q, T, & n/ into /k, t, & l/ in that order.

Cheese from Arabic *qishda(t)*, *qasheed* 'top coagulated milk surface' through lexical shift, merging /q & sh/ into /sh/, and turning /d/ into /s/.

Churn from Arabic *shanna*, *shaneen* 'shake yogurt to separate butter from it; churn' where /n/ became /r/.

Cow (Greek *bous*, Latin *bov*, French *beef*, Lithuanian *karve*, Church Old Slavonic *krava*, German *Kuh*) from Arabic *baqara* 'cow' through reordering and the evolution of /q & b/ into /k & v/ in Lithuanian, /s & k/ in Greek and English, /v & w/ in Latin and English, besides /r/-loss in English (cf. *3ijl*, *3ujool* (pl.) 'bull' in which /3/ was deleted or merged with /j/ into /k/ whereas /l/ became /w/, and *khuwaa'*, *khuwaar* 'sound of cows' where /kh/ became /k/ (cf. *coward*,

cowardice, cower from Arabic *khawwaar, khuwaar* 'coward, cowardice' in which /kh/ became /k/ whereas /d/ split from /r/; **cow** 'intimidate' from Arabic *khawf* 'fear' where /kh/ became /k/ while /w & f/ merged into /w/ or *khuwaar* 'fear' via /r/-loss).

Cream from Arabic *karma(t)* 'best part of milk'.

Dairy from Arabic *darr* 'milk'.

Ejaculate (*ejaculation*) from Arabic *shakhkha(t), shikhaakh* (n) 'urinate' where /sh & kh/ changed to /j & k/ besides /l/-insertion or *shakhal* 'of water, to drip from a sieve or cloth' where /sh & kh/ changed to /j & k/ each.

Emulsifier (*emulsification, milk*) from Arabic *maSl* 'cheese and yogurt liquid' via reordering and changing /S/ to /s/ (see **milk** below).

Ewe (*ovine*) via Latin *ovis* and Greek *ois* 'sheep' from Arabic *shaa(t/h), shiyaah* (pl.) 'sheep' via reversal and the merger of /sh & h/ into /w/ (cf. **way** from Arabic *wajh* 'face, way' where /j & h/ merged into /y/ (Jassem 2013c)).

Fibre (*fibrous*) from Arabic *zabr* 'fine wool, hair, feather' or *wabr* 'fine wool' where /z & w/ changed to /f/.

Foul from Arabic *ba3r* 'foul' where /b, 3, & r/ became /f, Ø, & l/ in that order or *bawl* 'urine' where /b/ changed to /f/.

Fur from Arabic *farw(at)* 'fur, wool'.

Gazelle from Arabic loan *ghazaal* 'deer' in which /gh/ became /g/.

Giraffe from Arabic loan *zaraafa(t)* 'giraffe' in which /z/ became /j/.

Goat (*kid, tragedy*) from Arabic *jadee* 'baby male goat' in which /j & d/ passed into /g & t/ respectively.

Hair from Arabic *sha3r* 'hair' via /sh & 3/-merger into /h/.

Herd(sman) from Arabic *3arra(t)/3eer* 'herd' in which /3 & t/ became /h & d/ each or from *raa3i(at)* 'shepherd, grazing' via reordering and turning /3 & t/ into /h & d/ each.

Hide from Arabic *jild* 'skin' where /j/ passed into /h/ besides /l/-loss (cf. *2aad* 'keep away, avoid' in which /2/ became /h/).

Horn from Arabic *qarn* 'horn' in which /q/ became /h/ (cf. *crown*, *coronation*, *coroner* 'horn' where /q/ became /k/ (Jassem 2013c)).

Italy (*Italian*) via Latin *vitalus* 'bull' from Arabic *3ijl*, *3ujool*, *3ijlaan* (pl.) 'bull' via lexical shift and turning /3/ into /v & Ø/ and /j/ into /t/ (cf. **veal** below).

Kid (*goat*) from Arabic *jadee* 'baby male goat' in which /j/ passed into /k/ (cf. *child(ren)* from *kid* in which /k/ became /ch/ whereas /l/ split from /d/).

Lamb from Arabic *laboon* 'milk-giving, milkling' via reordering, changing /n/ to /m/, and lexical shift, *2aml* 'baby sheep' via reordering, /2/-loss and /b/-insertion, *buhm* 'baby sheep' via reversal, /h/-loss and /l/-insertion, or *hulaama(t)* 'lean sheep' via /h/-loss and /l/-insertion (cf. **lamp** from Arabic *lama3(an)* 'shine' via /3/-deletion and /p/-insertion; and **lame** from a reversed Arabic *maal*, *maayel* 'incline, inclined, lame' (Jassem 2013d)).

Lipid from Arabic *2aleeb(aat)* 'milk' via /2/-loss, *laban* '(processed) milk' where /n/ became /d/, *libaa* 'birth delivery milk' via /d/-insertion, or *zubda(t)* 'butter' where /z/ turned into /l/.

Mammal (*mamma*, *mum*, *mummy*, *ma*) from Arabic *maama*, *ma* 'mother, mum' via /l/-insertion.

Masticate (*mastication*) from Arabic *maDagh(at)* 'masticate, chew' where /D/ split into /s & t/ while /gh/ became /k/, *maTTaq* 'to manipulate tongue and mouth' where /T/ split into /s & t/ and /q/ changed to /k/, or *majak(q)a* 'of aroused animals, to open and close mouth and tongue' where /j/ split into /s & t/ and /q/ became /k/.

Milk (*emulsification*) from Arabic *maSl* 'milk liquid' via reordering and changing /S/ to /k/ or *Samgh* 'birth milk' via reversal, /S & gh/-merger into /k/, and /l/-insertion.

Mutton from Arabic *Da'n* 'sheep' via reordering, /n/-split into /m & n/ and turning /D/ into /t/ or *na3jat* 'sheep' via /3/-loss, /m/-split from /n/, and /j/-merger into /t/.

Moo from Arabic *ma33a*, *maa3* 'sound of cows' via /3/-loss.

Ox (*oxen*; Old High German *Ohso*) from Arabic *3ijl*, *3ujool* (pl.) 'bull' in which /3 & j/ merged into /k/ (or /h/)/ while /l/ became /s/, *3uksh(i)* 'of cows, bread for meat and work' where /3 & k/ merged while /sh/ changed to /s/, *khaisi* 'type of (Syrian) cow' where /kh/ became /k/, *3ais* 'camel' via lexical shift and turning /3/ into /k/, or *2aashi* 'young camel' via lexical shift and turning /3 & sh/ into /k & s/.

Piss (*pass*) from a reduced Arabic *basbas* 'flow water; walk fast' or *bazz* 'of liquids, to come from the inside out' where /z/ became /s/.

Rabbit from Arabic *arnab(at)* 'rabbit' via /n & r/-merger.

Ram 'male sheep; push' from Arabic *ghanam* 'male sheep' through changing /gh/ to /r/ and /n/-merger into /m/ (cf. *qa2am* 'push, advance, attack' where /q & 2/ merged into /r/).

Regurgitate from Arabic *qarqaT* 'regurgitate, cut' where /q/ became /g/.

Ruminant (*ruminant*) from Arabic *ramma*, *ramram* 'of animals, to hay-eat' where /m/ became /n/.

Sheep (*sheepish*, *shepherd*) from Arabic *kabsh* 'adult male sheep' via /k & sh/-merger into /sh/.

Shit from Arabic *shaTTa*, *shiTaaT* (n) 'of animals, loose shit'.

Stag from Arabic *tais* 'male goat' where /s/ split from /t/ while /s/ turned into /g/.

Tail from Arabic *thail* 'tail'; /th/ changed to /t/.

Taurus from Arabic *thawr* 'male cow' in which /th/ became /t/ (cf. Spanish **mat-a-dor** from Arabic *maat a(l)-thawr* 'literally, died the bull= the Taurus or bull died', where /th/ became /d/).

Teat from Arabic *thadi* 'teats' where /th & d/ became /t & d/ each.

Udder from Arabic *Dir3, Duroo3/aDru3* (pl.) 'udder' via /3/-loss.

Unicorn (*coronation, crown, horn, corner*) from Arabic *qarn* 'horn' where /q/ became /k/ (Jassem 2013c); for *uni-*, see Jassem 2012a).

Veal (*Italy*) via Latin *vitelus*, French *videl (veau)* from Arabic *3ijl, 3ujool* (pl.) 'bull' via turning /3/ into /v/, /j/ into /t (d)/ in Latin and French, subsequent /j & d/-merger into /y (ee)/, and (lexical shift).

Venison from Arabic *3anza(t), maa3iz* (pl.) 'goat' in which /3/ turned into /v/.

Veteran (*wether*) 'old' from Arabic *maaDi* 'old, past' where /m & D/ changed to /v & t/, *farw(at)* 'fur, wool' via reordering and lexical shift, or *baiTari* 'animal doctor' where /b & T/ became /v & t/ each.

Virile (*virility*) from Arabic *dhakar* 'male (organ)' where /dh & k/ merged into /v/ while /l/ split from /r/, *i2leel, 2aleel* 'penis' via lexical shift and turning /2 & l/ into /v & l/ each, or *fa2l* 'male animal, virile' via /2 & h/-merger into /v/ and /r/-insertion.

Wether 'sheep' from Arabic *kharoof* 'young sheep' via reordering and turning /kh & f/ into /w & th/ or *wabar* 'wool' via lexical shift and turning /b/ into /th/.

Yogurt from Arabic *iqT (higT* in my dialect (Jassem 1993, 1994a, b)) 'dried yogurt' via /r/-insertion.

Zoo (*zodiac, zoology*) via Greek *zoion* 'animal' from Arabic *2aiwan* 'animal' where /2/ became /z/ (Jassem 2013f).

3.2 Chivalric (Horse) Terms

Ass from Arabic *ja2sh* 'ass' in which /j, sh & 2/ merged into /s/ or *3ees* 'camel' via /3/-loss and semantic shift (cf. Arabic *3ajuz*, *3uSS* 'coccyx, ass, back hole' where /3, j, & z/ merged into /s/, *ist* 'ass, back hole' where /t/ became /s/, and **arse** from Arabic *sharj* 'arse' in which /3/ was lost and /sh (z) & j/ merged into /s/).

Baa from Arabic *baa3* 'sound of sheep' via /3/-loss.

Bray from Arabic *baa*, *boo* 'sound of sheep and cows' via /r/-insertion or *barakh* 'sound of sheep' via /kh/-loss.

Cavalry (*cavalier*, *chivalry*) from Arabic *khail*, *khuyool* (pl.), *khaiyal* 'horse, horseman' where /kh & w/ turned into /k & v/ each.

Cayuse from Arabic *ja2sh* 'a huge male donkey' in which /j/ became /k/ while /2 & sh/ merged into /s/ or *kadeesh* 'hybrid horse, mule' where /d & sh/ merged into /s/.

Chivalry (*chivalric*, *cheval*, *chevalier*, *cavalry*) from Arabic *khail*, *khuyool* (pl.) 'horse, horses' where /kh & w/ became /ch & v/ each.

Donkey from Arabic *kand(a/ee)r* 'donkey' through reordering and /r & n/ merger, *khindeed* (*khindheedh*) 'type of horse' via reordering and changing /kh/ to /k/, *naaqat* 'she-camel' via lexical shift, reordering and turning /q & t/ into /k & d/, *ataan* 'donkey' where /t/ became /d/ for the first syllable (cf. Harper 2012).

Equine (*Equestrian*) from Arabic *2iSaana*, *2uSn*, *a2Sina(t)* (pl.) 'male horse' via /2 & S/-merger into /k/ or from *khail* 'horses' where /kh & l/ became /k & n/ each (cf. *chivalry* & *cavalry* above).

Filial (*affiliation*) via Latin *filus* 'son' from Arabi *filu* 'baby horse'.

Hee-Haw from Arabic *2aa-2aa*, *2ee-2oo* 'sound of donkey' in which /2/ became /h/.

Hey from Arabic *haa3*, *2aa* 'sound of donkey' via /h & 3/-merger into /h/.

Hoof from Arabic *khuff* 'hoof'; /kh/ became /h/.

Horse from Arabic *faras* 'female horse'; /f/ changed to /h/.

Gallop from Arabic *ghalab* 'outrun' where /gh/ became /g/.

Jack (*Jackass*) from Arabic *ja2sh* via /2 & sh/-merger into /k/.

Knight via Old English *cneht* 'boy, servant' from Arabic *khaadim* 'servant' via reordering, /kh/-split into /k & g/, and /d & m/-mutation into /t & n/ or *Saani3at* 'female servant, maker' where /S & 3/ changed to /k & g/ each.

Mare from Arabic *muhr(at)* 'young or baby horse' via /h/-loss.

Mount from Arabic *maTiya(t)* 'riding animal, horse' through /n/-split from /m/ (cf. *mount a horse* from *maTa*, *imtaTa* 'to ride'; *mate/mating* 'sexual intercourse in animals' from *maTa* or *naTTa* 'mount, jump' where /m/ split from /n/ (Jassem 2013f)).

Mule from Arabic *2imaar* 'donkey' via /2/-deletion and turning /r/ into /l/ or *baghl* 'mule' via turning /b/ into /m/ and /gh/-loss or merger into /l/ (cf. **male** from Arabic *fa2l* 'male' or *ba3l* 'husband' via changing /f & b/ into /m/ and /2 & 3/-loss or *mar*', *imri* 'male' where /r/ became /l/).

Neigh from Arabic *na3eeq* 'sound and cry of animals' or *naheeq* 'sound of donkey' via /3 & h/-loss and changing /q/ to /gh/.

Pony from Arabic *bunai*, *ibn* 'boy, son, male baby horse'.

Stallion from Arabic *Sall*, *Salool*, *SalSal*, *muSalSal* 'fast horse' where /t & n/ split from /t & l/ each, *Safoon/Safen* 'horse' where /f/ became /t/ while /l/ split from /n/, *Saldam* 'strong horse' via reordering and turning /S, d, & m/ into /s, t, & n/, *Saql(awi)* 'horse' where /S & q/ became /s & t/ each and /n/ split from /l/, or *2iSaam* 'male horse' in which /2 & S/

merged into /s/ from which /t/ split while /l/ split from /n/ (cf. *equestrian* above).

Steed from Arabic *jawaad*, *jiyaad* (pl.) 'horse' in which /j/ split into /s & t/ (cf. *stead* from Arabic *Sahwat* 'horse back' where /S & h/ merged into /s/ while /t/ became /d/).

Swirl from Arabic *Sal(eel)*, *Saheel* 'to sound, to neigh' where /l/ split into /r & l/.

Whinny (*whine*) from Arabic 'anna, *3anna*, *3an3an* 'whine' where /' & 3/ became /w/, *wanna*, *wanwan* 'moan, cry', or *2anna* 'sound of horses/camels' where /2/ became /w/.

Zebra from Arabic *2imaara(t)* where /2 & m/ became /z & b/ each or *Dhabee*, *Dhibya(t)* 'deer' in which /Dh/ became /z/ from which /r/ split besides lexical shift.

3.3 Feline and Canine Terms

Ape from Arabic *rabaa2* 'ape' via /r & 2/-loss, *abb* 'father' via lexical shift, or *2aba* 'walk on all fours, especially hands' via lexical shift and /2/-loss.

Baboon from Arabic *maimoon* 'monkey'; /m/ became /b/.

Bark from Arabic *naba2* 'bark' via reordering and the change of /n & 2/ into /r & k/ each.

Bear from Arabic *ba3eer* 'camel' via lexical shift and /3/-deletion, *babr*, *buboor* (pl.) 'lion' via reversal and lexical shift, or *dubb* 'bear' via reversal and turning /d/ into /r/.

Beast (*bestial*, *bestiality*) from Arabic *daabba(t)* 'beast, animal' via reordering, turning /d & t/ into /t & s/, *dheeb(at)* 'wolf' via reversal and changing /dh/ to /s/, or *bai'as* 'lion' via lexical shift, /'-loss, and /t/-split from /s/.

Bitch from a reversed Arabic *kalba(t)* 'she-dog, bitch' in which /k & l/ became /t & ch/ each (cf. *qa2bat* 'lewd woman' via reordering, the passage of /q/ into /ch/, and /2/-loss).

Cat (*kitten*, *catty*) from Arabic *qiTT* 'cat' in which /q & T/ turned into /k & t/ each (cf. **cut** from *qaTTa* 'cut' or *qaTa3* 'cut' via

/3/-deletion; **kit** from *2awD* 'tub' via /2/-deletion and turning /D/ into /t/, **kite** from *khaiT* 'string' in which /kh & T/ became /k & t/; and **coat** from *ghiTaa* 'cover' via turning /gh & T/ into /k & t/ each or *qaTeefa(t)* 'coat' where /q/ became /k/ while /T & f/ merged into t/).

Canine 'Latin pointed tooth (dog)' from Arabic *sin*, *sunoon* (pl.) 'teeth' where /s/ changed to /k/.

Claw from Arabic *khilb*, *makhlab* 'claw' where /kh & b/ changed to /k & w/ each.

Cub from Arabic *kalb* 'dog' through /l/-loss or *shibl* 'baby lion' via /l/-loss and turning /sh/ into /k/ (cf. *cube* from Arabic *ka3b* 'cube' via /3/-loss).

Cur from Arabic *jaroo* 'bay dog' through the passage of /j/ into /k/.

Dog (*dogged*, *doggie*, *doggy*) from Arabic *asad/seed* 'lion, dog' via lexical shift, reversal, and turning /s/ into /g/, *dawsak/dawkas* 'lion' via lexical shift and merging /k(s)/ into /g/, or *ghaadi* 'lion' via lexical shift, reversal, and turning /gh/ into /g/.

Feline from Arabic *hirr* 'cat' through turning /h & r/ into /f & l/ respectively or *firfir* (*farfoor*, *firfaar*, *furaafir(at)*) 'lion' via lexical shift, syllable loss and turning /r/ into /l/.

Fox (*vixen*) from Arabic *wa2sh*, *wu2oosh* (*2eeshaan*) (pl.) 'wolf, wild animal' where /w/ became /f/ while /2 & sh/ merged into /ks/ or *fal2as* 'dog' via lexical shift, turning /2/ into /k/, and /l/-loss.

Gorilla from Arabic *ghoula(t)* 'ghoul' via lexical shift and /r/-insertion or *qird(at)* 'monkey' where /d/ became /l/.

Grivet from Arabic *qirda(t)* 'ape' where /d/ became /v/.

Hare from Arabic *hirr(at)* 'cat (f)' via lexical shift.

Hound (*hunt*, *hunter*) from Arabic *naahid*, *naahiD*, or *hundus* (*haadi*) 'lion' through reordering and lexical shift, or *rahdoon* 'dog' via reordering and /r & n/-merger (cf. *hind*,

- behind* from Arabic *ba3d* 'after' via /3/-deletion and /n/-insertion).
- Howl** from Arabic *3aweel* or *3uwa* 'howl, sound of beast' via turning /3/ into /h/.
- Hyena** from Arabic *hamh(a/oo)m* (*hammaam*) 'lion' via lexical shift and turning /m/ into /n/, or *3ilyaan* 'big hyena' where /3/ became /h/ and /l & n/ merged into /n/ (cf. *nahhaam* and *na22aam* 'lion' via reordering, /m & n/-merger, and turning /2/ into /h/, and *2aami* 'lion' via turning /2 & m/ into /h & n/ each).
- Leopard** from Arabic *labwat* 'she-lion' where /t/ became /d/ besides /r/-insertion, or *abradat* 'female tiger' in which /l/ split from /r/.
- Lion** (*lioness*) from Arabic *nahal* 'lion' via reversal and /h/-loss, *la2m* 'lion' via /2/-loss and changing /m/ to /n/, or *nimr* 'tiger' via reversal, turning /r/ into /l/, and merging /m/ into /n/.
- Mew** from Arabic *mau*, *muwaa* 'mew'.
- Monkey** (Spanish *mona*, French *monne*) from Arabic *mai* 'female monkey' where /n/ split from /m/ besides /k/-insertion (cf. **baboon** above)
- Panda** from Arabic *saban(d/t)a* 'lion' via /s/-insertion and lexical shift, *fahd* 'tiger' via lexical shift and /f & h/- merger into /p/ and /n/-split from /d/, or *dub(at)* 'she-bear' via reversal and /n/-insertion.
- Pig** from Arabic *kalb* 'dog' via lexical shift, reversal, turning /k/ into /g/, and /l/-loss or *sab3* 'tiger, wild animal' via reversal and /s & 3/-merger into /g/.
- Pork** from Arabic *kalb* 'dog' via lexical shift, reversal, and turning /l/ into /r/.
- Pussy** (*pussycat*) from Arabic *biss(at)* 'cat (f)' (cf. *bizz* 'teats').

Roar from Arabic *za'ar* 'roar' in which /z/ turned into /r/.

Swine from Arabic *khanzeer* 'pig' via reordering, turning /kh & z/ into /w & s/ and /n & r/-merger (cf. **swoon** from *nu3aas* 'sleepiness' via reversal and changing /3/ to /w/; **swan** from Arabic *2azeen* 'sad' where /2 & z/ merged into /s/ or *3awwaam* 'swimmer' where /3 & m/ became /s & n/ each).

Shriek from Arabic *Sarakh*, *Sareekh* 'cry' where /S & sh/ turned into /sh & k/ each.

Tiger from Arabic *Diraak* 'lion' via reordering and changing /k/ to /g/, *arqaT* 'tiger, spotted' via reversal and turning /q & T/ into /g & t/, *juraidi* 'wild animal' via reordering and turning /j & d/ into /g & t/, or *qaswar(at)* 'lion' via reordering and merging /q & s/ into /g/, or *qird* 'monkey' via lexical shift, reordering, and turning /q & d/ into /g & t/ each.

Wolf from Arabic *laith* 'lion' via reversal, lexical shift and turning /th/ into /f/ or *dheeb* 'wolf' through the passage of /dh & b/ into /w & f/ besides /l/-insertion.

Yowl from Arabic *wal(wal)* 'sound of dog' in which /h/ became /y/ whereas /l/ split from /w/ or *ya3wee* 'sound of dog' via /3/-loss and /l/-insertion.

3.4 Aviary (Bird) Terms

Avi (*avian*, *aviation*, *avionics*, *aviary*) from Arabic *3aSfoor* 'bird' via /3, S, & f/-merger into /v/ and /r/-mutation into /s/, or from *hawaa* 'air' through lexical shift and turning /h & w/ into /s & v/ each (Jassem 2013d).

Bird from Arabic *lubaid* 'bird' via reordering and turning /l/ into /r/.

Bat from Arabic *waTwaat* 'bat' through syllable loss and changing /w & T/ to /b & t/ respectively.

Chick (*chicken*) from Arabic *dajaaj*, *da(waa)jen* (pl.) 'chickens, hens' in which /d & j/ merged into /ch/ whereas /j/ became

- /k/ or from *SooS*, *SeeSaan* (pl.) 'chicken' in which /S/ turned into /ch & k/.
- Cock** from Arabic *qooq* 'sound of chicken' via lexical shift and turning /q/ into /k/, *SooS* 'baby chicken' where /S/ became /k/, or *deek* 'rooster' where /d/ became /k/.
- Crane** from Arabic *nasr* 'eagle' via lexical shift and changing /s/ to /k/, *qarn* 'a hook, horn' where /q/ became /k/, or *karawaan* 'chicken-like bird'.
- Crow** from Arabic *ghuraab* 'crow' in which /gh & b/ turned into /k & w/ each.
- Deer** from Arabic *Tili*, *Tilaa'*, *Tilyaan* (pl) 'baby deer, baby sheep' where /T & l/ passed into /d & r/ each or *Dhi'r* 'baby of animal' where /Dh/ became /d/.
- Dove** from Arabic *Do3a(t)* 'chicken-like bird' where /3/ became /v/, *dafdaf* 'of birds, fly close to land and move wings' via syllable loss and lexical shift, or *wadda* 'type of bird' via reversal and turning /w/ into /v/.
- Drove** from Arabic *wird* 'bird group' via reversal and turning /w/ into /v/, *difr* 'group' via reordering, and *dafar* 'to kick-drive' via reordering.
- Duck** from Arabic *deek* 'rooster' via lexical shift or *ghaaq* 'duck' via reversal and turning /gh & q/ into /k & t/ each.
- Eagle** from Arabic *jeer* 'eagle' via reordering and turning /j & r/ into /g & l/ or *Saqr* 'eagle' in which /S & q/ merged into /g/ while /r/ passed into /l/ (cf. **falcon** below).
- Egg** from Arabic *kaika(t)* 'egg' where /k & k/ merged into /g/ or *qai'a(t)* 'egg skin' where /q/ became /g/.
- Falcon** (*falconer*, *falconet*, *falconry*) from Arabic *Saqr* 'falcon' via reordering, turning /S & q/ into /f & k/ each, and /r/-split into /l & n/.

Feather from Arabic *farwat* 'wool, fur' via reordering and turning /t/ into /th/ or *wabr(at)* 'wool' in which /w & b/ merged into /f/ and /t/ became /th/.

Fledgling (*fly*) from Arabic *farrooj* 'young chicken' where /r/ became /l/ or *walad* 'boy, young' in which /w/ changed /f/ whereas /j/ split from /d/.

Fly (*flight*) from Arabic *farra* 'fly' through the change of /r/ to /l/ (cf. **fowl** below).

Fowl via Old English *fugol* from Arabic *3aSfoor* 'bird' via reordering and the change of /3/ to /g/ in *fugol* but its merger with /S/ into /f/ in *fowl* and turning /r/ into /l/, or from *farkh* 'baby bird' where /r & kh/ became /l & g/ each besides /g/-loss later.

Game from Arabic *qanS* 'to game-hunt' via /q & S/-merger into /g/ and turning /n/ into /m/ (cf. Arabic *qimaar* 'gamble, usury' via /r/-deletion or merger into /m/).

Goose from Arabic 'awz 'goose' in which /' became /g/.

Hatchling from Arabic *khadsh* 'scratch' where /kh & d/ became /h & d/ or *faqas* 'hatch' in which /f, q, & s/ turned into /h, t, & ch/.

Hawk from Arabic *3aaq, 3aq3aq* 'crow-like bird' via reduction and changing /q/ to /k/ or *3awhaq* 'crow' where /3 & h/ merged into /h/ and /q/ became /k/, *ya3ooq* 'hawk' via /y & 3/-merger into /h/ and the change of /q/ into /k/, *wa'q* 'sea bird type' via lexical shift and merging /w & ' into /h/, or *3uqaab* 'hawk' where /3 & b/ merged into /h/ and /q/ became /k/.

Hen via Old English *hana* 'cock, bird who sings' from Arabic *2amaam* 'dove, pigeon' via lexical shift and changing /2 & m/ to /h & n/ each, *na2aam* 'goose-like bird' via reordering, turning /2/ into /h/ and /n & m/-merger, *2innaaya(t)* 'type of bird' in which /2/ became /h/, or *'umm(aiat)* 'egg-laying hen, little mum' where /' & m/ became /h & n/ each.

Heron from Arabic *2aran* 'obstinate' or *2azeen* 'sad' where /2 & z/ changed to /h & r/ or *2urr* 'eagle' where /2 & r/ became /h & n/ each.

Owl from Arabic *boom* 'owl' wherein /b & m/ turned into /w & l/ each or rather merged into /l/, or *lail* 'night' via lexical shift.

Peep from Arabic *beeb* 'peep'.

Pelican from Arabic *bula2(aan)* 'big bird' where /2/ became /k/ or *ablaq*, *bulqaan* 'spotted black and white' where /q/ passed into /k/.

Penguin from a combination of Arabic *banaan* 'finger' and *janaa2* 'wing' via /2/-loss and /j/-mutation into /g/ or from *baja3* 'sea bird'; /j & 3/ turned into /g & n/ each (cf. Harper 2012).

Pigeon from Arabic *nujub* 'dove; the best of all animals' via reversal or *bajam* 'speechless animal' via lexical shift; /j & m/ turned into /g & n/ each.

Pheasant from Arabic *2abash*, *2ubshaan* (pl.) 'turkey; grey' via lexical shift, /2/-loss, and the change of /b & sh/ to /f & s/ each or *Tawoos* 'pheasant' through reversal and turning /T & w/ into /t & f/ (cf. *peasant*, *peasantry* from a reordered Arabic *bustaan(i)* 'orchard (man)' or *baseeT* 'simple man, soil man').

Quack from Arabic *qaaq*, *qooq* 'quack, sound of birds'.

Rooster via Old English *hrost* 'wooden ... roof; perch' from Arabic *3areesha(t)* where /3 & sh/ became /h & s/ each or *reeshat* '(head) feather' via lexical shift and turning /sh/ into /s/ (cf. *3aSfoor* 'bird' where /3, S, & f/ turned into /r, s, & t/ together with lexical shift).

Sea Gull from a reversed and reduced Arabic *laqlaq* 'kind of bird' in which /q/ became /g/.

Secretary (*secrétaire*) from a combination of Arabic *Saqr* 'hawk' and *Tair* 'bird', yielding *Saqr Taayer* 'flying eagle' according to a Sharjah TV programme aired around mid-2002.

Sing from a reduced Arabic *saqsaq* or *zaqzaq* 'of birds, to sing' via syllable loss, changing /z & q/ to /s & g/, and /n/-insertion or split or *nashaq* 'nose-weep; blow nose in' via reordering and turning /sh & q/ into /s & g/ each.

Soar from Arabic *Taar* 'fly' through the change of /T/ to /s/.

Sparrow from Arabic *subar* 'bird', *3aSfoor* 'bird' in which /3 & S/ merged into /s/ and /f/ turned into /p/, or *qubbara(t)* 'type of bird' where /q/ became /s/.

Spread from Arabic *basaTa* 'to spread' via reordering, turning /T/ into /d/, and /r/-insertion.

Swallow from Arabic *sunoonoo* 'swallow' in which /n/ turned into /l/ (cf. *zala3* 'to swallow' through turning /z & 3/ into /s & w/ or /3/-loss).

Thrush from a shortened Arabic *zarzoor* 'thrush' where /z/ turned into /th & sh/.

Turkey from Arabic *deek* 'male chicken'; /d/ turned into /t/ while /r/ was inserted.

Tweet (*twitter*) from Arabic *TooT* 'tweet'.

Wing from Arabic *janaa2* 'wing' via reversal and turning /j & 2/ into /g & w/ each.

3.5 Reptiles and Rodents

Adder via Old English *naddre* 'snake' and Latin *natrix* 'water snake' of *nare* 'to swim' from Arabic *nahr* 'river' via lexical shift and /h/-loss or *aqra3* '(bald-headed) snake' via /3/-loss and changing /q/ to /d/.

Boa from Arabic *af3a* 'snake' where /f & 3/ became /b & w/ each or *2ubaab* 'snake' via /2/-loss.

Chameleon via a combination of Greek *khamai* 'on the ground, dwarf' from Arabic *qazam* 'dwarf' via /q & z/-merger into /k (ch)/ and *lion* (see 3.3 above) or *sulaimania(t)* 'lizard' via reordering and changing /s/ to /k/.

Cobra from Arabic *raqeeb* 'snake type' via reordering and changing /q/ to /k/ or *2irbaa* 'chameleon' via lexical shift, reordering, and turning /2/ into /k/.

Crawl from Arabic *rakal* 'kick' via reordering and lexical shift, *harwal* 'to run' via /2/-mutation into /k/ and lexical shift, *rijl* 'leg, walk' via /j/-mutation to /k/ and reordering, *qa2ar* 'crawl, bottom-walk' via reordering, /q & 2/ merger, and /l/-split from /r/, or *harkal* 'cross-walk aimlessly' via reordering and turning /h/ into /k/.

Creep from Arabic *2arba* 'to creep' via /2/-mutation to /k/.

Eel from Arabic *ilaaha(t)* 'big snake' via /h/-loss or *2aiat* 'snake' via /2/-loss and changing /t/ to /l/.

Hedgehog from a combination of Arabic *siyaaj* 'hedge' where /s/ became /h/ and *shawk* 'prick' where /sh & k/ changed to /h & g/ each.

Hiss from Arabic *hass(ees)*, *2ass(ees)* 'hiss' where /2/ became /h/.

Jerboa from Arabic *jarboo3* (*yarboo3*) 'rat' via /3/-loss.

Lizard from Arabic *si2liyat* 'lizard' via reordering, /2 & s/-merger into /z/, and turning /t/ into /d/ besides /r/-insertion.

Mole from Arabic *3ama* 'blind' via /3/-loss and /l/-insertion.

Mouse (*mice*) from Arabic *qawaam* 'mice, rats, snakes' via reversal and turning /q/ into /s/ (cf. *mawwaS* 'sound of mouse' via lexical shift and changing /S/ to /s/, (*fa'r al-*) *misk* 'musk rat' where /k/ merged into /s/, *Samm(aa')* 'deaf (rat); ductless (gland)' via reversal and lexical shift, *3amaS* 'hard of sight' via /3/-loss and lexical shift, or *nims* 'snake-and rat-eating animal' via lexical shift and /n & m/-merger).

Poison 'drink in French' from Arabic *beesh* 'of babies, drink' via lexical shift, turning /sh/ into /s/, and /n/-insertion or *shirb* 'drink' via reordering and turning /sh & r/ into /s & n/ each.

Python from Arabic *thu3baan* 'snake' through reordering and /3/-elision (cf. **serpent** below.)

Rat from Arabic *fa'r* 'mouse' via reversal and turning /f/ into /t/ or *jurdh(ee)* 'rat' where /j & dh/ merged into /t/ (Cf. *rate*, *ratio*, *route*, *rite* in Jassem (2013c)).

Reptile via Latin *repere* 'creep' from Arabic *2arba*, *2irbaia(t)* 'creep, creeper' via /2/-loss, *2aba*, *2aabiyat* 'to creep, creeper' via /2/-mutation into /r/ and /l/-insertion, or *baTn* 'abdomen' via lexical shift and /n/-split into /r & l/.

Rodent from Arabic *qaraD* 'bite' or *qaraT* 'grind, bite' in both of which /q/ merged into /r/.

Serpent (*serpentine*) from Arabic *thu3baan(at)* 'snake' in which /th & 3/ turned into /s & r/ (cf. *silb* 'baby snake' where /l/ split into /r & n/) (cf. **python** above).

Snake from Arabic *2anash*, *2aneesh* 'snake' where /2 & sh/ became /s & k/ each (cf. **sneak** from a reversed Arabic *khanas* 'lie low, sneak' in which /kh/ became /k/; **snicker** and **snooker** from Arabic *zanaqa* 'to corner' or *zaraqqa* 'move in stealthily' wherein /z/ became /s/ and /r/ split into /n & r/, or *in2aSar* 'confine, snooker' in which /2/ became /s/ whereas /S/ became /k/; **snack** and **sink** from a reversed Arabic *ghamas*, *ghumaas* 'dip, submerge, food' where /gh & m/ became /k & n/.

Swish from Arabic *SawwaS* 'to sound-annoy' via /S/-mutation into /s & sh/.

Tortoise from a reversed Arabic *adrad* 'toothless; turtle' via turning /t/ into /d/ and inserting /s/, *raqq* 'male turtle' via reordering and splitting /q/ into /t & s/, or *TarTooza(t)* 'round-shaped back or top' via lexical shift (cf. **Turtle** below.)

Turtle from Arabic *daldaal* 'male turtle' where /d & l/ became /t & r/ (cf. **tortoise** above) or *lajjat* 'turtle' via reversal and turning /j & l/ into /t & r/.

Venom from Arabic *samm*, *sumoom* (pl.) 'poison' where /s & m/ became /v & n/ each, *thumaal* 'poison' where /th & l/ became /v & n/ each besides reordering, or *dheefaan* 'poison' where /dh & f/ merged into /v/ and /m/ split from /n/.

Viper via a combination of Latin *vivus* 'alive' and *parere* 'bring forth, bear' from Arabic *2ai* 'alive' where /2/ became /v/ and *bara'a* 'bring forth' (Jassem 2012b, 2013c); *dabboor* 'spider' via lexical shift and turning /d/ into /v/; *thu3baan* 'snake' through /th & 3/-merger into /v/ and turning /n/ into /r/; or *abtar* 'short-tailed snake' via reordering and turning /t/ into /v/.

Whiz from Arabic 'azz 'whiz' in which /'a/ became /w/.

Whoosh from Arabic *wash(wash)* 'whisper', *waS(waS)* 'of animals, to sound', or 'ishsh 'sound of silence' where /S & /' became /w & s/ each.

3.6 Insects and Flies

Ant from Arabic *naml(at)*, *anmulat* 'ant' via /n, m, & l/-merger into /n/ (cf. **aunt** (German *Amt*) and Old English **eom** 'uncle' from Arabic *3ammat* 'aunt' and *3amm* 'uncle' via /3/-loss and /m/-mutation into /n/).

Bee from Arabic *dhubaab* 'fly' via /th & b/ merger into /b/.

Bite from Arabic *baTTa* 'of wounds, to burst' where /T/ became /t/ or *dhaba2a* 'kill' via reversal, lexical shift and turning /th & 2/ into /t & Ø/ each.

Bug from Arabic *buqq* 'bug' where /q/ turned into /g/.

Fly from Arabic *farr* 'to fly' in which /r/ became /l/.

Entomology via Greek *entomon* 'insect of *en* + *temnein* 'cut' from Arabic *jamma* 'collect-cut' where /j/ became /t/ or *qaTama* 'cut' where /q & T/ merged into /t/.

Insect (*section, dissection, vivisection*) via Latin *insectum* 'animal with a divided body' of *in* + *secare* 'cut') from

- Arabic *shaqq(at)*, *inshaqq(at)* 'divide, cut' in which /sh & q/ became /s & k/ each
- Gnat** from Arabic *namoosat* 'gnat' via reordering, /n & m/-merger into /n/, and turning /s/ into /g/ (cf. *mosquito* below).
- Honey (bee)** from Arabic *na2l(at)* 'honey bee' via lexical shift, reordering, turning /2/ into /h/, and /l/-loss or turning it into /y/.
- Hornet** from Arabic *na2l(at)* 'honey bee' via lexical shift, reordering, and turning /2 & l/ into /h & r/.
- Locust** from Arabic *jaraad(at)* 'locust' via reordering and turning /r/ into /l/ and splitting /j/ into /k & s/.
- Louse (lice)** from Arabic *qaml* 'lice' via reversal and /m & l/-merger into /l/.
- Mosquito** from a reordered Arabic *namoos(at)* 'mosquito' in which /n & m/ merged and /s/ split into /s & k/.
- Scorpion** from Arabic *3aqrab(un)* 'scorpion' in which /3 & q/ turned into /s & k/ each.
- Spider** from Arabic *dabboor* 'wasp' via reordering and /s/-split from /d or r/ or *zanboor* 'wasp' where /z & n/ became /s & d/ each.
- Sting** from Arabic *naghaz*, *naghzat* (n) 'sting' via reordering and turning /gh & z/ into /g & s/ respectively.
- Wasp** from Arabic *ya3soop* 'male bee' via reordering, /3/-loss or merger into /w/.
- Worm** from Arabic *2alam(at)* 'worm' where /2/ became /w/ (cf. **warm** from Arabic *2aami* 'hot' where /2/ passed into /w/ besides /r/-insertion (Jassem 2013c-d)).

3.7 Fish Terms

Cod, crab, fish (catfish, swordfish), mermaid, shark, shrimp, snail, whale (see Jassem 2013d).

Dolphin via Greek *delphis* 'womb, child-bearing' from Arabic *Tifl(at/h)* 'baby' in which /T & t/ turned into /d & s/ besides lexical shift.

Eel from Arabic *ilaah(at)* 'snake' via /h/-loss, *2aiya(t)* 'snake' via /2/-deletion and /t/-mutation into /l/, or 'aim/'ain 'snake' where /m & n/ became /l/.

Frog from Arabic *wirriq* 'frog'; /w, l, & q/ became /f, r, & g/.

Salmon from Arabic *sulayman*, *salmaan* 'Prophet Solomon, proper name, safe'.

Sea lion from Arabic *sai2* 'water area' via /2/-loss or merger into /s/ (Jassem 2013d) and *nahal* 'lion' via reversal and /h/-loss (see below).

Toad from Arabic *Difda3* 'frog' via /D & f/-merger into /t/ and /3/-loss.

In summary, the above animal terms amount to 200 or so, all of which have Arabic cognates. That is, the percentage is 100%.

4. Discussion

Two or three main points merit further discussion, which are the relationship of the present study to the previous ones and the relevance of the lexical root theory to the data at hand.

Concerning the former, the results show that *animal* terms in Arabic, English, German, French, Latin, and Greek are true cognates, whose differences are due to natural and plausible causes of linguistic (phonetic, morphological and semantic) change. Therefore, the results agree with Jassem's (2012a) investigation of numeral words, common religious terms (Jassem 2012b), pronouns (Jassem 2012c), determiners (Jassem 2012d), verb *to be* forms (Jassem 2012e), inflectional 'gender and plurality' markers (2012f), derivational morphemes (2013a), negative particles (2013b), back consonants (2013c), *water* and *sea* words (2013d), *air* and *fire* terms (Jassem 2012e), and

celestial and *terrestrial* terms (Jassem 2013f) in English, German, French, Latin, Greek, and Arabic which were found to be not only genetically related but also rather dialects of the same language. The percentage of shared vocabulary or forms between Arabic and English, for instance, was 100% in all studies. Such ratio indicates that they belong to the same language (i.e., dialects), according to Cowley's (1997: 172-173) classification,

In light of such results, the lexical root theory has been found as adequate for the present analysis as it was for its forerunners. Therefore, the main principle which states that Arabic, English, and so on are not only genetically related but also are dialects of the same language is verifiably sound and empirically true. There can be no clearer proof to that than tracing back English *animal* terms to true Arabic cognates.

The operation of the lexical root theory's applied procedures was neat, smooth, and straightforward. At the lexicological level, the lexical root proved to be an adequate, analytic tool for relating *animal* words in Arabic and English to each other by focusing on root consonants and overlooking vowels because the former carry word meaning while the latter convey phonetic and morphological information as described in section (1.) above (see Jassem 2012a-f, 2013a-f). For example, chivalric and cavalier are stripped down to their 'underlined' roots first.

The historical origin and meaning of lexical items- i.e., etymology, cannot be underestimated. In fact, tracing the Latin, Greek, French, and German roots of English words facilitates locating their Arabic origins a lot. For example, English *cow* (*kine*) and *bull* (*bullock*), German *Kuh*, Latin *bov*, French *beef*, Greek *bous*, Lithuania *karve*, Church Old Slavonic *krava* all come from Arabic *baqar(at)* 'cow' via different sound change routes: (a) reordering, (b) turning /q & b/ into /k & v/ in Lithuania and Old Church Slavonic, and (c) merging /q & r/ into /v (f, w)/ in Latin (French and English) or /s/ in Greek; in all, /q/

evolved into /k, v, or Ø/; English *ewe*, Latin *ovis*, Greek *ovi*, and Arabic *shaa(t/h)*, *shiyaah* (pl.) 'ewe' have a similar story via reversal and turning or merging /sh & h/ into /s, v, or w/ (see 3.1 above).

The linguistic analysis showed how words can be genetically related to and derived from each other phonetically, morphologically, grammatically and semantically. The phonetic analysis was pivotal in this regard in view of the enormous changes which affected Arabic consonants especially in English and other European languages as well as mainstream Arabic varieties themselves (e.g., Jassem 1993, 1994a, 1994b). These changes included deletion, reversal, reordering, merger, split, insertion, mutation, shift, assimilation, dissimilation, palatalization, spirantization (velar softening), duplication, syllable loss, resyllabification, consonant cluster reduction or creation and so on. The commonest such changes were reversal, reordering, split, and merger, some of which may be the result of changing the direction of Arabic script from right to left at the hands of its first adopters or borrowers, the Greeks (Jassem 2013g). Although the results (3.1-7) are rife with examples, Jassem (2013c) provided an outline of the major sound changes in the realm of *back* consonants (pharyngeals, velars, uvulars, and glottals) in particular.

In addition, the results clearly demonstrate that sound change proceeds in three different courses (Jassem 2012a-f, 2013a-f). First, it may be multi-directional where a particular sound may change in different directions in different languages at the same time. For example, Arabic *baqar(at)* 'cow' led to *cow* (*kine*) and *bullock* (*bull*) in English, *bov* (*beef*, *bovine*) in Latin

and French, *bous* in Greek, *karve* in Lithuanian and *krava* in Church Old Slavonic via different sound changes as has just been mentioned above (3.1 above). *Ewe* in English, Latin *ovis*, and Greek *os* are another example, which all come from Arabic *shaa(t/h)* 'sheep' through the merger of /sh & h/ into /h & v/ in Latin but their merger into /s/ in Greek and /w/ in English. Secondly, it may be cyclic where more than one process may be involved in any given case. The changes from Arabic *kabsh* 'male adult sheep' to English *sheep*, for example, included (i) reordering, (ii) merging /k/ into /sh/, and (iii) vowel shift. Finally, it may be lexical where words may be affected by the change in different ways- i.e., lexical diffusion (see Phillips 2012: 1546-1557; Jassem 1993, 1994a, 1994b for a survey). That is, a particular sound change may operate in some words, may vary in others, and may not operate at all in some others. For example, the different forms of Greek *bous*, Latin and French *bov*, *beef* (*bovine*), English *cow* (*kine*), *bullock* (*bull*), Lithuanian *karve*, and Church Old Slavonic *krava*, are a case in point, which descend from Arabic *baqar(at)* 'cow' (3.1 above). All such factors render Arabic, English, German, and French to be mutually unintelligible despite the use of the same word roots (Jassem 2012a-b).

It is worth noting that all the sound changes above are natural and plausible; for example, the change of /k/, a voiceless velar stop, in Arabic *kabsh* 'male sheep' to /sh/, a voiceless alveolar fricative in *sheep*, is natural as both are closer by place, manner and voice (cf. Jassem 2012b). Likewise, the change of /q/ in *baqar(at)* to /s & v/ in *bous* (*bov*), *beef* is plausible but natural to /k/ in *krava*. (For further detail, see Jassem (2012a-f, 2013a-b).)

As to the major morphological and grammatical aspects (inflectional and derivational affixes), all relate to number,

gender, and verb- or adjective-making ones. Jassem (2012f, 2013a) has already described them in detail, to which the curious reader can be referred. In fact, since all such differences do not alter the meaning of the root itself, they can be ignored right away.

Finally, on the semantic plane, lexical relationships had a paramount role, all of which were reported in Jassem (2012a-f, 2013a-f). Lexical stability was obvious in a great many words such as *cow*, *bullock*, *bull*; *sheep*, *ewe*, *ram*, *lamb*; *horse*, *cavalier*, *chivalric*, *donkey*, *mule*, *zebra*; *swine*, *rabbit*; *leopard*, *lion*, *bitch*, *cur*; *avis*, *aviation*, *hawk*, *eagle*, *duck*; *snake*, *rat*; *fish*, *cod*, etc., the cognates of all of which still retain the same or similar forms and meanings in Arabic, English, French, and so on. Lexical shift was very common here especially in *wild* animal terms like *lion*, *hyena*, *wolf*, *dog*, *pig*, *pork*; also *aviary* terms involved a lot of that as well like *duck*, *hen*, *eagle*, and so on. Their meanings shifted within the same broader category such as Arabic *seed/asad* 'lion' and *dog*, its current meaning in English; *duck* came from Arabic *deek* 'rooster'; Spanish *patos* 'duck' derives from Arabic *baTTa(t/h)* 'duck' where /t (h)/ became /s/ (cf. Campbell 2006: 204-206; Crowley 1997: 174ff). Lexical change goes hand in hand with lexical shift such as the absence of *camel* terms in European languages due to habitat change, some of which may have shifted their reference to newer, similar creatures in Europe such as *bear* and *ba3eer* 'male camel' via /3/-loss. Lexical split took place in words like *Saqr*, *Suqoor* (pl.) 'eagle' which might have yielded *eagle*, *hawk* and *falcon* through different phonetic processes: in *eagle* /S & q/ merged into /g/ while /r/ became /l/ whereas in *falcon* /S & q/ passed into /f & k/ while /l/ split into /n & r/; *2imaar* 'donkey' split into *mule* where /2 & r/ became /Ø & l/ and *zebra* where /2 & m/ became /z & b/ (3.2 above).

Lexical convergence was also very common due to the existence of several formally and semantically similar words in Arabic. For example, *hyena* might derive from Arabic *hammam*, *hamhoom*, or *2aami* 'lion' through turning /m/ into /n/ and /2/ into /h/; *tiger*, *bear*, *hen*, etc. are other examples (see 3.3-5 above). Lexical multiplicity occurred often in words like *bear* 'wild animal; carry; give birth' which might derive from Arabic *babr* 'bear', *bara'a* 'give birth', or *rabba* 'bring up' via reversal; *dove* and *cow* are other examples (see 3.1-3.4 above). Like convergence, multiplicity is due to formal and semantic similarity between words. Finally, lexical variability shows in the presence of alternative words for *lion* and *bird* in both Arabic and English, which are utilized in different ways. For example, English *eagle*, *hawk*, *falcon*; *cow*, *bull*, *bullock*, *ox*; *sheep*, *ewe*, *ram*, *lamb* are a few such examples (see 3.1-7 above); Arabic *asad* 'lion' has no less than 500 variants (Ibn Khalawaih 2013); Ibn Seedah 1996 (6 & 8) whereas *2imaar* 'donkey' and *kalb* 'dog' has 70 each (Ibn Seedah 1996 (8)). Many such terms underwent lexical or semantic shift within the same broader category, of course, as shown above.

As to the relational procedure, many of the above lexical cognates are both formally and semantically similar, for example, *bullock* and Arabic *baqar* 'cow' via reordering and turning /r/ into /l/; *sheep* and Arabic *kabsh* 'male sheep' where /k & sh/ merged into /sh/; *horse* and Arabic *faras* 'horse' where /f/ passed into /h/; *cavalry* and Arabic *khail*, *khuyool* 'horses' where /kh & w/ changed to /k & v/ each. Some, however, are formally different but semantically similar such as *force*, *ferocious*, *fierce*, and *horse*, all of which derive from Arabic *faras* 'horse, strong, powerful'. Others still are formally similar but semantically different such as *mare* and *more*, *mere* in English, all of which

derive from similar Arabic cognates: i.e., *muhra(t)* 'mare' and *marra(t)*, *miraar* (pl.) 'once, times' via different sound changes such as /h/-loss (see 3.2 above). Thus Arabic cognates can be clearly seen to account for the formal similarities and/or differences between English words themselves.

In summary, the foregoing *animal* words in Arabic, English, German, French, Latin, and Greek are true cognates with similar forms and meanings. Arabic can be safely said to be their origin all for which Jassem (2012a-f, 2013a-b) offered some equally valid reasons such as phonetic complexity, lexical multiplicity and variety. Of course, English, German, French, and Latin do have lexical variety and multiplicity but not to the same extent as Arabic does. One can compare for himself the number of terms for *lion*, *horse*, *donkey*, *camel*, and *dog* in English dictionaries and thesauri and Arabic ones with between 500-1500 for *lion* alone (e.g., Ibn Khalawaih 2013).

6. Conclusion and Recommendations

The main findings of this paper can be summed up as follows:

- i) The 200 *animal* terms or so in English, German, French, Latin, Greek, and Arabic are true cognates for being similar in form and meaning.
- ii) The different forms amongst such words across those languages stem from natural and plausible phonological, morphological and/or lexical factors (cf. Jassem 2012a-f, 2013a-f). Reversal, reordering, split, and merger were very common sound changes.
- iii) The main recurrent lexical patterns were stability, convergence, multiplicity, shift, and variability; the abundance of convergence and multiplicity are because of

the formal and semantic similarities between Arabic words from which English words emanated.

- iv) The huge lexical variety and multiplicity of Arabic *animal* terms (e.g., 500 for *lion*) as well as their phonetic complexity compared to those in English and European tongues point to their Arabic origin in essence.
- v) The lexical root theory has been as adequate for the analysis of the close genetic relationships between Arabic, English, German, French, Latin, and Greek *animal* terms of all types.

The current work agrees with Jassem's (2012a-f, 2013a-f) calls for further research into all language levels, especially vocabulary, to substantiate these findings. Furthermore, the application of such findings to language teaching, lexicology and lexicography, translation, cultural (including anthropological and historical) awareness, understanding, and heritage is urgently needed for the dissemination and promotion of linguistic and cultural understanding, cooperation, acculturation, enrichment, tolerance and peaceful coexistence, besides human equality.

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