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Cognitive Set and Lexicalization Strategy in Dogon Action Verbs

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Abstract. Dogon languages lexicalize action verbs with obligatory reference to manner and/or process. This contrasts with English and “Standard Average European,” which (in neutral contexts) profile result and/or function. Many common English verbs like *carry* and *eat* correspond to sets of Dogon verbs with senses like ‘carry on back’ and ‘munch’. The pattern cuts across many semantic domains and constitutes a generalized lexicalization strategy, which suggests that Dogon speakers, on the one hand, and speakers of English and “Standard Average European,” on the other, have distinct cognitive orientations toward observable actions. A number of explanatory frameworks are available to account for these cultural differences.

1. Cognitive sets and lexicalization strategies. If by “cognitive set” is meant a nonuniversal pattern of selective attunement, there are two basic types. The first is continuous attunement to selected aspects of one’s surroundings, so that a speaker is able to adduce this information (verbally or behaviorally) with little incremental cognitive effort. These may be individual or occupational rather than broadly cultural in nature, as when someone driving a motor vehicle (perhaps a police officer or an airport parking van driver, even when off duty) remains aware of the makes and models of other vehicles on the road, while the rest of us pay no attention. But they can also be systematic within a society and can be reflected in the local language.

We may briefly discuss four examples.

1. Societies differ sharply in the relative attunement of average individuals to alternative orientational systems. The main options are systems with egocentric and object-centered ‘front’–‘back’–‘left’–‘right’ axes, versus systems with absolute ‘east’–‘west’–‘north’–‘south’ axes, but there are also more idiosyncratic orientations based on local topography (slopes, rivers, coastlines); see Haugen (1957), Haviland (1993), and Levinson (2003), who speaks aptly of a “mental compass.”

2. It is painfully obvious to Americans (like us) living in West Africa that villagers maintain a far more encyclopedic and readily accessible knowledge of names, images, and information about other persons in their social environment than do almost any Americans (aside from politicians). This “mental Rolodex” is enforced by the constant exchange of greetings, which (except among strangers) include personal names; see Irvine (1974).
There are sharp differences between Western societies where listeners are continuously attuned to (judgements of) the sincerity level of interlocutors (serious, joking, lying, sarcastic), and societies like the Mopan of Belize, who assess truth versus falsity, but do not distinguish between lies and honest mistakes (Danziger 2006, n.d.).

Ameka (2004) argues that West African languages reflect a special attunement to triadic lines of communication, and have therefore elaborately developed forms of indirect discourse.

At least cases 1 and 2 above relate to the opposing field-dependent and field-independent cognitive styles identified by cross-cultural psychologists (Witkin 1962).

All of these cognitive sets take the form of nonstop background monitoring of one’s spatial, social, and interactional environment, keeping the cognitive motor running so that one can access relevant information with little incremental effort. Such a set is not essentially linguistic in nature, but it does have consequences for the lexicon and phrasing. Australian languages have no way to say ‘turn left’ or ‘turn right’, and Mopan make no distinction between ‘misstatement (erroneous statement)’ and ‘lie’.

The other class of cognitive sets is manifested in the form of broad lexicalization strategies, whereby speakers of a given language systematically focus on selected aspects of propositional content. Langacker’s notion of processual profile (1991:297) is relevant, but we are here concerned with entrenched (routinized) and lexical profiling patterns rather than contextual options, and we are not as sanguine about taking verb concepts such as ‘break’ as basic-level categories.

Almost any semantic domain that has been studied anthropologically could provide examples of this type of culturally variable cross-cognitive set. For example, natural-species terminology may, as in English, be lexicalized with emphasis on a basic level that often corresponds to scientific genera or other categories above species level (oak, bear, grasshopper) (Berlin 1992), while more specific categories are expressed by adding modifiers (red oak, polar bear). Or they may be lexicalized in a hierarchically flatter level often corresponding to scientific species, making relatively little use of modifiers. Color terminologies may focus more or less strictly on chromatic values (Berlin and Kay 1969), or the terms may denote composites of hue, luminosity, and moistness and may be contextually skewable (e.g., Jones and Meehan 1978). Recognition of these variable cognitive sets makes direct cross-linguistic comparison problematic.

Writing in this journal, Hymes (1985) summarized and commented on decades of ethnosemantic and related work, chiefly on native North American languages, under the rubric of “cognitive style.” Of particular interest is his discussion of the “pervasive emphasis or themes” (1985:36) in various languages, e.g., motion in Navaho, preparedness in Hopi, and twin terminals (point of origin plus terminus) in Upper Chinook. We prefer to use the term “style” or “strategy”
for relatively tangible and recurrent lexicalization patterns, and “set” for the
cognitive orientations that presumably underlie them.

In this article, we describe a broad lexicalization strategy for Dogon action
verbs that, we argue, reflects a cognitive set profiling manner and/or process
(M/P) rather than result and/or function (R/F). Although we suspect that the
points made here for Dogon may be valid for many non-European languages, we
must leave it to others to demonstrate or refute this. Except for recent work on
cutting and breaking verbs, we have little to go by, since transitive action verbs
are barely mentioned in Hymes (1985), or in the lengthy distillation of lexical
typological research in Koch (2001).

2. Dogon languages. Dogon is a family of approximately twenty languages
spoken primarily in east-central Mali, West Africa. It has been thought to be
distantly related to other Niger-Congo families, including Gur, Kwa, Kru,
Mande, West Atlantic, and Benue-Congo, although this relationship is not
proved and has an increasing number of skeptics. Most Dogon are farmers who
live in small villages and raise millet, sorghum, and other crops in nearby fields,
primarily during the single growing season from June to September.

We are engaged in comparative lexicographic work focusing to date on the
more northerly languages of the Dogon family, though we plan to cover the
entire family in the coming years. The two authors, and two other members of
the same project, have worked in the field on about half of the twenty or so lan-
guages so far. Only two languages are reported on here, but the patterns re-
ported are also found, mutatis mutandis, in the other languages studied to date.

Our lexicographic work makes extensive use of still images and of short
video clips. Initially, the clips (like the images) were recorded in order to docu-
ment the senses of action verbs for display on our project website, and to ensure
that English and French glosses of verbs in the various Dogon languages were
consistent—a particularly important issue in a multiple-fieldworker project. But
as the work progressed, we realized that many of our original glosses (‘carry’,
‘cut’, etc.) were inaccurate, and that most Dogon action verbs make obligatory
M/P distinctions that are optional and stylistically marked in English.

The previous lexicographic works on Dogon languages are by the ethnologist
G. Calame-Griaule (1968) on Toro-So, and by Christian missionaries M. Kervran
(1993) on Donno-So and Léger (1971) on Tomo-Kan. These works are admirable,
but we do not attempt to incorporate them into this study, since we have not yet
begun work on these central and southern Dogon languages, and because it is
difficult to analyze semantic oppositions within lexical domains by extracting
lexemes from alphabetical dictionaries that were not designed for this purpose.

3. Action verbs. These are verbs that denote observable voluntary actions
directly affecting an object, carried out primarily by humans and other higher
animates. Among the verbs excluded from this rubric are those denoting exist-
ence, possession, speech, perception, qualities, mental functions, and abstractions such as ‘imitate’. Also excluded from consideration here are atelic (i.e., temporally unbounded) activities such as ‘dance’ and ‘run’.

A typical action involves a set of more or less chronologically sequenced subevents that is conceptualized as an integrated schema, with one or more subevents profiled (and therefore definitionally criterial) and others backgrounded, presupposed, or (vaguely) implied. An example is $X$ shoot $Y$, which can be unpacked into subevents as in (1), those in bold type being more central cognitively (and truth-conditionally obligatory) than others.

(1) (a) $X$ load bullet into firearm
   (b) $X$ take hold of firearm [may also precede (a)]
   (c) $X$ aim at $Y$
   (d) **$X$ pull trigger of firearm**
   (e) bullet proceed at lightning speed from firearm through atmosphere to $Y$
   (f) **bullet strike $Y$**
   (g) $Y$ die

An action of this type is reported in English as either $X$ shoot $Y$ (implying that $Y$ died), $X$ kill $Y$, or $X$ shoot and kill $Y$. Here shoot ostensibly profiles subevents (d)–(e) in (1), which can be conceptually compressed into the gloss ‘$X$ cause bullet to emerge at lightning speed from the tube (barrel) into the atmosphere’; compare they shot the stunt man out of the cannon and intransitive the race horses shot out of the gate. Subevent (e) is not bolded since the motion of the projectile is not visible to the observer. The fact that $X$ kill $Y$ can report the same event shows that the speaker may disregard the manner of dispatching $Y$ (shooting, strangling, poisoning, hanging, electrocuting) and simply profile the deadly result. More specialized lexicalizations, such as $X$ murder $Y$, $X$ execute $Y$, $X$ rub out $Y$, and $X$ assassinate $Y$, show that the agent’s intent and the institutional context may be coprofiled along with ‘kill’, while omitting explicit reference to the manner of killing.

We claim that Dogon speakers have a culturally prescribed pattern of profiling M/P (implying the R/F), whereas speakers of English and “Standard Average European” (Whorf 1956:138) prefer in neutral contexts to profile R/F. The effect of this on the lexicon is that English can readily lexicalize either R/F (with simple verb stems) or M/P (with special and often stylistically colorful lexical items, or using phrases that also include the R/F verbs), while Dogon languages require M/P verbs and may lack R/F verbs entirely.

Even within Whorf’s Standard Average European there are some cross-linguistic differences in the obligatoriness of M/P distinctions. An English-speaking student of German, for example, must learn to translate go variably as gehen ‘go (on foot), walk’ or fahren ‘go (in a vehicle), ride’, and to translate sharpen as schärfen ‘sharpen (a blade, i.e., by pushing or drawing the blade lengthwise across a stone)’ or spitzen ‘sharpen (a point, i.e., with a circular motion)’. Those of us who have learned German as adults are aware of the extra
cognitive effort needed to select the correct German word. However, such cases are sufficiently few in number to permit L2 instructors to focus on them individually in the classroom, and Germans learning English have similar issues. These cases are too isolated and symmetrical to constitute distinct generalized cognitive sets, in contrast to the far more systematic differences between Standard Average European and Dogon.

4. Verbs of eating. Because the act of eating is universal, this domain is a good place to start. The denoted or implied subevents are, maximally: delivery of food to the mouth (for Dogon, always by hand); processing (e.g., mastication) in the mouth; and swallowing (ingesting). The denotation of English *eat* specifically includes ingestion, and it makes only limited reference to manner (*eat* versus *drink*). Other verbs, such as *chew* and *munch*, denote manner, but are not commonly used to denote completed acts of consumption.

In Dogon languages, there is no general ‘eat’ verb. Instead, there are several verbs that correlate with different types of food, so that one is tempted to consider them to be classificatory. However, on closer inspection we see that they profile M/P rather than object class. Details of the semantic distinctions differ somewhat among the languages studied so far. For Jamsay, the key ‘eat’ verbs are given in (2a)–(2h).

(2a) *néː*:
- ‘eat regular grain-based meal’ (usual object is *nāːː*: ‘meal’)
- ‘eat (soft fruit, e.g., ripe mango)’
- ‘eat (hard fruits, e.g., unripe mango, sweet potato)’
- (ruminant animal) eat (vegetation)’

(2b) *kɔːː*:
- ‘eat (meat)’
- ‘(animal) devour (prey)’

(2c) *tɛwɛ̃ː*
- ‘eat (snack, e.g., peanuts, dates, biscuits)’
- ‘munch on and suck (kola, sugar cane)’
- ‘chew on (bone)’

(2d) *pʊɡʒiː*
- ‘eat (something dry and powdery, e.g., flour or milk powder)’

(2e) *kɔːːn*:
- ‘eat (crushed millet with water)’

(2f) *kɔŋɔrɔː*:
- ‘gnaw at (bits of meat remaining on bones)’
- ‘eat scrapings or wipings from (e.g., a plate or a cooking pot), scavenge food left by others’

(2g) *cɛː*
- ‘(person, mouse, bird) nibble or peck off a little bit of (a fruit)’
- ‘(grasshopper) bite off and eat (millet grains)’

(2h) *cɛrɛː* (= *cɛː*, first sense)
Jamsay is unusual among Dogon languages in failing to distinguish ‘eat (hard fruit)’ from ‘eat (soft fruit)’. In the neighboring Dogon languages (Nanga, Beni, Walo, Najamba), ‘eat (soft fruit)’ is merged with ‘eat (grain-based meal)’ as in Jamsay, but ‘eat (hard fruit)’ is separated from this category and instead merged with ‘eat (meat)’. That is, for Jamsay the unique fibrous quality of meat, which requires careful chewing, sets it apart from all fruits. In the other languages, the effort that goes into biting off and chewing a piece of hard fruit justifies equating it with meat, in contrast to soft fruits.¹

In Tommo-So, eating of all fruits can be described by the verb _third ‘eat (meat, snack)’, which is cognate to the Jamsay verb in (2c). However, eating soft fruits can alternatively be described by _third ‘suck’.

The Jamsay merger of ‘chew on (bone)’ with two other senses in (2c) is matched by only one of four immediately neighboring Dogon languages for which information is available, namely Nanga, but this language also merges (2c) with (2b), i.e., with ‘eat (meat)’. The other languages variously assign ‘chew on (bone)’ to (2f) (Beni, Walo) or to ‘chew’ (Najamba). Some languages also have a special verb for ‘eat (mango) by gnawing it directly (without cutting or peeling it)’.

While the details vary, each language obligatorily distinguishes several M/P categories, above all between eating a grain-based meal and eating meat. The distinctions profile the manner of predigesting (e.g., chewing) the foods in the mouth and are (therefore) typically associated with specific food categories. The verbs are also at least broadly correlated with the way the food is presented to the mouth. For example, the full cognitive scenario for (2d) ‘eat (powdery food)’ is (with bold type used, as in (1), to mark the cognitively more central subevent): pop powdery food into the mouth from the palm of the hand; predigest food in the mouth by moistening it with saliva; swallow food. Manual presentation is, however, secondary to predigestion, and other ways to deliver the powder to the mouth are possible (e.g., using a folded paper). Similarly, the most frequent sense of the (2b) verb is ‘eat (grain-based meal)’, where the right hand takes a handful from the communal bowl, squeezes it into a ball, and presents it to the mouth by sliding the hand vertically down over the mouth just as the palm is opened. But the same verb is used for ‘eat (soft fruit)’ in all of the languages. What these two senses have in common is the manner of predigestion, rather than of manual presentation.

In addition to the ‘eat’ verbs, there are verbs meaning ‘chew’ and ‘swallow’, but these are used only in marked contexts where the subevent in question is singled out. There is also a verb ‘drink, smoke’ denoting the consumption of liquids and cigarettes.

In English, _eat_ is regularly used in neutral contexts for all types of food consumption by humans and animals. Except for the simple _eat/drink_ distinction, the manner of predigestion is subordinated to the profiled R/F, namely, the successful transmission of food to the stomach.
An important qualification is necessary. The Dogon M/P distinctions are obligatory in the sense that an individual act of eating, directly observed by a witness, can only be reported using the appropriate verb. When multiple acts of eating are subsumed, as in 'we ate well all year', or when a complex eating event involving a grain-based meal followed by grilled meat and mangoes is summarized in a single sentence, the term for 'eat (grain-based meal)' generalizes. The point remains that one cannot use the (2b) verb with '(grain-based) meal' as the object, and one cannot use the (2a) verb with 'meat' as the (sole) object.

There are interesting similarities between Dogon and Athabaskan languages in the semantics of verbs of consumption. In Athabaskan, 'eat' verbs often classify objects, and have glosses like 'consume/chew round', 'consume/chew plural object', and 'consume/chew marrow'. To varying degrees, object classification implies a manner of hand-to-mouth delivery, specific mastication processes, or both. Athabaskan languages also have some consumption verbs that explicitly denote these processes, or that have both object-classificatory and process-denoting qualities (Rice 2009). So, there are points of contact between Athabaskan and Dogon in consumption verbs, but Dogon is more consistently focused on process and has no true object-classifying verbs.

An anonymous referee suggests that many of the semantic patterns described in this article are broadly applicable to Niger-Congo languages. This would not surprise us, but since our expertise is confined to northern and eastern Mali, we are unable to respond meaningfully at this time. For 'eat' specifically, Bonvini (2008) has examined a number of Niger-Congo dictionaries, where he found a general verb 'eat, ingest (food)', alongside more precise verbs with senses such as 'eat (for things that are not chewed)' and 'eat; chew, crunch, gnaw, bite; absorb'. The presence of a general 'eat' verb suggests a more English-like system where M/P distinctions are optional and (therefore) stylistically marked. But it would certainly be illuminating to examine not just 'eat' but also action verbs in general in a number of other African languages.

5. Verbs of holding and carrying. In English, hold is kinetically static. The object is secured in place by a controlling agent (cf. hold up, hold back), which presupposes a prior act of grasping. Carry presupposes concurrent holding (and hence prior securing), as the conveyed object accompanies the agent in motion. The precise manner by which the agent’s body or equipment secures the object is only optionally expressed, usually by adding an adverbial phrase. This is in keeping with a cognitive set emphasizing R/F.

In Dogon, there is no systematic distinction between static 'hold' and kinetic 'carry' verbs, although certain ways of holding objects (e.g., on the head) are, in practice, only used to transport them. Rather, the position in which the object is secured, relative to the carrying individual or vehicle, must be specified except when the 'hold' sense is watered down to a stative (i.e., not action) verb 'have in one’s possession, have custody or temporary possession of', which can take abstract as well as physical objects.
The principal Tommo-So verbs of holding or carrying that are applicable when the object is a physical object (or load), a child, or a small animal that is held above ground are presented in (3a)–(3k). Related subdomains ‘grasp’, ‘cling (to)’, ‘keep, store, guard’, and ‘immobilize, park, prop (up)’, among others, are omitted here (they do not overlap lexically with the verbs given here).

(3a) dùyíyí  
‘carry (something on one’s head)’  
‘transport (load) on a cart’

(3b) tíndígíyé  
‘hold or balance (e.g., a jar) on one’s head without using one’s hands’

(3c) sînìgíyé  
‘carry (child) on one’s back’

(3d) námbígíyé  
‘carry (child) with its belly on one’s shoulder’  
‘carry (bag, rifle) by slinging strap over one’s shoulder’  
‘hold (stick) by one end, with the middle resting on one’s shoulder (ready to strike)’

(3e) gòxìgíyé  
‘carry (bag, rifle) by slinging a strap over one’s shoulder’  
‘carry (hoe, ax) with the blade resting on one’s shoulder’

(3f) ámmúgíyé  
‘hold (e.g., a bag, a child) against one’s chest or hip’  
‘lift up (e.g., a heavy stone, an opponent in wrestling)’

(3g) gôjó  
‘hold (child) on one’s side’

(3h) émmégiyé, péndígíyé  
‘hold up (something) by pressing laterally (e.g., between the legs or between arm and ribs)’

(3i) wà:gíyé  
‘carry (stick) behind one’s nape with both hands or forearms’

(3j) sónnìgíyé  
‘carry (e.g., a child, a goat) with its legs around one’s neck’

(3k) kúmbíyé  
‘carry (e.g., a bag) in one’s hand’ (cf. kúmbó ‘fist’)

These verbs primarily denote the initial act of securing the object in the indicated position, and only when combined with ‘have’ or ‘go’ do they take on the stative sense ‘hold’ or the active sense ‘carry, transport’. The exception is (3a) dùyíyí, which can be used in all of these senses.

In the context of conveying an object or load to another location, the usual verb is (3a) because of real-life carrying practices. Women, and to a lesser extent men, carry loads between the village and the fields, or between the village and a weekly market, on their heads. Larger loads are carried on flatbed carts that are drawn by beasts of burden. In both cases, the load is positioned atop the carrying surface. Since this vertical arrangement is normal for transporting loads, the verb in (3a) is also used figuratively, as in ‘X is carrying the (financial) burden’.
The verb (3b) is a specialized one denoting a specific manner of carrying on the head.

Babies, on the other hand, are regularly carried by women on their backs, secured by a wrap whose ends are tied in the front, so the usual verb for ‘carry (a child)’ is that in (3c). This verb cannot denote other ways of holding or carrying a child, such as those in (3d) and (3e).

The verb (3f) can refer to carrying a child or heavy object either in front of one’s chest or on one’s side. What is important is the manner of holding, viz., in both hands. On the other hand, (3g) can refer only to holding a child on one’s hip, generally with one arm under the child’s buttocks.

Sticks (staffs) are frequently carried by shepherds in the fields, and by old men when walking anywhere outside of their neighborhoods. When not used as canes, the sticks are held in one of a small number of positions, e.g., horizontally behind the neck with the hands or the forearms draped over both ends (3i), or squeezed horizontally between the upper arm and the ribs (3h). None of the verbs is extended to the other positions.

The verbs (3d) and (3e) overlap semantically in part, as suggested by the shared gloss ‘carry (bag, rifle) by slinging a strap over one’s shoulder’. However, (3d) involves the use of the hand in securing the bag, child, or stick, whereas with (3d) the bag or hoe is secure on its own. Either method is possible for bags (e.g., the familiar long thin goatskin shoulderbag commonly taken by men to the field or to market), but only (3d) is possible for, e.g., a child.

6. Verbs of breaking and cutting. The semantic domains ‘break’ and ‘cut’ have a prominent place in the action-verb literature. An important difference between the two is that ‘break’ necessarily profiles a partition in the theme (i.e., the object) that may or may not have been induced by an external agent, while ‘cut’ makes explicit reference to an agent as well as to the theme. If the respective agentive actions are schematized as in (4a)–(4b), with the profiled sub-events in bold type, we can formalize the difference.

(4a) ‘break’
   X apply force to Y
   Y become divided (perhaps raggedly)

(4b) ‘cut’
   X take blade
   X apply blade across surface of Y
   Y become divided (cleanly)

In the case of ‘break’, there may be no agent X at all (as in the mediopassive version it broke). The agentive version X break Y leaves the manner of applying force (e.g., with or without an instrument) unspecified. With ‘cut’, X’s action is profiled, and a full-fledged middle version (#it cut) is not grammatical. Likewise, X cut (= slashed) at Y makes sense, but X broke at Y does not (in the relevant
sense), since the construction with *at* does not require physical contact with the theme. Because the ‘break’–’cut’ distinction has syntactic consequences, it attracted the interest of lexically minded syntacticians (Guerssel et al. 1985). The distinction within several languages has recently been explored by cognitively minded linguists; see section 13 below.

In Dogon languages, there are no general ‘break’ or ‘cut’ verbs. Instead, much greater precision in the specification of M/P is obligatory. For Jamsay, the main ‘break’ terms are in (5a)–(5d). We do not insist on the validity (in Dogon semantics) of the subcategories in (5), much less on the validity of ‘break’ and ‘cut’ as basic concepts; they are primarily intended to make the data easier for readers to process. Related (sub)domains such as ‘crack’ and ‘remove (skin or shell)’ are omitted.

(5a) break cleanly

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>pêrê</td>
<td>'break in half (long object, e.g., stick, bone, brick)’</td>
</tr>
<tr>
<td></td>
<td>'break (cigarette), break apart (two joined objects)’</td>
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</tbody>
</table>

(5b) break into pieces

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>jêyô</td>
<td>'shatter, smash (something)’</td>
</tr>
<tr>
<td></td>
<td>'break up (hard object, as a stone, calabash, water jar)’</td>
</tr>
<tr>
<td>bêrêwé</td>
<td>'dismember (something) into pieces’</td>
</tr>
<tr>
<td>pôjô</td>
<td>'granulate (something), break up, cause to crumble’</td>
</tr>
<tr>
<td>pôgôjô</td>
<td>'cause to explode, detonate’ (cf. intransitive pôjô)</td>
</tr>
</tbody>
</table>

(5c) pick or break off an extremity or appendage

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>pêmé</td>
<td>'pick (grains, plant sprouts) one at a time, by hand’</td>
</tr>
<tr>
<td>pô:</td>
<td>'pick (e.g., mangoes) one by one’</td>
</tr>
<tr>
<td></td>
<td>'pick (fruit) from tree or plant’</td>
</tr>
<tr>
<td></td>
<td>'pick (peanut pods)’</td>
</tr>
<tr>
<td>pê:</td>
<td>'break off (a protrusion on a stone, with a hammer)’</td>
</tr>
<tr>
<td>pôjôró</td>
<td>'pick (cotton)’</td>
</tr>
<tr>
<td>pôllô</td>
<td>'break (something soft, e.g., meat, bread) into pieces by hand’</td>
</tr>
<tr>
<td>pêllô</td>
<td>'break or cut off (a piece of something flat, e.g., fabric, leaf, paper)’</td>
</tr>
<tr>
<td></td>
<td>'pick off, pull or break off (e.g., a leaf) by hand’</td>
</tr>
<tr>
<td></td>
<td>'pick off (a small piece of a leaf, etc.) by hand’</td>
</tr>
<tr>
<td>pôllô</td>
<td>'pull off (fruit, by pulling down with hooked pole)’</td>
</tr>
<tr>
<td></td>
<td>'pick (peanut pods)’</td>
</tr>
<tr>
<td></td>
<td>'snap, break (string, by pulling or biting)’</td>
</tr>
<tr>
<td>hâráwá</td>
<td>'break off a piece of (something)’</td>
</tr>
<tr>
<td>tômûr'ô</td>
<td>'break or cut off the end of (stick, arm, leg)’</td>
</tr>
<tr>
<td>têné</td>
<td>'break off, prune (flowering stem of onion, at its base, so the bulb will grow well)’</td>
</tr>
</tbody>
</table>

(5d) pick or strip off (many at once)

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>tôrê</td>
<td>'(somebody) strip off (leaves or fruits, from a branch, in one action)’</td>
</tr>
<tr>
<td>lôrêwé</td>
<td>'(animal) skim off (leaves, from a branch)’</td>
</tr>
<tr>
<td>pô:</td>
<td>'pick (fruits in bunches, e.g., tamarind and wild grape)’</td>
</tr>
</tbody>
</table>
Of special interest is the luxuriant development of the lexicon of picking and breaking off given in (5c) and (5d). The agent’s hands (or tools) manipulate the various objects in subtly different ways in each case, even when the result is the same. Jamsay uses $p$: both ‘pick (a fruit)’ and ‘pick (fruits in bunches)’, but some neighboring Dogon languages differentiate the two.

These data also illustrate that vocalic symbolism (holding consonantism constant) is at work in action verbs. Note the set $pállá$, $pêllé$, $pûlló$ in (5c); there is also a ‘cut’ verb $pêllé$ (see below). Another set is $p$: and $pê$: in (5c). In (5b), $pójó$ is related to $pójó$, the intransitive verb that underlies (irregular causative) $pójójó$ in (5b). In (5c), $kárâwá$ is related to $kórówó$ ‘remove bark from; crack open; peel’.

The ‘cut’ verbs are listed in (6a)–(6f). Again, the subcategories in (6a)–(6f) as well as the notion ‘cut’ have merely expository value, and we do not insist on their validity in Dogon semantics. Categories omitted from (6a)–(6f) include ‘jab-pierce-poke’, ‘trim-shave-peel’, and abstract ‘divide-segment’.

(6a) cut through or deeply into object

- $céjé$ ‘cut (meat, fabric) with slicing (not chopping) stroke of knife or scissors’
- $têrê$ ‘cut, chop (firewood)’
- chop (meat), cut (meat) with chopping (not slicing) motion’
- ‘cut off (branch)’
- ‘chop down (tree, with ax)’
- ‘clear (land, with axe)’
- $sényé$ ‘cut off (tree branch) by slashing with a machete or a trimming ax (e.g., to clear a tree trunk)’

(6b) cut long object

- $dâñâr^*â$ ‘cut (something long) in half’
- ‘cut (log) crosswise’
- $pêllé$ ‘cut off, sever (head, finger, branch)’
- ‘cut off the end of (object) to trim it’

(6c) long shallow cut (incision, strip)

- $kárâ$ ‘incise, make a long straight cut in the skin or surface of (something, somebody)’ [primary sense: ‘rip, tear’]
- $kárâ$ ‘cut open (belly of slaughtered animal) from neck to midsection’
- $cêgêrê$ ‘make a long surface incision or line in (e.g., meat, fabric), often to show a unit of sale’
- $sîr^*é$ ‘cut (meat, hide) into strips, cut off a strip of (e.g., cloth)’
- $cê^*$ ‘cut out (long sections of leather, for shoe)’
- ‘saw (gourd) in half (to make calabashes)’
- [also ‘slaughter, cut the throat of’; see section 9 below]

(6d) carve

- $lîwó$ ‘carve wood’
- $cêgêrê$ ‘carve (wood) or cut (e.g., paper) into a given shape’
- $tîyôrô$ ‘chop out (cavity in wooden mortar or drinking trough) with a special axe’
The closest thing to a general ‘cut’ verb is cějé in (6a), which also has figurative senses like ‘block (the passage of)’ (cf. cut off), ‘decide (a legal case)’, ‘break (one’s fast)’, and ‘fix, set (a date for an event)’. However, in the ‘cut’ domain, cějé means specifically ‘cut with slicing stroke’, and is most directly opposed to těrě ‘cut with chopping motion’. It is true that some of the more specialized verbs, like those in (6b), are more focused on the object than are cějé and těrě.

7. Verbs of hitting. In English, the phrasing X hit Y (and the noun blow) is a very general description of events where Y is impacted forcefully by a moving entity X. The impact may be from X’s main body, or an extension of X, such as a hand. The impact need not be intended. Forms of impact that usually exclude hit are those lexicalized as kick, step on (= tread on), strike (e.g., match), and poke.

‘Hit’ verbs in Jamsay are presented in (7a)—(7g). They are organized mainly by the body part or instrument that makes contact; other organizations are also possible, and we do not claim that either ‘hit’ or any of the subcategories shown is a valid basic category in Dogon semantics. Excluded from (7a)—(7g) are terms in the domains ‘pound (e.g., grain, with mortar and pestle)’, ‘shoot’, ‘grind-crush’, ‘cut’, and ‘harvest’.

(7a) direct broad impact by body, arm, or instrument
lágyá  ‘hit, strike’
’beat (with stick)’
’slap (the cheek of somebody)’
píti ‘tap lightly (something soft, e.g., fruit) with a stick’
’beat (clay, with a stone)’
dôqó ‘bump (somebody, from behind)’
dôrò ‘bump (somebody, from behind)’
’bump hard, ram’
têwé ‘hit lightly, tap’
’beat, play (tomtom)’
bâr”á ‘beat (tomtom)’ [also ‘become angry’, ‘be hot season’ < ‘be red’]
’play (e.g., guitar)’
pógó 'tap (e.g., the back of a can, so contents come out)'
       ‘tap (e.g., can against something, so its contents come out)'
       ‘tap (e.g., a sheet of paper, with one’s hand)'
       ‘jostle, bump into the side of (somebody)’

(7b) direct impact by head
   dàñá 'butt (with head)'

(7c) direct impact by foot
   támá 'kick (something, somebody)'
   lá: 'step in or on (something slimy, e.g., manure or mud)'
   námá 'step on, tread on, trample'

(7d) glancing impact (at an angle) against immovable surface
   péré 'strike (match, flint) to make fire'
       ‘strike (e.g., brick against the flat side of a stone, to chip off a piece)’

(7e) narrow impact (poking)
   dàjúró 'poke (somebody) by thrusting with a stick or other object'
   tíjé 'poke (somebody) with one’s finger'
   wégéjé 'poke with one’s finger or fingers (person to wake him up, ear to dislodge wax)'
   tá:“ 'snap one’s finger against (somebody, something)’ [also: ‘shoot’]

(7f) projectile impacts object
   něw'é '(projectile) strike, hit (target)’ [antonym of ‘miss’]

(7g) reciprocal impact (agent and two objects)
   kánjí 'knock, bang (objects together)’

In (7a), láýá can generalize to the sense ‘hit, strike’ with no strongly profiled M/P. However, its core sense is more specific, denoting forceful broadside impact of an extended object in one or two dimensions, especially a stick but also an open hand (as in a slap). As in English, ‘kick’ (etc.), ‘strike’, and ‘poke’ in (7c)–(7e) are lexically distinct (preempting láýá), but so are many other Jamsay ‘hit’ verbs that preempt láýá when their action profile is satisfied.

8. Verbs of agricultural activity (planting, cultivating, harvesting). Key verbs in English are X grow (or raise) Y, X plant Y, and X harvest Y, where Y is a crop (from seeds to ripened plant). The verbs do not primarily profile the specific M/P of the action, rather they focus on the R/F. Concomitantly, the (human or mechanical) agent is deemphasized in favor of the plant itself.

The most general verb in Jamsay for agricultural activity (French cultiver) is wárá, in a collocation with its own cognate nominal wárá, as in imperfective wárá wárá:Ø ‘he/she does farm work’ and in agentive wárá-[wárá-n] ‘farmer’. However, the basic sense of wárá is ‘dig up earth (with hoe)’. This involves bending over, extending the hoe in front of oneself and chopping it into the earth,
then scooping some earth and pulling it in toward oneself (for this purpose the Dogon hoe, the *daba*, has a sharply curved blade or handle base). This centripetal scooping action shapes the small mounds in which millet and sorghum are planted, and later removes weeds, thins out millet or sorghum sprouts, and reshapes mounds that have collapsed in the rains. Traditionally, hoeing was by far the longest and hardest work in the agricultural season. (Since about 1990, the plow, drawn by an ox or other beast of burden, has replaced some, but not all, hoeing.) Without its cognate nominal, *wàrâ* can also mean ‘scoop up (water) in the cupped palm of one’s hand’ (see section 12 below). Therefore the sense ‘do farm work’ of *(wàrû)* *wàrâ* is a generalization of the prototypical act of hoeing, and though it may denote a specific act of hoeing, it cannot denote an individual act of sowing or harvesting.

The normal procedure for planting millet or sorghum seeds involves two persons. One man with a long pick-hoe (French *pioche*) walks in a straight line, slashing the earth at short intervals. A second person (often a woman or a child) follows behind, drops a few seeds into the disturbed earth in each slash, and steps on it two or three times to tamp the seeds into the earth. The first action is denoted by the Jamsay phrase *tôy tô*: where *tôy* is a noun meaning ‘seedstock’ (i.e., seeds for sowing) and * tô*: is the cognate verb. The second action is denoted by *tôy nâmâ*, literally, ‘step on seedstock’. The first action, although it does not directly involve planting the seeds, is prototypical for the two-pronged action, and is used in such contexts as ‘Have you planted (millet) yet?’ There are other procedures for planting seeds (in relatively infertile parts of a field), and reports of specific instantiations of these procedures use the relevant specific expressions, e.g., Jamsay à-jâý” jâ.” ‘sow (seeds) in a dry pit with manure before the rains (in impoverished soil)’ and à-wégü wègé ’sow (seeds) in a pit with manure after the first rains’.

In English, crop products (as well as vital organs and electronic data) can be *harvested* using any appropriate gathering process, though an alternative verb *pick* is optionally used for cotton and berries that are harvested by hand. For Dogon, the harvesting process must be specified in more detail, and (like English *pick*) the verbs properly denote only the immediate act of separating the grain, fruit, or other product from the rest of the plant (8a)–(8g). There is no clear evidence for a general ‘harvest’ concept in Dogon.

(8a) *(jèrû)* jèrè ‘harvest (millet, sorghum) with a knife’
(8b) *(jèrû)* sà: ‘cut down (tall stems, e.g., of millet) with hoe or machete blade’
(8c) *wà*: ‘harvest (rice) by slashing with a sickle’
(8d) *sò*: ‘harvest (wild fonio grains) in a basket’
(8e) *wàgyô* ‘harvest (peanut plants) by pulling up with a daba’
 ’(somebody) collect honey (from a beehive)’
The major harvest in northern Dogon country is the millet (and sorghum) harvest, around late October. The ripe grain spikes (which for millet resemble ears of corn) are cut off just below their base using a small harvesting knife that is attached by a belt around one’s hand, so that one merely has to “punch” the stem with the base of the palm of one’s hand. The verb is jëré, given in (8a), which may be combined with its cognate nominal jërú ‘harvest’, or with a term meaning ‘millet’ or ‘sorghum’. Because the millet-sorghum harvest is the major agricultural event of the year, jërú is used to denote the time of year (usually late October) when it takes place. As seen below, jërú has a slightly broader sense and may also be combined with one ‘harvest’ verb other than jëré itself. The full millet-sorghum harvesting effort has several further stages after the cutting of the grain spikes: gathering the fallen spikes first into small piles and then into a larger pile at the edge of the field, organizing the spikes in bags and baskets, carrying them to the village, and sorting and arranging them in the granary for storage.

The action of sâ: in (8b) involves slashing or hacking through the stem with a hoe or similar long-handled blade instrument, either just above the ground or at the roots. The stems are used as livestock fodder or as thatch. The combination jërú sâ: (with noun jërú ‘harvest’) denotes the act of harvesting millet or other stems (for fodder or thatch).2

The other verbs in (8c)–(8g) involve distinct methods for harvesting other crops and wild grains. The verb wâ: in (8c) denotes a slashing action with a sickle whose blade is coming back in toward the agent; the same verb is used for ‘set (cock of rifle, by pulling it back)’, ‘pull back up, reposition (upper sleeve of boubou, on one’s shoulder)’, ‘rake up (dry grass) with rake or branch’, and more generally ‘pull (something) in toward oneself’. The verb sô: in (8d) involves knocking the grains of wild fonio (Panicum laetum), formerly an important crisis food, into a basket held under the plant.3 The verbs cé: and kû:rô in (8f) and (8g) are not attested elsewhere.

9. Verbs of killing and dying. The general Jamsay term for ‘kill’ is wô:. However, cé: “slaughter, cut the throat of” always supercedes wô:. The verb cé: focuses on the act of cutting across and through; for related senses (e.g., sawing a gourd), see (6c) above. The verb wô: is therefore effectively reduced to violent killings not involving throat-cutting. It is often chained with a preceding verb to specify the manner: nê:-wô:wô: ‘poison (somebody)’ (with nê:-wô ‘cause to drink, give something to drink to’), kûmó wô: (or pôrî wô:) ‘squash (e.g., a mosquito) in the palm of one’s hand’, and nâr’â wô: ‘miscarry, lose (baby) in childbirth’ (nâr’ná ‘give birth’). The verb wô: is also the “causative” counterpart
of ‘die’ in figurative emotion expressions: \([X \text{ mà cènè} wà:]\) ‘(somebody) disappoint X, let X down (e.g., after being well treated)’, literally, ‘kill X’s heart’.

Jamsay \(nîw^\circ\) ‘die’ and its Dogon analogues are not action verbs in the sense used in this article. Reporting a death is pragmatically sensitive, and ‘die’ is often replaced by euphemisms (‘X is not’, ‘X has passed on’, ‘X has returned to the Otherworld’, etc.). Of some interest is the fact that a distinct verb \(sà:tà\) is used in the sense ‘(animal that one could slaughter) die without being slaughtered (so it cannot be eaten by Muslims)’, as, for example, when a cow dies of natural causes. However, this is a borrowing from Fulfulde (the immediate source of most Islamic lexical items) and the concept is perhaps not a traditional Dogon one. The verb \(nîw^\circ\) ‘die’ is common in figurative emotion expressions (e.g., ‘X’s heart has died’, i.e., ‘X is sad or disappointed’), and in celestial expressions like ‘moon died’, i.e., ‘moon failed to rise before dawn (at the end of the lunar month)’.

10. Verbs of pouring and spilling. Tommo-So is rich in verbs in this domain. The data are presented in (9a)–(9g), omitting related domains such as ‘fill’ and ‘transfer’. The maximal sequence of events is: X inverts a receptacle containing a liquid or granular substance Y; Y exits the receptacle falling; Y lands on a surface (of another receptacle, of an object, or of the ground).

(9a) \(yùb\) ‘dump out, spill (liquid)’
    ‘dump out, spill (grain, sand)’

(9b) \(tógó\) ‘pour out, spill (liquid)’
    ‘pour out, spill (grain, sand)’

(9c) \(sélè\) ‘pour out (liquid) in a slow, steady stream’

(9d) \(wè:\) ‘pour (e.g., tea, millet) back and forth between two containers’

(9e) \(kólyé\) ‘pour water on one’s body’

(9f) \(kšéřé\) ‘pour water on a surface (not the body)’

(9g) \(párā\) ‘pour sauce (on meal)’

The primary ‘pour’ verb is (9a). It denotes the action of inverting a container and dumping out its liquid or dry contents, not necessarily into another receptacle. The verb (9b) denotes a similar, but slower and more controlled action. We bring out the distinction by glossing (9a) with ‘dump’ and (9b) with ‘pour’. The verb (9c) applies only to liquids. The verb (9d) denotes the very common act of pouring tea back and forth from a kettle to a glass and vice versa at a height, to aerate it. As shown in (9e) and (9f), Tommo-So (unlike Jamsay) distinguishes between pouring water on one’s body, as in bathing, and pouring water onto any other surface. The verb (9g) is limited to pouring sauce from a bowl or ladle.
11. Verbs of closing (and opening) and covering. In English, *open* and *close* (or *shut*) are used with reference to doors, windows, eyes, and mouths in spite of the clear differences in the manner of action. There is no particular connection between *open/close* and *cover/uncover*. Indeed, *open* and *close* are also used to bookend time intervals, as in *open/close a discussion*, showing that *open* is conceptualized as the initiating action while *close* reverses the action. By contrast, *uncover* (which physically resembles *open*) is a morphologically marked reversible derivative of *cover*.

In Jamsay, verbs glossable as ‘close’/‘open’ and ‘cover’/‘uncover’ partially overlap. Verbs for ‘open’ and ‘uncover’ are reversible derivatives with suffix $-rV$ or allomorph ($V =$ vowel). For example, ‘open’ is expressed as, literally, ‘un-close’, parallel to ‘un-cover’. In (10a)–(17b), ‘close’/‘cover’ verbs are shown in the (a) examples, and the corresponding ‘open’/‘uncover’ verbs are shown in the (b) examples.

(10a) $píné$  
    *lélé*: ‘shut (door)’ [also ‘gird oneself with, tie around one’s body (e.g., loincloth)’]

(10b) $píní-r”é$  
    *lil-lélé*: ‘open (door)’ [see also (12b), (14b)]

(11a) $sýři$: ‘lock’

(11b) $sýří-ró$: ‘unlock’

(12a) $tímné$: ‘shut (mouth)’

(12b) $píní-r”é$: ‘open (mouth)’ [see also (10b), (14b)]

(13a) $kiw”ó$: ‘shut (eye)’

(13b) $pínú-r”ó$: ‘open (eye)’

(14a) $tímné$: ‘put a lid on, cover (e.g., jar) with its lid’ [see also (12a)]

(14b) $píní-r”é$: ‘take the lid off (e.g., jar)’ [see also (10b), (12b)]

(15a) $góró$: ‘cover (somebody) with blanket or sheet’

(15b) $gór-ló$: ‘uncover, remove blanket or sheet from’

(16a) $dèvé$: ‘cover the opening of (e.g., jar, with e.g., a cloth)’ [also ‘surround’, etc.]
    $góró$: ‘cover the opening of (e.g. jar, with e.g. a cloth)’ [see also (15a)]

(16b) $dèl-lélé$: ‘uncover, take off the covering of (e.g., jar)’
    $gór-ló$: ‘uncover, take off the covering of (e.g., jar)’
Dogon doors and courtyard gates may be in one piece or may have two shutters. In either case, they are closed and opened, as in (10a) and (10b), by swinging the shutters on peripheral vertical hinges. Shutting one’s mouth, as in (12a), has a similar result (a passage from an interior space to the outside is blocked), but the process is different (the lips converge on a single plane, and the actual movement is unidirectional as the lower jaw moves up). The same verb tímné in (14a) is used for putting a lid on a container with an orifice. Shutting one’s eye in (13a) involves convergence similar to that for shutting one’s mouth, but the eyelids hug the contour of the eyeball rather than closing a passage. Other verbs of covering, where the thematic object is covered by an organically unrelated material, are in (15a)–(17b). The verb gòró, which appears in (15a) and (16a), denotes the act of placing a cloth, blanket, or sheet over a person (usually at night) or a container. The verb dèwu in (16a) competes with gòró in the container-covering scenario, but also means ‘surround, encircle (something)’ and by extension ‘attack (a village)’.

Although the domain of shutting and covering would seem to be intrinsically more focused on function/result than some other action verb domains, here, too, the M/P of the action is an essential part of lexicalization.

12. Verbs of scooping. As noted in section 8, a scooping motion is baked into the sense of the primary Jamsay verb for farming work, wàrà.

As seen in (18a)–(18g), Tommo-So is particularly rich in verbs of scooping, just as it is in verbs of pouring. The verb wàlá is cognate to Jamsay wàrà, and like the latter, it can also mean ‘do farm work’ when combined with the cognate nominal wòlú.

(18a) kóbí  ‘scoop (water) into a cup’
(18b) wàlá  ‘scoop (water) in the palm of one’s hand’
(18c) wèlé  ‘scoop a little water in a cup to drink’
(18d) kélé  ‘scoop (water) noisily from a nearly dry container’
(18e) sélé  ‘draw (water) from a nearly dry well, by dragging the bucket around’
(18f) tèle  ‘skim off (clean water from the top of a dirty well; a little liquid sauce from a pot)’
(18g) wàgú  ‘scoop (grain)’

In each case, the result is that the liquid or grain is captured in the hand or container. Aside from the distinction between wet in (18a)–(18f) and dry in
(18g), we can see that the liquid-scooping terms in (18a)–(18f) are distinguishable by M/P (as well as instrument). For example, the motion of a hand is quite different in dipping a cup into a liquid from what it is in scooping with one’s own palm. However, (18g) can refer to scooping either by hand or with a cup as long as the object is grain.

13. Comparison with other non-Western languages. As the result of a project based at the Max Planck Institute in Nijmegen, the verbs of cutting, breaking, and opening in various (mostly nonwestern) languages were compared in a special issue of *Cognitive Linguistics* (vol. 18, no. 2, 2007). Although the range of action verbs covered in the project was limited to verbs involving some kind of separation of the theme (i.e., the object), some contributors make suggestive comments about more general lexicalization strategies.

In that issue, van Staden says this about a Papuan language of Indonesia: “Tidore is a language that is rich in verbs describing separation events. It has very few general cut and break verbs, but instead forces the use of specific verbs. For example, Tidore distinguishes cutting with a small knife from cutting with a large knife and cutting with scissors” (2007:304).

Palancar makes a similar claim about an Otopamean language of Mexico, and (importantly) generalizes the point to a wide range of action verbs: “Otomi is a language with verbs which have very specific semantics, but lacks verbs that are generic superordinates. Other semantic fields [i.e., other than cutting and breaking] where a similar or greater degree of semantic specificity is observed are: having, grinding, falling and dropping, existence, location, extracting, tying, seeing, peeling, opening, etc.” (2007:314).

These passages are couched in terms of a scale of specificity, whose poles are, on the one hand, a few general verbs, and on the other, a larger number of more specific verbs. However, this scale can also be interpreted in terms of a cognitive set profiling M/P as opposed to result.

In the same issue, Levinson describes an unusual twist on a M/P focus for another Papuan language. His commentary makes it clear that this focus is related to phenomena of material culture that are specific both to this society and to the semantic domain of cutting and breaking (“C&B”) verbs. Therefore, no generalization to all action verbs is warranted by these data.

The Yeli Dnye verbs covering the C&B domain do not divide it in the expected way, with specialist verbs focusing on instruments and manners of action on one hand, and verbs focusing on the resultant state on the other. Instead, just three transitive verbs and their intransitive counterparts cover most of the domain, and they are all based on ‘exotic’ distinctions in the mode of severance—namely coherent severance with the grain vs. against the grain, on the one hand, and incoherent severance (regardless of grain) on the other. . . . All this accords with a material culture based on fibers and the relatively recent introduction of steel cutting tools. [2007:216]
Shifting to another type of verb, Rhodes describes the difference between Ojibwa (Algonquian) and English travel predications in terms of what we could call a profiling strategy: “The plot of that script is something like: *get in a vehicle—ride in the vehicle—get out of the vehicle.* The English convention is to refer to the riding portion of the script. The Ojibwa convention is to refer to the embarkation portion” (1977:508). See also Lakoff’s discussion of Rhodes’s example (1987:78).

These studies suggest that a serious cross-linguistic study of lexicalization strategies, and of the cognitive sets that underly some of them, is now possible. Unfortunately, generalizations of these types cannot be easily gleaned from conventional dictionaries or online lexicons. In theory it might be possible to detect such patterns from careful study of dictionaries, but only if the glossing is meticulous and if items from the same semantic domain are cross-referenced in a manner allowing the structure of the domain to emerge. In practice, dictionaries do not readily yield this type of information even at the level of particular semantic domains (such as cutting and breaking), never mind more global lexicalization strategies. The first author confesses that it would be difficult for him to extract such patterns even from fieldwork-based dictionaries that he previously published on other (non-Dogon) languages. We must therefore depend on lexicographically minded field linguists, native speaker linguists, and philologists to write specifically about these patterns and strategies.

The current trend of shifting from conventional print publication of alphabetically organized dictionaries to online dissemination of lexicographic data that can be sorted in various ways (including by semantic domain) will help in this respect. It is crucial, however, that each action verb have one or more glosses at least as detailed and precise as those given for Dogon verbs above, for example ‘cut (meat, fabric) with slicing (not chopping) stroke of knife or scissors’ rather than just ‘cut’. That is, the glosses should “paint a picture” wherever the semantics of the verb justifies it. A second major advantage of online dissemination is that video clips may be associated with lexical senses. In our work on Dogon languages we aim at precise glossing for the entire lexicon, and the project website seeks to achieve the functionalities mentioned (alternative sorting, and alignment of videos and still images to lexicon). As more websites like this appear for various non-Western languages, our ability to do serious cross-linguistic semantic analysis will burgeon.

14. Interpretations. We are not yet in a position to say how widespread the M/P and R/F cognitive sets are in languages of the world. However, given that Dogon and English (or Standard Average European) clearly differ, it is not too early to begin enumerating some possible lines of interpretation. Those given below are not necessarily mutually exclusive.

14.1. Language-typological. First, we should consider whether the grammatical structure of a particular language has an effect. In cross-linguistic
studies of motion predications (Talmy 1985; Slobin 2004), it has been notoriously
difficult to synthesize culturally significant differences (e.g., a focus on one or
another of physical medium, absolute or relative direction, transfer through a
container boundary, and manner). This is because each language has its own
division of labor between verbs, adverbial expressions (including adpositional
phrases), and grammatical formatives (such as centripetal-noncentripetal and
distributive morphemes). In addition, in verb-serializing languages, including
Dogon, motion predications are frequently expressed by combining verbs denot-
ing distinct semantic features of an event.

As noted in our unpacking of the semantics of *shoot* in (1), an action verb
evokes a conceptual frame including several subevents culminating in a final
result (we can debate which subevents are criterial, which are defeasibly or
indefeasibly presupposed, and which are implied). If a language allows two
verbs to be combined in a compoundlike construction, they might divide the
labor so that one verb denotes a chronologically early subevent while the other
denotes the terminal subevent. Or a verb denoting an early subevent might
divide the labor with a more abstract terminal verb (e.g., ‘finish’) or inflectional
marker (perfective, perfect, completive). More generally, language-specific syn-
tagmatic relations might skew action verbs toward earlier or later subevents.

Indeed, Dogon languages do allow verbs to be chained (= serialized), so that
one or more uninflected verbs readily combine with a terminal, fully inflected
verb. Can the focus on M/P in Dogon action verb semantics be attributed to
chronological subevent polarization of two verbs in a chain? A case could be
made for this in a few Dogon verb domains where such chains are in fact fairly
common. Among the domains considered above, the domain ‘hold, carry’ is most
relevant in this connection. Verbs like ‘carry (child) on one’s back’ (which
properly denote the act of putting the child up on the back) may be combined
with a following stative ‘have’ verb. Therefore, the relevant verb-verb chains
can be interpreted literally as ‘place (child) on one’s back (and) have (it)’;
compare English *I have* (= am holding) the baby on my back.

However, the prevalence of M/P focus in Dogon languages extends to a wide
range of other action-verb domains where such chaining is not significant. For
example, ‘eat’ verbs such as ‘munch on and suck (kola, sugar cane)’ are rarely
chained with other verbs that denote terminal subevents or resulting states. For
example, one does not normally describe a start-to-finish eating event by a chain
such as ‘munch (on) and swallow’. So the M/P lexicalization focus documented
above is not explained as a lexical adaptation to a verb-chaining syntactic en-
vironment. We cannot think of any other plausible syntactic-typological ex-
planations for Dogon verb semantics.

It would be interesting, however, to analyze action-verb lexicalization stra-
tegies in languages where most “verbs” are formally bipartite. This is the case in
Athabaskan and some other languages where many verbal senses are expressed
by pairing an uninflected verb-particle with an inflectable “auxiliary” verb.
Other language families such as Uto-Aztecan make extensive use of body part and other derivational or compounding elements that contribute, literally and figuratively, to lexical meaning. To the extent that the sense of a complex verbal lexeme is compositional, one would expect that the syntax would favor lexicalization strategies (for both the inflectable verb stem and the satellite elements) that differ materially from those in languages like English and Dogon that lack this division.

14.2. Technoenvironmental. A second approach is to look outside of grammar and consider the routinization of daily activities in a technologically simple society grounded in a fixed location (an agricultural village) or a well-trodden annual circuit (livestock herders, foraging bands).

In one version of this line of thought, influenced by information theory, we might begin by hypothesizing, first, that orally transmitted languages tend to have a similar number of verbs in common use (barring unusual typological features); second, that there are more M/P than R/F subevents, since, for example, there is more than one way to cut a piece of meat; and finally, that the repertory of recurrent human action schemata (i.e., those eligible for lexicalization) is relatively small and fixed in technologically simple societies (such as agricultural villages with one dominant crop, one growing season, and a largely invariant daily food-preparation routine). One might predict, from the intersection of these hypotheses, that the relevant languages would tend to lexicalize at the M/P level.

However, this interpretation does not illuminate simple atelic activity verbs, such as verbs of motion. Here, Dogon languages have a rather English-like repertory, with ‘go’ versus ‘come’, ‘exit’ versus ‘enter’, ‘ascend’ and ‘descend’, ‘leave’ (i.e., ‘exit’) and ‘arrive/approach’, and an unremarkable set of manner-of-motion verbs (‘run’, ‘walk’, ‘fly’, ‘crawl’). Likewise for intransitive verbs of stance. So an information-theoretic approach would have to explain the difference between action verbs and activity verbs.

Alternatively, one could start from another set of hypotheses: first, in a technologically simple community, the R/F of an action is easily predictable from its M/P; and, second, in such a community (especially in a very hot climate) most recurrent human actions are carried out in (semi-)public places (courtyards, streets, paths, fields) and so are readily observable by the community. Regarding the second hypothesis, in Dogon villages food preparation, herding, family and community rites, farming, chopping firewood, Islamic worship, slaughtering livestock, weaving cotton cloth, dyeing fabrics, forging tools, basket-making, tanning hides, and pottery-making all take place in (semi-)public locations. In spite of a rigid sexual division of labor, and despite ethnic and caste specialization in artisanal occupations, villagers are quite knowledgeable about activities that they observe even if they do not personally practice them. The combination of these two hypotheses could reasonably lead to a
lexicalization strategy focusing on M/P. By comparison, in a technologically advanced (i.e., fragmented) society, whose members usually do not directly observe, and may be ignorant of, the actions that produce food and other products, a focus on R/F (including resulting state) may be more appropriate.

14.3. Evidential and ethnopsychological. A third explanatory approach would be to hypothesize that Dogon (and others with similar lexicalization strategies) prefer to profile the directly observable and therefore evidentially unproblematic surface of human behavior, rather than interpreting the motives and purposes underlying such behavior. One point to consider in this respect is that while an action is in progress, its result is not yet realized. Therefore, in progressive-aspect contexts (‘X is cutting the meat’) and in reports of incompletely observed past events (‘I saw X cutting the meat’), the M/P component has an evidential status more secure than that of the R/F component.

Or, one could take the lexical data as one among several expressions of broad, culturally variable ethnopsychological patterns. This would take us uncomfortably far from our own disciplinary competence, but we note that such cultural differences have been claimed in the literature on national and ethnic character. For example, Shimahara comments that “Japanese society tends to focus upon processes rather than results” (1986:19) and attributes the high achievement level of Japanese (versus American) students to this pattern. Nisbett likewise argues that Japanese analysis of historical events follows the subevents one by one in chronological order, while American analysis begins with the outcome and then identifies causal factors behind it (2003:127–28).

If at some point we can construct an “atlas” of action-verb lexicalization strategies, whether binary or shaded, we can begin to shift from first-order analysis (also known as “description”) to causal interpretations. It might turn out that the R/F set seen in English or Standard Average European is a minority pattern, in which case the ethnographic spotlight should be turned back on ourselves.

Notes

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Transcription. Superscripted ‘n’ indicates nasalization.

1. Both Jamsay and Tommo-So are spoken over a wide area and their other dialects may draw semantic distinctions differently.

2. Jamsay sá: (or more likely a homonym) is also the verb ‘reply’. Fixed collocations ègèjé sá: ‘give out a sneeze’ and sêy sá: ‘perform the sey (women’s dance with tomtoms)’ may also involve homonyms.
3. Other senses of Jamsay só: are ‘dip briefly (e.g., piece of millet cake in sauce, clothing in water)’, ‘wind (cotton thread) in shuttle of loom’, and the modern extension ‘rewind (cassette) with a stick, by spinning’.

4. In a direct chain, the nonfinal verbs occur in a bare stem or similar uninflected form. The effect is a kind of verb-verb compound. Dogon languages also have marked chains, where nonfinal verbs lack pronominal-subject (agreement) inflection, but are followed by a chain marker (suffix, clitic, or particle). In several Dogon languages, this marker indicates same-subject or switch-subject vis-à-vis the subject of the final inflected verb.

5. ‘Have’ in Dogon languages is a defective stative verb morphologically, but its form is orthogonal to the point made here.

6. A further typological issue is raised by the root-and-pattern analysis of Semitic and some other languages, which (if taken to its logical conclusion) forces us to recognize lexical roots more abstract than verb, noun, or other stems. However, there are doubts about the validity of the root-and-pattern model even on morphophonological grounds. For a range of views on Arabic and Hebrew word structure, see the papers in Shimron (2003).

7. Blacksmiths, leatherworkers, dyers, and basket-makers, as well as griots (bards), are “people of caste,” though distinct from (ex-)slaves.

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