The use of ‘liver’ in Dogon emotional encoding†
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The Dogon languages of Mali lack independent emotion vocabulary, instead encoding both emotions and character traits in idiomatic expressions containing the word ‘liver’. There are two main categories of constructions employed in these expressions: ‘liver’ modified by an adjective or ‘liver’ used as the patient of an intransitive or transitive verb. The former category can be further divided into canonical N+Adj constructions and bahuvrihi compound modifiers. This chapter investigates the strong correlation between the either emotion or character trait expressions and the choice of grammatical construction. Specifically, we found that bahuvrihi compound modifiers are used exclusively for expressing character traits, while verbal constructions are used exclusively for emotions; N+Adj constructions tend towards character traits, but may also encode emotions. We argue that a scale of predicativeness accounts for these facts, with character trait expressions on the low end of the scale and emotions on the other.

1. Introduction

In the Dogon languages of east central Mali, emotions are typically encoded in expressions containing the word ‘liver’. The use of a stem meaning ‘liver’ in emotional vocabulary is common cross-linguistically, attested in Chewong (Mon-Khmer, Malaysia; Howell 1981), Hmong (Hmong-Mien, across Southeast Asia; Jaisser 1990), Ponorogo Javanese (Malayo-Polynesian, East Java; Weiss 1977), Malay (Malayo-Polynesian, Malaysia; Charteris-Black 2002), Chinese (Sino-Tibetan, China; Yu 2002), Hebrew (Semitic, Israel; Smith 1998), Kambera (Malayo-Polynesian, Indonesia; Klamer 2000), among others. Even in Western culture, from ancient times until relatively recently, the liver was viewed as the seat of the soul and the source of emotional disturbances (Reuben 2004). Relics of this view remain in English, in sayings like lily livered ‘cowardly’ or liverish ‘unhappy or bad-tempered’. What is of interest in the case of Dogon is not so much that ‘liver’ is used, but rather the near-total absence of emotion-specific vocabulary. That is, while some languages may express emotions metonymically through expressions like My liver is angry (wherein liver represents the emotional self), the Dogon languages instead modify ‘liver’ with generic adjectives (color terms, size terms, etc.) or use it with a variety of verbs, and these expressions then take on a set meaning for emotions or for character traits (henceforth referred to as simply “character”).

The goal of this chapter is to show how different emotion and character type expressions are categorized into various grammatical constructions; that is, we aim to demonstrate how the grammar of the language can reflect psychological divisions between different feelings. The extent to which these grammatical divisions represent divisions in the speakers’ conceptualization of the world remains an open question. While some evidence

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supports the view the worldview of the Dogon people drives the conceptual metaphors underlying these expressions (Lakoff and Johnson 1980, Kövecses 2000), this may in fact be a two-way street. The conceptualization of the world may give rise to these expressions, or the very existence of these idiomatic expressions may give rise to a worldview, without the speakers literally believing that something is happening to the liver when angry (Enfield 2002). The two ends of this spectrum seem to mirror the synchronic vs. diachronic debate in linguistics (Blevins 2004, Kiparsky 2006, Anderson 2008), but in the interest of space, we defer discussion of the point to a later time. Here, we will present the data and give a linguistic analysis of the forms, focusing on structural differences between emotion and character expressions and variation in the specific readings of liver-adjective and liver-verb constructions.

1.1 Dogon Languages

The Dogon language family is comprised of around 20 languages spoken on and around the plateaus and inselbergs of Mali’s Mopti Region (Heath 2008). While classified as Niger-Congo, Dogon’s exact position within this lineage is unclear; it is currently thought to constitute its own branch (Blench 2005). The languages are typically SOV, with two tonal primitives, isolating nominal morphology, and agglutinating verbal morphology. (For unpublished descriptions of many of these languages, see the Dogon Language Project’s website at www.dogonlanguages.org.) Certain groups of speakers are in close contact with Fulfulde, Bambara, or Songhay speakers, and bi- or trilingualism is quite widespread.

This paper will consider data from nine languages: Northeastern Ben-Tey (BnT, Heath) and Jamsay (Jm, Heath 2008), North Central Nanga (Ng, Heath) and Yanda-Dom (YnD, Heath), Northwest Najamba-Kindige (NjK, Hantgan and Heath), Central Tommo-So (TmS, McPherson), Eastern Yorno-So (YrS, Heath) and Sangha-So (SgS, Calame-Griaule 1968), and South Central Togo-Kan (TgK, Heath), and Western Mombo (Mm, Prokhorov) and Ampari (Am, Prokhorov).

1.2 ‘Liver’ and other anatomical terminology

The lexeme used in all of the expressions in question refers on its own to the liver. Speakers will also translate it as ‘heart’ in an emotional sense, possibly to conform with the French usage of cœur as the emotional center. However, in all of the languages considered here, the physical organ ‘heart’ is a compound of ‘liver’ plus some modifying noun. (1) gives ‘liver’ and ‘heart’ for each language:

(1) Language Liver Heart

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1 Calame-Griaule’s (1968) dictionary was our only source of emotion data for this paper, and as such, we are limited to what she described. It is probable that Sangha-So has at least some of the constructions seen in the other languages. Additionally, her marking of tone is sporadic and preliminary work by Moran and others suggests that it could be incorrect.

2 All data are either taken from the unpublished lexical database available at <www.dogonlanguages.org> or elicited specifically for this paper by Prokhorov.

3 This suggests that the phonological string meaning ‘liver/emotional core’ may indeed be polysemous, rather than ‘liver’ the organ literally being used in emotion metaphors (Enfield 2002).

4 The two West Central Dogon languages, Mombo and Ampari, have a separate lexical stem for ‘heart’, which is then used in emotional expressions of the type described here. The word for ‘liver’ is cognate with the other languages.
The verb ‘cry’, discussed in section 3. Cases like these are the exception rather than the rule in sad liver would indicate that one is sad. This is similar to the case where liver combines with ‘contented’, which means ‘sad’. Even in this case, though, it typically modifies ‘liver’, so having a sad liver would indicate that one is sad. This is similar to the case where liver combines with the verb ‘cry’, discussed in section 3. Cases like these are the exception rather than the rule in

In addition to the compound, Jamsay can also use simply ‘liver’ to mean ‘heart’.

In Mombo and Ampari, ‘liver’ and ‘heart’ have different stems, yet ‘heart’ is still a compound, and like the other Dogon languages, the compound-initial word is still used in emotional expressions:

<table>
<thead>
<tr>
<th>Language</th>
<th>Liver</th>
<th>Heart</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ampari</td>
<td>célè</td>
<td>célè yë́</td>
</tr>
<tr>
<td>Mombo</td>
<td>këndà:</td>
<td>këndà: sósòrò:</td>
</tr>
</tbody>
</table>

In the interest of space and consistency, however, we will focus here on those languages using the stem for ‘liver’ when speaking of emotions.

The names of some other organs are also compounds with ‘liver’. All of the languages considered here use such an expression for ‘spleen’. For instance, këndà bárà (YnD), këndè pààràá (TmS), or célè mpàréy (YrS). Three languages include ‘liver’ in the compound for ‘lungs’: (célè) pùsù-pàsà (BrT), kìndè bùúdú-bààdú (TmS), and këndè pùsù-pâs (Ng). A different set of three languages include ‘liver’ in the word for gall bladder; all literally translate as ‘bitter liver’. These are cênè jë:rù (Jm), kêlè gàirim (YrS), and këndè gárè (Ng).

We can generalize and say that only organs in the upper abdomen (enclosed by the ribcage) contain the word ‘liver’. It is perhaps unsurprising that the liver has the basic lexical item in this case, given its larger size and central location, which speakers would be exposed to when butchering livestock. More specifically, in butchering, the heart, liver and lungs are removed together in one piece, giving rise to the idea that at least the three together form a single complex organ that, due to its position in the upper abdomen, comes to be seen as the seat of the emotions. We will return to the point about the upper abdomen in the conclusion.

1.3 Emotion-specific vocabulary

Before delving into the wide array of ‘liver’ constructions, we would like to briefly address the few cases of emotion-specific vocabulary in the Dogon languages. Most of these that we were able to find were either ideophonic, like Toro Tegu sààòko-sòòko ‘happy, contented’, or borrowings from Fulfulde. An example of the latter is the word hiyàm ‘joy’, borrowed by Jamsay, Nanga, Ben-Tey and Toro Tegu (hiyàm). Tommo-So has one stem, nàgú, which means ‘sad’. Even in this case, though, it typically modifies ‘liver’, so having a sad liver would indicate that one is sad. This is similar to the case where liver combines with the verb ‘cry’, discussed in section 3. Cases like these are the exception rather than the rule in

5 All languages seem to have a related modifying word, which has no independent meaning.
emotional encoding. Hence, the chapter focuses on the main emotional encoding strategy, namely, expressions containing the word ‘liver’.

In what follows, we will first present ‘liver’+adjective constructions, highlighting the difference between adjectives directly modifying ‘liver’ and those involved in a bahuvrihi compound with it. In section 3, we will turn to ‘liver’ in verbal constructions, either as the subject of an intransitive verb or the object of a transitive, with specific discussion of syntactic aspects of the constructions correlate with emotion or character trait expressions. Finally, we briefly address what the data mean for the Dogon worldview suggest future directions of study in the conclusion.

2. ‘Liver’ modified by an adjective

The Dogon languages, like many African languages, have only a very small set of true adjectives, distinguished by their morphology from nominal or verbal modifiers. This set typically includes terms of COLOR, DIMENSION, AGE, VALUE, PHYSICAL PROPERTIES, and SPEED (Dixon 1977). Many of these adjectives can modify ‘liver’ to create emotion or character-trait expressions with a fixed, and often unpredictable, meaning. Every language does not use the same set of adjectives, and interestingly, while many of adjective combinations carry the same metaphorical meaning across languages, there are cases where languages use the same combination to a different end. We will highlight these cases below.

Two different grammatical constructions can be used in adjectival emotion expressions. The first is the typically noun-modifier construction, where ‘liver’ is modified by the adjective in question. In the Dogon languages, when a noun is modified by an adjective, the lexical tone of the noun is replaced with a low tone overlay. For example, (TmS) kîndɛ ‘liver’ modified by bánú ‘red’ becomes kîndɛ bánú ‘anger’. Since the resulting phrases are still nominal (literally “red liver”), they cannot be used to modify the person feeling an emotion. Instead, a possessive construction is typically used, translating to I have a [X] liver:

(2) Tommo-So
Kîndɛ bánú yé-sê-m.
liver.L red EXIST-have-1SG
‘I am angry.’ (Lit. ‘I have a red liver.’)

The second is in the form of a bahuvrihi compound (as in English fathead), wherein the initial member of the compound is a noun and the second an adjective ascribed to that noun, and “the compound as a whole describes a person or other entity who is characterized by the denotatum of the initial noun as modified by the adjective” (Heath 2008:219). The tone pattern differs from that described for canonical noun+adjective expressions. The modified noun in the compound (in this case, ‘liver’) no longer undergoes tone lowering, instead retaining its lexical tone while adjective receives a HL overlay. Where the tone break from H to L happens is language-specific. Since this whole compound then acts as a modifier, the compound initial which is modified receives the L tone overlay of the modified noun:

(3) Tommo-So
nîdɛ kîndɛ ésù

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6 In glosses, .L indicates a L tone overlay. Similarly, .HL would indicate a HL tone overlay. 
7 Unlike traditional bahuvrihis, these Dogon compounds can be used to modify an external head, perhaps making them closer to synthetic ‘blue-eyed’ type compounds; following Heath (2008), we will continue to use the term bauvrihi.
Of the languages discussed, only four (Jm, Ng, TgK and TmS) show evidence of bahuvrihi constructions in character expressions.

As we will demonstrate below, the two constructions are not used equally with emotion and character expressions. From our set of data, it appears that emotion expressions are restricted to canonical noun+adjective constructions, while character expressions can be formed in either way.  

2.1 Emotion expressions

In example (2), we saw the first instance of a noun+adjective expression being ascribed to an emotion. Every language with the expression ‘red liver’ uses it to mean ‘anger’ or ‘angry’, and every language uses this canonical modifier construction rather than a bahuvrihi construction:

(4) | Language | ‘Red liver’ | Gloss |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BnT</td>
<td>cèlè bàr’áyə</td>
<td>‘anger’</td>
</tr>
<tr>
<td>Jm</td>
<td>cènè bán</td>
<td>‘anger’</td>
</tr>
<tr>
<td>Ng</td>
<td>kèndè bár’í</td>
<td>‘anger’</td>
</tr>
<tr>
<td>SgS</td>
<td>kíne bánú</td>
<td>‘anger’</td>
</tr>
<tr>
<td>TmS</td>
<td>kíndè bánú</td>
<td>‘anger’</td>
</tr>
<tr>
<td>TrT</td>
<td>cèlà bár’âò</td>
<td>‘anger’</td>
</tr>
</tbody>
</table>

In addition to the noun+adjective construction, various languages can also use ‘liver’ as the subject of an intransitive verb meaning ‘become red’. For example:

(5) Tommo-So

Kíndè mì=mò bánáá wɔ.  
liver 1SG=POSS redden.PFV be  
‘I am angry.’ (Lit. ‘My liver has become red.’)

This intransitive verb is what is then used with a causative suffix to mean ‘anger (someone)’, in which case ‘liver’ becomes the object. It is interesting to note, however, that this particular verbal derivation is only used in the emotional sense. A verb báná-ngí-yé, derived from the adjective with overt factitive and mediopassive suffixes, is used for physical color changes. This suggests that such emotional expressions as these are lexicalized, and that the compositional meaning is not necessarily transparent.

This first metaphor seems firmly rooted in the near-universal ANGER IS FIRE conceptual metaphor (Kövecses 1986). Evidence for this stems from the fact that Dogon languages often use ‘red’ in other contexts involving intense heat. For instance, ‘hot season’ (March-June) in many languages is expressed as ‘red sun’, ex. nàm bánú (TmS). This red color most likely stems from the color of fire or the color of heated metal. Thus, when one’s liver is red, it is hot, and where there is heat, there is the fire that is anger.

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8 The data on the split between attributive and bahuvrihi constructions are preliminary. More vigorous study will be required to determine the full range of expressions that are allowed to be in bahuvrihi form and to find those expressions that can be either.

9 The usual form of the adjective ‘red’ is bár’ã. It is unclear what the morphology is in this case that makes the adjective surface as bár’ã.
As we will see, the other two color adjectives (‘white’ and ‘black’) are not used to encode emotions, but rather character traits. In fact, the only other adjective with a strictly emotional use is ‘sweet’. All six languages that have the expression ‘sweet liver’ use it to mean ‘happiness’:

<table>
<thead>
<tr>
<th>Language</th>
<th>‘Sweet liver’</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>BnT</td>
<td>cèlè èrú-m</td>
<td>‘happiness’</td>
</tr>
<tr>
<td>Jm</td>
<td>cènè èrù</td>
<td>‘happiness’</td>
</tr>
<tr>
<td>Ng</td>
<td>kędè èrì</td>
<td>‘happiness’</td>
</tr>
<tr>
<td>TmS</td>
<td>kìndè élélú</td>
<td>‘happiness’</td>
</tr>
<tr>
<td>TgK</td>
<td>kènè élú</td>
<td>‘happiness’</td>
</tr>
<tr>
<td>YnD</td>
<td>kìndà ěl</td>
<td>‘happiness’</td>
</tr>
</tbody>
</table>

This expression is also not uncommon in other languages. For instance, ‘happiness’ in Thai is dii^3 cay^3 ‘good heart’. Since happiness is the quintessential good feeling, and Dogon languages typically use adjectives like ‘sweet’ or ‘pretty’ more often than ‘good’ explicitly, it is not surprising that ‘sweet liver’ is used to express happiness. Note that like ‘anger’ above, ‘happiness’ can also often be expressed with an intransitive verb meaning ‘become sweet’.

One last adjective, ‘cold’, has an emotional reading in three languages, including Tommo-So, where the same adjective in a bahuvrihi compound with ‘liver’ gives a character reading instead. This is the first indication we get that the bahuvrihi construction is associated with character expressions. In the attributive construction, ‘cold liver’ has the meaning ‘proud, satisfied, relieved’. These languages are:

<table>
<thead>
<tr>
<th>Language</th>
<th>‘Cold liver’</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jm</td>
<td>cènè tóm</td>
<td>‘proud, satisfied, relieved’</td>
</tr>
<tr>
<td>TmS</td>
<td>kìndè kálálú</td>
<td>‘satisfied’</td>
</tr>
<tr>
<td>TgK</td>
<td>kènè tó:n</td>
<td>‘proud, satisfied, relieved’</td>
</tr>
</tbody>
</table>

In Nanga, instead of using the adjective ‘cold’, they use the intransitive verb meaning ‘cool off’ to the same end:

<table>
<thead>
<tr>
<th>Language</th>
<th>‘Cold liver’</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nanga</td>
<td>Kènèd kɔɔ</td>
<td>támí-yi-èrè.</td>
</tr>
<tr>
<td></td>
<td>1SG.POSS liver</td>
<td>cool.off-MP-PFV</td>
</tr>
</tbody>
</table>
|          |               | ‘I am proud (satisfied, or relieved).’ (Lit. ‘My liver has cooled off.’)

Here the relationship between the literal translation and the emotional reading becomes more metaphorical. In general, the Dogon languages treat heat as a negative force, leaving its opposite, cold, to take on a positive reading. Perhaps this is unsurprising in a desert climate where coolness spells relief.

We will conclude this section with the Tommo-So character expression using ‘cold’, which will bring us to the §2.2, where we discuss adjectival character expressions in more detail. While the attributive construction with ‘cold’ means ‘satisfied’, the bahuvrihi construction ǹdè kìndè kálálù means ‘a person who is calm, quiet or does not speak very much’. This is again related to the verb ɔ̀gí-rɔ̀ literally ‘heat up’, which is used to describe pressuring or harassing. After such an encounter, one can say Gàndá = gè kálá-ndì-yáá wɔ̀ ‘the place cooled(=calmed) down’, and so it is logical here that a ‘cool-livered person’ is someone with an inherently calm personality.
2.2 Character expressions

The majority of adjectives derive character expressions rather than emotion expressions, and these expressions can either take the form of the attributive construction or bahuvrihi compounds. Derived inchoative verbs of the sort seen above for ‘angry’ or ‘proud’ are not used in character expressions. We hypothesize that the reason this is so is because character traits, unlike emotions, have no beginning or end point, which could be expressed verbally—they simply are a quality of the person, making them a natural candidate for bahuvrihi compounds and a completely unnatural candidate for inchoative verbs. The Dogon languages are not alone in making this grammatical distinction between emotion and character expressions. Hausa (Russ Schuh, p.c.) also distinguishes between a fleeting emotional state of happiness and an overall happy personality, the former expressed with a verbal construction (Lit. ‘I did white-stomach’) and the latter with a possessive construction (Lit. ‘I have a white stomach’).

There are 17 adjectives of which we are aware that are used in character expressions: ‘bad’, ‘big’, ‘bitter’, ‘black’, ‘clean’, ‘deep’, ‘fat’, ‘good’, ‘hard/dry’, ‘heavy’, ‘hot/fast’, ‘light’, ‘little’, ‘pretty’, ‘soft’, ‘sour’, and ‘white’. In the interest of space, we will focus on those adjectives that languages use differently. The following table sums up the adjectives with a single character reading:

<table>
<thead>
<tr>
<th>Adjective</th>
<th>Gloss</th>
<th>Languages</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>small</td>
<td>‘flighty, one whose moods change easily’</td>
<td>Jm, Ng</td>
<td>Attributive</td>
</tr>
<tr>
<td>pretty</td>
<td>‘kind, generous’</td>
<td>Ng, TmS</td>
<td>Bahuvrihi</td>
</tr>
<tr>
<td>sour</td>
<td>‘bad character’</td>
<td>TmS</td>
<td>Attributive</td>
</tr>
<tr>
<td>heavy</td>
<td>‘one who reacts slowly (not stupid, just slow)’</td>
<td>Jm, TgK, Ng</td>
<td>Attributive</td>
</tr>
<tr>
<td>light</td>
<td>‘brash, one who reacts quickly without thinking’</td>
<td>Jm, TgK, Ng</td>
<td>Attributive</td>
</tr>
<tr>
<td>soft</td>
<td>‘peaceful, cheerful (one who is loved by children)’</td>
<td>TmS</td>
<td>Attributive</td>
</tr>
<tr>
<td>clean</td>
<td>‘sincere, honest, frank’</td>
<td>Ng, TmS</td>
<td>Bahuvrihi</td>
</tr>
<tr>
<td>deep</td>
<td>‘violent, sadistic’</td>
<td>TmS</td>
<td>Bahuvrihi</td>
</tr>
</tbody>
</table>

While we will not analyze each expression here, it is interesting to note that the antonymous relationship between ‘heavy’ and ‘light’ extends to their metaphorical uses as well.

We turn first to the remaining color terms, ‘white’ and ‘black.’ ‘White’ is always used attributively, and though consistently positive, there is variation in the exact meaning of the expression, as can be seen below:

<table>
<thead>
<tr>
<th>Language</th>
<th>‘White liver’</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Jm</td>
<td>cènè pírú</td>
<td>‘sincere, honest, frank’</td>
</tr>
<tr>
<td>Ng</td>
<td>kèndè pírú</td>
<td>‘sincere, honest, frank’</td>
</tr>
<tr>
<td>SgS</td>
<td>kíne pílu</td>
<td>‘sincere’</td>
</tr>
<tr>
<td>TmS</td>
<td>kindè pílu</td>
<td>‘frank, candid’</td>
</tr>
<tr>
<td>b. TgK</td>
<td>kènè pírú</td>
<td>‘generous’</td>
</tr>
</tbody>
</table>
In most languages that have the expression ‘white liver’, it translates roughly to ‘frank’ or ‘sincere’, except for in Togo-Kan, where it means ‘generous’. These positive, though varied, translations are unsurprising given the speakers’ perceptions of ‘white’ as clean or pure.

In contrast, ‘black liver’, attested in same five languages, is negative across the board. In the four languages recently confirmed by the second author, ‘black liver’ had the same meaning when referring to donkeys: ‘stupid’. However, the meaning for humans varies slightly, and some languages treat this expression as a bahuvrihi (bh) compound.

(11)

<table>
<thead>
<tr>
<th>Language</th>
<th>‘Black liver’</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Jm</td>
<td>cénè jémǐ (bh)</td>
<td>‘dishonest, malevolent’</td>
</tr>
<tr>
<td>Ng</td>
<td>kēndě jémǐ</td>
<td>‘dishonest, malevolent’</td>
</tr>
<tr>
<td>TgK</td>
<td>kēnè gěn</td>
<td>‘dishonest, malevolent’</td>
</tr>
<tr>
<td>b. SgS</td>
<td>kíne gětɔ</td>
<td>‘begrudging, stubborn’</td>
</tr>
<tr>
<td>c. TmS</td>
<td>kíndě gěm (bh)</td>
<td>‘fiery-tempered, violent’</td>
</tr>
</tbody>
</table>

The translations in (a) show a partially antonymous relationship with ‘white liver’. Where the latter means ‘honest’, the former means ‘dishonest’. Additionally, all of the languages above have an element of violence or resent in their usage of ‘black liver’. Again, this is paralleled in other languages, as in Thai cay² dam² ‘mean’ (literally ‘black heart’) or even English black-hearted meaning ‘wicked’ or ‘morally bad’.

Moving on to size adjectives, we find ‘big’ employed in bahuvrihi compounds by two languages, Tommo-So and Nanga, in two different but related ways: kǐndè díɛ ‘scrapper, (one) who likes to fight’ (TmS), kēndě ɔwɔ ‘(one) who does not calm down fast once angry’ (Ng). Jamsay uses the attributive construction: cēnɛ ɡârâ ‘fiery-tempered’. This is a diversion from the English conception of ‘big heart’ being a positive attribute. However, if we consider instead that the organ in question is the liver, seen as the source of negative emotions or bile, then perhaps a larger liver is equal to more negative feelings, like the desire to fight or the propensity for anger.

We see a similar definition for ‘fat liver’. Here, two languages have the same translation of ‘fiery-tempered’: kēndè dúgî (Ng), a bahuvrihi, and kēnɛ mārâ (TgK), an attributive construction. These have exact same translation as ‘big heart’ in Jamsay. The other translation for ‘fat liver’ is in Tommo-So, kīndɛ póò ‘stubborn’. This is similar to the Sangha-So translation for ‘big liver’, suggesting that even if speakers do not consciously break down these metaphorical expressions into their component parts, there was a certain degree of compositional meaning in the past when the expressions developed, namely, that adjectives expressing large dimensions (be that ‘fat’ or ‘big’) led to similar idiomatic meanings.

In the last section, we saw that ‘sweet liver’ is used in the emotion expression ‘happy’. Another taste adjective, ‘bitter’, is used in character expressions in two languages: kēnɛ tɔr-tɔr ‘sour, with a bad character’ (TgK) and kēndɛ gâri ‘vicious, violent’ (Ng). ‘Violent’ and ‘sour’ are two very distinct character traits (having one does not necessitate having the other), but both are distinctly negative. Even in languages that do not use ‘bitter’ with ‘liver’, like Tommo-So, it is used in other negative expressions, like kibɛlɛ gâlãlî ‘bad (lit. bitter) news’ or gândɛ gâlãlî ‘bad (lit. bitter) place (to live)’.

In the Dogon languages, the same stem is used for ‘hot’ and ‘fast’, and both translations are equally basic. Five languages use ‘hot/fast liver’, and all four have the same meaning: ‘quick-tempered’ (though less so than ‘fat liver’). Our Nanga consultant notes that “these people have their hearts closer to their heads than normal people”. Both Togo-Kan and
Nanga can use this expression through either a bahuvrihi compound or an attributive construction. In Jamsay and Tommo-So, only the attributive construction is used. The reason we did not list ‘hot/fast liver’ under the table in (9) is that Tommo-So has an additional meaning for the expression: ‘one who cannot keep secrets’. The first translation makes sense on two levels. First, the ‘fast’ reading of the adjective is mirrored in the speed at which the person gets angry; second, the ‘heat’ reading again relates back to the ANGER IS FIRE conceptual metaphor. Both the speed reading and the heat reading are required to arrive at the meaning ‘quick-tempered’. The novel Tommo-So reading, however, is less obvious. It is perhaps related to another expression with ‘mouth’, àŋà́gú, literally ‘hot/fast mouth’, meaning someone who speaks things too quickly without being asked. Why exactly the liver also gives a similar reading is not clear. It could still be related to the ‘quick-temper’ reading, since those with quick tempers are liable to run their mouths with little provocation, while those who cannot keep secrets are liable to open their mouths at inappropriate times.

We turn now to evaluative adjectives ‘good’ and ‘bad’. Three languages use ‘good liver’ with two different translations: kindë së́ ‘peaceful’ (TmS), and këndë ësì (Ng) and kënë së́ (TgK) ‘wise’. These both portray a passively good quality (unlike more active good qualities like excitement or joy). The same three languages with the addition of Jamsay use ‘bad liver’. Unlike other pairs seen above, the metaphorical meanings are not antonymous with ‘good liver’. We see the following translations:

(12)

<table>
<thead>
<tr>
<th>Language</th>
<th>‘Bad liver’</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Jm</td>
<td>cëné mòñù</td>
<td>‘vicious, evil’</td>
</tr>
<tr>
<td>TmS</td>
<td>kindë pààdíé</td>
<td>‘vicious, evil’</td>
</tr>
<tr>
<td>b. TgK</td>
<td>këné mòñù (bh)</td>
<td>‘vicious, violent’</td>
</tr>
<tr>
<td>c. Ng</td>
<td>këndë mòsì (bh)</td>
<td>‘vengeful, vindictive’</td>
</tr>
</tbody>
</table>

Like ‘black liver’, they are all very close in meaning without being exactly identical. Nevertheless, it is clear how an expression with the adjective ‘bad’ would lead to a quintessentially negative character trait like ‘violent’ or ‘evil’.

Finally, five languages use the adjective meaning ‘hard’ or ‘dry’ in character expressions. The table in (13) summarizes these uses:

(13)

<table>
<thead>
<tr>
<th>Language</th>
<th>‘Hard/dry liver’</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Jm</td>
<td>cëné màã‘</td>
<td>‘fearless, intrepid (also one who is able to resist physical difficulties)’</td>
</tr>
<tr>
<td>TgK</td>
<td>këné mà</td>
<td>‘fearless, intrepid (also one who is able to resist physical difficulties)’</td>
</tr>
<tr>
<td>Ng</td>
<td>këndë màà</td>
<td>‘fearless, intrepid (also one who is able to resist physical difficulties)’</td>
</tr>
<tr>
<td>b. TmS</td>
<td>kindë màà</td>
<td>‘fearless, intrepid (also uncharitable)’</td>
</tr>
<tr>
<td>c. BnT</td>
<td>cèlé màà</td>
<td>‘energetic, courageous, vigorous’</td>
</tr>
</tbody>
</table>

All languages have in common the core meaning of ‘fearless’ or ‘courageous’. This is also mirrored in certain languages like Tommo-So with a very màà-ndî-ýë ‘dry out’ which is used as a command for ‘good luck’ or ‘be brave’. The nuances or other meanings beyond that are language-specific. We can only speculate about the source of these expressions. Perhaps those
who are dry are like hard, packed earth, which endures better than moist, supple soil. Or perhaps the expressions are derived from ‘hard’, like in the English expression steel yourself. Regardless, the languages share either a conceptual schema underlying the expressions or a common historical expression from which the others are derived.

What we have shown above is that while there are no clear paradigms the emotion and character expressions follow, we can find commonalities both in meaning and in form from language to language. We showed that the bahuvrihi construction is only used for character traits, something that is more enduring than an emotional state. We have also showed that while the conceptual metaphors underlying the expressions may not be clear, the different expressions often show clear relations to one another in the form of antonymous pairs. This suggests some underlying conceptual organization, either diachronically or synchronically.

(14)   | Semantic domain    | Expression type (E or C) | Adjective gloss
---|------------------|-----------------------|------------------
a. COLOR  | E                | ‘red’                 
        | C                | ‘white’, ‘black’      
b. DIMENSION | C                | ‘big’, ‘fat’, ‘small’ 
c. VALUE | C                | ‘good’, ‘bad’         
d. TASTE | E                | ‘sweet’               
        | C                | ‘bitter’, ‘sour’      
e. TEMPERATURE/SPEED | E                | ‘cold’                
        | C                | ‘hot’                 
f. PHYSICAL PROPERTY | C                | ‘dry’, ‘deep’, ‘heavy’,
                                        |                   | ‘light’, ‘soft’, ‘clean’

3. **Verbal expressions containing ‘liver’**

This section deals with expressions where ‘liver’ is used together with genuine verb stems (henceforth ‘liver + verb’ expressions). By ‘genuine’ we mean underived stems or stems derived from other verbs, but not those derived from adjectives. The latter have been briefly discussed in the previous section. Our material on verbal constructions is mainly confined to four languages (Jm, Ng, TgK and TmS); however, we believe that with further investigation, our findings will be relevant to other Dogon languages as well.

In what follows, we begin with a discussion of the thematic roles of ‘liver’ in verbal constructions, followed by a thorough description of the range of meanings these ‘liver’ + verb constructions can take, before drawing the conclusion that in verbal constructions as well, structure correlates with the emotion/character trait divide.

3.1 **Syntax and semantics of ‘liver’ + verb expressions**

We are aware of about a dozen idiomatic expressions in different Dogon languages where ‘liver’ is used together with verbs. An example of such an expression is that in (15) where ‘liver’ occurs as the subject of a verb meaning ‘be ruined’:

(15) Togo-Kan  
Kéné mà ṭɔwɔ̀.  
liver POSS.1SG be.ruined.PFV
‘I am disgusted.’ (Lit. ‘My heart is ruined.’)
(15) represents the most common morphosyntactic pattern. ‘Liver’ is paired with a possessive pronoun, which refers to the experiencer of the emotional state, and this construction as a whole functions as the subject of an intransitive verb. As will be shown later, verbal stems in such constructions have several semantic features in common, including selection of patient as the sole argument.

In other cases ‘liver’ occurs in the object or complement position:

(16) Nanga
Këndë kò:                   ìriyé-ndà:.
liver.L thing.Poss.1SG      take.up-PROH
‘Don’t raise a painful subject.’ (Lit. ‘Don’t raise my liver.’)

In this example from Nanga, ‘liver’ with the possessive classifier denoting the 1SG experiencer is the complement of the verb ‘take up’, which occurs in prohibitive form.

There is also a case where ‘liver’ acts as the genitive modifier of a head noun, and this whole noun phrase then acts as the complement of a transitive verb. In the following example, Tommo-So uses a metaphor similar to that found in English Don’t rub salt in my wound. The physical pain literally expressed by the words is reinterpreted as emotional suffering. Notably, in Tommo-So and several other Dogon languages, the wound is located in liver, the seat of emotions:

(17) Tommo-So
Kìndë mìnu  mì=mò    dënji3-gú.
liver wound 1SG=POSS    bump-PROH
‘Don’t rub salt on my wound.’ (Lit. ‘Don’t bump my liver wound.’)

Henceforth we will consider this case together with those where ‘liver’ alone is the complement of a transitive verb. For our purposes, it is only relevant that in both constructions ‘liver’ is thought to be the undergoer of a particular action.

The list in (18) shows all of the verbal meanings attested in the expressions discussed here. They are classified into two groups according whether the corresponding verbal stem is syntactically transitive or intransitive.

(18)     Intransitive          Transitive
‘be charred’ ‘bump’
‘be ruined’ ‘make worse’
‘be sliced’ ‘take up’
‘break of’
‘change’
‘explode’
‘go out/ get unstuck’
‘not have’
‘weep/ cry’

As can be seen from this list, ‘liver’ is always treated as the patient in the state of affairs denoted by a verbal stem, since all the intransitive verbs are patientive and all the transitive verbs select a patient in the complement position; crucially, ‘liver’ never acts as the subject of a transitive verb.

10 See the foot note on Togo Kan verb gö:
3.2 **Idiomatic readings of ‘liver’ + verb expressions**

We now progress into a description of the various verbs that can be used with ‘liver’ and the resulting meanings. We first note that, unlike in analogous constructions with adjectives, the meanings of verbal expressions are not confined to emotional state and character traits, but rather can encompass mental and physical cases as well. In at least three Dogon languages (Ng, TgK and TmS), a metaphorical expression of the type described here with the verb ‘be charred’ is used to denote a physical experience:

(19) a. Nanga

\[
\begin{align*}
\text{Kéndè} & \quad nɔ \quad \text{kágá-èrè}, \\
\text{liver} & \quad 3\text{SG} & \quad \text{be.charred-PFV}
\end{align*}
\]

‘He feels excruciating pain.’ (Lit. ‘His heart got charred.’)

b. Togo-Kan

\[
\begin{align*}
\text{Wó} & \quad \text{kénè} \quad \text{kágè}. \\
3\text{SG} & \quad \text{liver} & \quad \text{be.charred:PFV}
\end{align*}
\]

‘He feels excruciating pain.’ (Lit. ‘His heart got charred.’)

c. Tommo-So

\[
\begin{align*}
\text{Kindo} & \quad \text{wó} = \text{mɔ} \quad \text{kágáá} = \text{y}. \\
\text{liver} & \quad 3\text{SG}=\text{POSS} & \quad \text{be.charred:PFV=COP}
\end{align*}
\]

‘He feels excruciating pain.’ (Lit. ‘His heart got charred.’)

As can be seen from these examples a ‘charred liver’ refers to physical rather than emotional pain, and all three languages with such an expression are in agreement on this point.

Similarly, some verbal expressions are attested in reference to a mental rather than emotional state. In the following example from Togo-Kan, ‘liver’ is the subject of an intransitive verb meaning ‘go out’\(^{11}\). The resultant idiomatic reading is ‘renounce (an agreement)’.

(20) Togo-Kan

\[
\begin{align*}
\text{Kénè} & \quad \text{i=n-kè} \quad \text{gò-è}. \\
\text{liver} & \quad 1\text{SG}=\text{thing} & \quad \text{go.out-PFV}
\end{align*}
\]

‘He renounced (an agreement)’ (Lit. ‘His liver went out.’)

These two cases are valuable for our understanding of the relationship between emotional, mental and physical levels in the Dogon worldview. The fact that similar idiomatic expressions are used for all three suggests some degree of connection, whether historical or synchronic. However, this discussion goes beyond the topic of this paper.

The rest of the expressions known to us, and indeed the majority of the expressions we have seen, are used to encode emotions and character traits. Of these, however, character readings are very uncommon, limited to only two. Moreover, in both of these cases, the readings are attested only for nominalized expressions that include verbs and not the verbal constructions themselves. We will return to this critical observation at the end of this section.

\(^{11}\) The verb \text{gò}: allows both inactive and patient-like arguments in the subject position. Heath (2010) glosses this verb as ‘get unstuck’. What does this footnote mean? Does my rewording still capture it?
One of these two cases is from Togo-Kan, where ‘liver’ is used together with the negative form of verb sà ‘have’. Here, the idiomatic reading is attested in a bahuvrihi compound with a low-toned compound initial (a wide-spread pattern across Dogon languages):

(21) Togo-Kan

\[
\text{kènè} \quad \text{sà-rá}
\]

liver.L have-NEG.3SG

‘flighty (whose emotional moods change easily)’ (Lit. ‘does not have liver’)

Taken as a verbal construction, it could only mean that the person in question is literally liverless.

Note that partial antonymous relationships connect this expression to \text{kènè sèn} ‘wise (person)’, literally ‘good liver’, where wisdom is understood as including relative emotional stability and adequacy of emotional reactions. Parallel relationships between a good quality or condition understood as the purest existence and a total absence underlie this opposition\(^{12}\).

What do you mean here?

The other case of a nominalization used for a character reading is found in Nanga. In addition ‘liver’ being used with the verb ‘change’ to mean disappointment (see below), Nanga uses a compound \text{kèndè kòrọ}, which can be translated as ‘liver-changing’, in reference to cowardice:

(22) a. Nanga

\[
\text{Kèndè} \quad \text{kòrọ} \quad \text{nọ} \quad \text{lógọ-érẹ.}
\]

liver.L change.VN 3SG be.much-PFV

‘He is a big coward’ (Lit. ‘His liver-changing is much.’)

b. Nanga

\[
\text{Kèndè} \quad \text{kòrọ} \quad \text{yá} \quad \text{sà.}
\]

liver.L change.VN EXT have:3SG

‘He is a coward’ (Lit. ‘He has liver-changing.’)

Once again, character traits are correlated with a nominal rather than verbal expression. The emotional reading associated with the verbal use of ‘change’ is discussed below.

The same uniformity across languages seen in adjectival constructions for emotions is once again seen in verbal constructions. In the interest of space, we will represent them schematically in tables as done in the previous sections. Verb stems will be given in the perfective form minus any affixes.

Continuing from the Nanga examples in (22), we will first look at the verb ‘change’ used emotionally in reference to disappointment.

(23) Language ‘liver + change’ Gloss

\[
\begin{array}{ll}
\text{Ng} & \text{kèndè + kòrọ} & \text{‘be disappointed’} \\
\text{TgK} & \text{kènè + kòrọ} & \text{‘be disappointed’}
\end{array}
\]

The motivation behind the idiomatic reading here is quite obscure. The semantics of change is too general for such a concrete reading as disappointment. How so? One could just as easily imagine a “change of liver” being a joyous or positive experience. Note that the meaning

\(^{12}\) Recall that, interestingly, \text{kènè mọ̀nù} ‘bad liver’ in Togo Kan has an unexpected reading ‘vicious, violent’ as opposed to a meaning antonymous to that of ‘good liver’.
‘change’ for the stem kɔ́ri- in Ng and kɔ́ri in TgK was elicited only as the literal reading of the corresponding emotional expressions. That is, these stems were not listed with this literal meaning in Jeffrey Heath’s lexical materials on either Nanga or Togo Kan, but were only found to have the meaning ‘change’ when asking for a literal translation of the emotional expression. We defer a detailed discussion of this case until we can obtain further data.

Next we turn to the verb ‘weep’. Combined with ‘liver’, this combination gives a reading of ‘dissatisfaction and unhappiness’ in Jm, Ng and TgK.

(25) | Language | ‘liver + weep/cry’ | Gloss |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jm</td>
<td>cénè + é:\n^-</td>
<td>‘be dissatisfied, unhappy’</td>
</tr>
<tr>
<td>Ng</td>
<td>kɛ́ndė + kó-</td>
<td>‘be dissatisfied, unhappy’</td>
</tr>
<tr>
<td>TgK</td>
<td>kɛ́nɛ́ + kɔ́:\n^-</td>
<td>‘be dissatisfied, unhappy’</td>
</tr>
</tbody>
</table>

Note that Jm uses a stem unrelated etymologically to that found in Ng and TgK. This construction may be a rare example where ‘liver’ is treated metonymically as the emotional self, since crying is understood as a sign of disappointment and unhappiness and is a human action both in European and Dogon culture.

Another interesting case is the use of ‘liver’ with the stem meaning ‘explode’:

(26) | Language | ‘liver + explode’ | Gloss |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TgK</td>
<td>kɛ́nɛ́ + pőjɛ́</td>
<td>‘be angry inside, but be unable to express anger’</td>
</tr>
<tr>
<td>Ng</td>
<td>kɛ́ndɛ́ + pósɔ́-</td>
<td>‘be angry inside, but be unable to express anger’</td>
</tr>
</tbody>
</table>

This expression refers to a situation where negative emotions accumulate in a person’s interior, but social reality does not allow them to be expressed overtly. This contradiction causes a metaphorical ‘explosion’ of the emotional center. According to our assistants this situation is typically the case of relationships between relatives. Like the ‘red liver’ expression for anger discussed in section 3, this idiom also seems to have its roots in conceptual metaphors related to anger and heat, specifically in this case ANGER IS A HOT FLUID IN A CONTAINER (Kövecses 1990). In this case, the liver is the container, and the bottling up of anger leads to the sense of wanting to explode. Curiously, in English, we say that a person explodes in anger when the emotions can no longer be contained, but the anger remains unexpressed with this expression in the Dogon languages. The subtle semantics underlying this expression deserve further study.

Not all constructions have the same gloss in every language. An example where the idiomatic translation varies is the case of ‘liver’ combined with a verb meaning ‘be ruined’. In Tommo-So, this combination gives the reading ‘be devastated’ (in reference to a person). Here, Tommo-So uses a similar metaphor as English. This notion can also be expressed with a compound kìndɛ́ yámú lit. ‘ruined heart’, wherein ‘ruined’ is a deverbal noun acting as a modifier. The same verb, however, is used to a different end in Jm, Ng and TgK. In these languages, disgust is understood as a ruining of the liver.

(27) | Language | ‘liver +be ruined’ | Gloss |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jm</td>
<td>cénè + nɔ́w-</td>
<td>‘be disgusted’</td>
</tr>
<tr>
<td>Ng</td>
<td>kɛ́ndɛ́ + námá-</td>
<td>‘be disgusted’</td>
</tr>
<tr>
<td>TgK</td>
<td>kɛ́nɛ́ + nɔ́w\n^-ɛ́</td>
<td>‘be disgusted’</td>
</tr>
</tbody>
</table>

Again, the negative association of ‘ruin’ is constant across all languages, but the exact emotional manifestation varies.
Another case of metaphorical destruction of ‘liver’ is found in Jm and TgK. Here, ‘liver’ functions as the argument of verb ‘be sliced’. The expression refers to a sudden intense feeling of disappointment similar to that expressed in English *My heart sank*.

(28) **Language** ‘liver + be sliced’ **Gloss**

| JmS | cérè + cédé         | ‘feel sudden disappointment’ |
| TgK | kérè + kédé         | ‘feel sudden disappointment’ |

In Nanga the same meaning is expressed by using verb *párá-* ‘(fruit) break off (branch)’.

(29) Nanga

*Kéndè kɔ́: párá-ɛ̀rè.*

liver thing.POSS.1SG break.off-PFV

‘My heart sank.’ (Lit. ‘My liver broke off.’)

The suddenness of the disappointment is mirrored in both cases by the fast action associated with the verb. Both ‘slice’ an ‘break off’ imply a quickly accomplished action, not a slow drawn out process, so likewise the change in emotions also takes place quickly.

In two cases known to us, ‘liver’ + verb expressions encode emotional disturbance caused by bad memories. In both cases, the expression is used in the prohibitive as a request for the addressee not to remind the speaker about an unpleasant event in the past. Nanga and Togo-Kan use the verb meaning ‘take up’ to that end:

(30) **Language** ‘liver + take up’ **Gloss**

| Ng  | kérè + ìríyé-      | ‘raise painful subject, remind about something unpleasant’ |
| TgK | kérè + ñóró-m-13    | ‘raise painful subject, remind about something unpleasant’ |

A more vivid construction is found in Tommo-So and Jamsay, with a metaphor of bumping the wound of one’s liver. As noted above, the analogous expression is found in English (cf. ‘Don’t rub salt on my wound’).

(31) **Language** ‘liver wound + bump’ **Gloss**

| Jm  | kérè mɔ́: + dőnji-  | ‘rub salt on one's wound’ |
| TmS | kíndè mínú + dônjáá | ‘rub salt on one's wound’ |

Togo-Kan uses a more general verb ‘make worse’ to the same end with ‘liver wound’, as shown in the following example:

(32) Togo-Kan

*Kérè mɛ̀ mà ɲówɛ́rɛ̀-m-ɛ́lè.*

heart.L wound POSS.1SG get.worse-CAUS-PROH

‘Don’t rub salt on my wound.’ (Lit. ‘Don’t ‘aggravate my liver wound.’)

In these expressions, a very physical metaphor takes an emotional meaning, once again suggesting at least a historical connection between physical feelings and the emotional experience.

---

13 Stem *ñóró*-m- is formed by adding a causative suffix -m to stem *ñóró-* ‘stand up’.
3.3 The correlation between structure and emotion or character expressions

Having examined the data, let us now return to the question of the distribution of emotion and character readings in verbal constructions. We would like to point out the following. First, in general, verbal expressions tend to have emotion readings. Among ten expressions described in this section\(^\text{14}\), eight are emotion expressions and only two refer to character traits. Second, these character readings are attested only in nominal compounds that contain verb stems and not in constructions with a finite verb. This observation echoes the generalization made in the previous section about the distribution of bahuvrihis and ordinary N+Adj combinations. In both cases, there is a correlation between the relative predicativeness of the construction and the type of reading. If one takes adjectives to be less predicative than verbs, but more predicative than nouns, the distribution of character and emotion readings can be schematized as follows.\(^\text{15}\)

\[
\text{(33) Predicativeness Scale}
\]

<table>
<thead>
<tr>
<th>Constructions:</th>
<th>Compounds</th>
<th>Noun + Adjective</th>
<th>Verbal constructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readings:</td>
<td>Character</td>
<td>Character/emotion</td>
<td>Emotion</td>
</tr>
</tbody>
</table>

Viewed this way, we see that the type of idiomatic reading correlates with the degree of predicativeness of a construction. The least predicative compound constructions (this class including both adjectival bahuvrihis and compounds with deverbal nouns) refer to character traits only. The most predicative verbal constructions always refer to emotional states. Finally, N+Adj combinations are between these two extremes and correspondingly can have both emotion and character readings.

4. Conclusion

The preceding sections have shown the range of emotion and character expressions used in a sample of nine Dogon languages. As we have shown, the type of grammatical structure used correlates closely with whether the expression refers to emotions or to character traits, with more predicative constructions associated with the former and less predicative ones with the latter. This makes sense when considering that character traits tend not to have a clear beginning or end, but rather exist in the long term as a feature of a person, and thus bahuvrihi compound modifiers or stative ‘have’ with modified ‘liver’ capture this ongoing sense. On the flip side, emotions come and go, and this fleetingness lends itself well to verbal constructions.

As noted in the introduction, many completely unrelated languages use ‘heart’ or ‘liver’ in emotional expressions of precisely this type. It seems to us that this suggests that the physical experience of emotion is to at least some extent universal. (For a good summary of

\(^{14}\) We ignore here two instances where expressions of the same type are used for mental and physical states.

\(^{15}\) Our predicativeness scale is similar to the time-stability scale often used in the literature when discussing the cognitive motivation of lexical classes of nouns, adjectives and verbs. (See Givon 1984: 44-54 and Stassen 1997: 123-131 inter alia). Time-stability definitely plays a role in the distinction between character and emotion readings; however, this feature can hardly be used to classify syntactic constructions.
the debate between emotions as bodily and universal versus cultural and cognized, see Leavitt 1996). At least in our own experience, emotions are often felt as sensations in the chest, which, if universal, would make it natural that emotions are seen as tied up with the heart, liver, or other organs in the upper abdomen.

But the question remains: do speakers consciously think of their livers as the source of their emotions, or are these metaphors and metonymies simply figures of speech, dissociated from any synchronic conceptualization of their world? Explanations from our consultants, like the one given for ‘fast liver’, suggest that to some extent, speakers do generalize the linguistic expressions to their physical selves; that is, even outside of idiomatic expressions, speakers refer to the placement of the heart/liver in their explanations for emotions or character traits. However, this discussion remains for another paper.

The goal of this chapter was to present the novel, if not unsurprising, conclusion that grammatical structure correlates with the type of emotional or psychological trait being encoded. The fact that a similar strategy is used in Hausa suggests that this correlation may be an areal feature of West Africa, or perhaps even a hitherto uninvestigated commonality cross-linguistically. Thus we hope that others will add their own data to this discussion so that the intricate relationship between the meaning of expressions and the grammar itself comes into clearer focus.

References