“Were not our hearts burning within us?”
Biology and Culture in the Physiology of Emotion

Ryan S. Schellenberg
Canadian Society of Biblical Studies
May 27, 2023

Abstract
In all cultures, people describe affective experience using physiological idioms: their knees tremble; their stomachs churn; their hair stands on end. Although these idioms differ from one cultural group to another, many translate with relative ease. They thus appear to represent the linguistic residue of shared affective phenomenology. The association of specific emotional states with hot or cold temperatures provides a particularly illuminating example. Such associations are ubiquitous across cultural groups and often reflect basic physiological processes. Thus high-arousal emotions tend to be associated with heat and low-arousal emotions with cold. Nonetheless, these associations are not universal but are shaped by cultural history. This essay takes Luke’s description of the Emmaus disciples’ burning hearts as a case study. Although often understood by modern commentators as a transparent metaphor for elation or excitement, ancient usage points in a decidedly different direction, reflecting a prevailing moral and medical assumption that the dysregulation of body’s innate heat, focused in the heart, was a symptom of moral and physical disorder. If Luke’s phrase nonetheless depicts salutary feelings, it would appear to be a harbinger of a new chapter in the history of emotions wherein certain “hot feelings” might be understood not as unregulated passions, but rather righteous fervor.

Two gloomy (σκυθρωπός) disciples walk down the road to Emmaus on the first day of the week, mulling over the life, death, and rumored resurrection of Jesus (Luke 24:13–35). As they make their way, Jesus himself turns up alongside them, yet their eyes are prevented from recognizing him. “O you fools,” chides the stranger when he hears what they have been discussing, “so slow in heart [βραδεῖς τῇ καρδίᾳ] to believe everything the prophets spoke” (v. 25). A lesson in scriptural interpretation follows, with the unrecognized Jesus explaining to the traveling disciples everything in the law and the prophets that pertains to him. Luke does not at this point tell us how the disciples feel about the stranger’s ambulatory lecture. Later, however, after they recognize Jesus as he breaks the bread, they recall retrospectively a state of shared emotional arousal: “Were not our hearts burning [ἡ καρδία ἡμῶν καιομένη ἦν] within us as he spoke to us on the road, as he opened up to us the scriptures?” (v. 32).[1] And so Luke has narrated a perceptual and affective arc, a transformation from sluggish to burning hearts.

Many modern commentators know just how the disciples felt. “Clearly Jesus’ exposition had stirred them deeply,” suggests Leon Morris, taking καρδία καιομένη to express their rekindled hope and devotion.[2] “Their hearts were afire,” writes Joseph Fitzmyer; “hearts ablaze,” echoes John Carroll, entrusting the burden of further clarification to an English phrase with

[1] For the “distributive singular” (ἡ καρδία ἡμῶν), see BDF §140; Smyth §998.
[2] Leon Morris, *Luke: An Introduction and Commentary*, Tyndale New Testament Commentaries (Leicester: Inter-Varsity Press, 1974), 340.

presumed idiomatic equivalence.[3] Alfred Plummer makes the underlying assumption explicit: Luke's is a "common and natural" metaphor, he writes, depicting "the glow in their hearts."[4]

Yet more philologically exacting scholars have sounded a note of caution. As we will see, burning, glowing, or strangely warmed hearts are absent elsewhere in the New Testament, and the use of the verb καίω in conjunction with καρδία is very rare in Greek literature more generally. Thus Theodor Zahn passed along a handful of commonly cited parallels only half-heartedly, noting that although these texts use similar language, here "burning" conveys not fervor, but anger or distress (Ps 72:21 LXX [ἐξεκαύθη ἡ καρδία μου]; Ps 38:4 LXX [ἐθερμάνθη ἡ καρδία μου ἐντός μου]).[5] Perhaps, he suggested, the multiple textual variants in the verse reflect scribal reluctance to accept what Luke had written.[6] "Were not our hearts veiled [κεκαλυμμένη]," reads Codex Bezae, thereby highlighting the disciples' previous inability to recognize their Lord, whether walking with them on the road or foretold in the scriptures. The Old Latin versions likewise suggest failed perception: *excaecatum*, *optusum*.[7] In what is perhaps a related reading, the Syriac versions reuse the term that translates βραδεῖς τῇ καρδίᾳ in v. 25, thus offering "heavy" (ܝܩܝܪ) in place of the orthographically similar "burning" (ܝܩܝܕ). Scholars who propose Semitic sources behind Luke's Gospel have posited an originary Aramaic wordplay, with the term יקיד ("burning") in v. 32 punning on Jesus's earlier description of the disciples' hearts as יקיר ("heavy, slow") in v. 25—and then later Syriac copyists fumbling the pun by reusing the earlier term.[8] Or maybe the Syriac versions in fact preserve the original sense, which expressed not fervor but the disciples' sudden self-consciousness regarding their previous failure of perception.[9]

Humbug! says Father Legrange: Yes, the image of a "dull heart" may be more in keeping with biblical usage, "mais qu'il faut savoir gré à Luc de ce coeur échauffé, brùlant aux paroles du Christ!"[10] The key to interpreting the metaphor, suggests Christopher Bryan, is empathic sensitivity to a common affective experience: "If we have ever had the experience (as I certainly have) of failing to understand a situation, afterwards coming to understand it, and then realizing

---

[3] Joseph A. Fitzmyer, ed., *The Gospel According to Luke*, 2 vols., AB 28 (Garden City, NY: Doubleday, 1981), 2:1559; John T. Carroll, *Luke: A Commentary*, NTL (Louisville, KY: Westminster John Knox, 2012), 487. And see, with a different nuance but similar method, Darrell L Bock, *Luke*, 2 vols., BECNT 3 (Grand Rapids: Baker, 1994), 2:1920.

[4] Alfred Plummer, *A Critical and Exegetical Commentary on the Gospel According to S. Luke*, 5th ed., ICC 28 (Edinburgh: T&T Clark, 1922), 558. Cf. Michael Wolter, *The Gospel According to Luke*, Baylor-Mohr Siebeck Studies in Early Christianity (Waco, TX: Baylor University Press, 2016), 2:559: "an old metaphor for being seized by excitement."

[5] Theodor Zahn, *Das Evangelium des Lucas*, ZKNT 3 (Leipzig: Deichert, 1920), 724 n. 68. Likewise C. F. Evans, *Saint Luke*, TPINTC (London: SCM, 1990), 914.

[6] Zahn, *Das Evangelium des Lucas*, 724 n. 68; and see Bruce M. Metzger, *A Textual Commentary on the Greek New Testament*, 2nd ed. (Stuttgart: Deutsche Bibelgesellschaft, 1994), 159.

[7] Metzger, *Textual Commentary*, 159.

[8] Michael B. Shepherd, "Semitic Wordplay Behind the Greek of the New Testament," in *New Testament Philology: Essays in Honor of David Alan Black*, ed. Melton Bennett Winstead (Eugene, OR: Pickwick, 2018), 59–60.

[9] Matthew Black, *An Aramaic Approach to the Gospels and Acts*, 3rd ed. (Oxford: Clarendon, 1967), 254–55; Alfred Loisy, *L'évangile selon Luc* (Paris: Nourry, 1924), 581–82. Cf. Marco Frenschkowski, *Offenbarung und Epiphanie*, 2 vols., WUNT 2/79–80 (Tübingen: Mohr Siebeck, 1995), 2:227.

[10] M. J. Lagrange, *Évangile selon Saint Luc*, 3rd ed., EBib (Paris: Gabalda, 1927), 609.

that if we had paid more attention to our feelings at the time we might have realized it sooner, than we may think that Luke's psychological observation is really rather good."[11]

Two paths thus diverged in an exegetical wood, one intuitive and phenomenological, the other philological. Is the "burning heart" of Luke 24:32 a transparent and transcultural idiom best grasped not with the occurrence-tabulating mind but with one's own empathic heart? Or is it an old lexicographical and text-critical conundrum in need of a little *TLG*? Or perhaps, with H. A. W. Meyer, one might split the difference, as it were, by broadening one's linguistic scope:

> The extraordinarily lively emotions are, *as in all languages*, represented under the image of burning, of heat, of being inflamed, and the like. Hence the meaning: *Was not our heart in an extraordinarily fervent commotion?* . . . Quite naturally the two disciples abstain from explaining more fully the excitement of the feeling that they had experienced, because such an excitement, comprehending several affections, rises into consciousness, as divided into its special elements, the less in proportion as its experiences are deep, urgent, and marvellous.[12]

Burning hearts, then, are hearts possessed of an undifferentiated complex of heightened feelings that can only be named more precisely once they have cooled and congealed. This indefiniteness alleviates the burden of proof on Meyer's initial claim: *As in all languages*. Still, is this in fact true?

Emotions, Bodies, Temperatures

Here we may begin with what I take to be an uncontested fact: In all cultures, affective experience may be described in terms of its physiological correlates.[13] One's knees tremble, one's stomach churns, one's hair stands on end. Many of these idioms translate with relative ease. Thus when ancient Greek texts refer to a fearful "shudder" (φρίκη), English speakers have little difficulty grasping the sense, for, as Douglas Cairns notes, "the same symptom remains an important sign of [fearful] emotions in English and other modern languages."[14] In other words, the Greek term φρίκη and the English word "shudder" are parallel lexical representations of a shared somatic experience—an experience shared not only across cultures but also across species, as Darwin famously observed: "With all or almost all animals, even with birds, Terror causes the body to tremble."[15] Score one point for the intuitivists.

Yet not all affective *qualia* map so neatly or transparently onto the feeling body. Exactly where, for example, does pity reside? In a number of cultures, it is the heart that is moved by

---

[11] Christopher Bryan, *The Resurrection of the Messiah* (New York: Oxford University Press, 2011), 310 n. 72.

[12] Heinrich August Wilhelm Meyer, *Critical and Exegetical Hand-Book to the Gospels of Mark and Luke*, trans. Robert Ernest Wallis (New York: Funk & Wagnalls, 1884), 581, emphasis added.

[13] Anna Ogarkova, "Folk Emotion Concepts: Lexicalization of Emotional Experiences across Languages and Cultures," in *Components of Emotional Meaning: A Sourcebook*, ed. Johnny J. R. Fontaine, Klaus R. Scherer, and Cristina Soriano, Series in Affective Science (Oxford: Oxford University Press, 2013), 51–52, 54–56; David B. Mumford, "Somatization: A Transcultural Perspective," *International Review of Psychiatry* 5 (1993): 231–42.

[14] Douglas Cairns, "A Short History of Shudders," in *Unveiling Emotions II: Emotions in Greece and Rome: Texts, Images, Material Culture*, ed. Angelos Chaniotis and Pierre Ducrey, HABES 55 (Stuttgart: Steiner, 2013), 87.

[15] Charles Darwin, *The Expression of the Emotions in Man and Animals* (London: Murray, 1872), 77.

compassion when others suffer, as it is for many speakers of English.[16] (Interestingly, in Northeastern Neo-Aramaic, one describes the experience of pity by saying that one's heart burns (cf. 1 Kings 3:26; Hos 11:8).[17] Presumably this is not what Cleopas and his companion felt.) In contrast, speakers of Koine Greek felt pity in their bowels—their σπλάγχνα, hence the verb σπλαγχνίζομαι.[18] In Modern Persian or Farsi, pity is felt as a burning in one's *del*, a term difficult to translate because its use presupposes cultural conceptions of the body and the self quite distinct from those of most English speakers. Farzad Sharifian offers the equivocating gloss "heart-stomach"—the beating, six-cornered seat of emotions, located in the abdomen.[19] Clearly, how we make sense of what we feel on the inside depends considerably on what we imagine is in there. And this means that somatic representations of emotion are not simply artifacts of affective experience, but also reflect its cultural conceptualization—a point well illustrated by the Wolof phrase "my mind is dirty" (*sum axel bi tilim*), which few English speakers, however attentive to their own feelings, will successfully interpret as "I am disappointed."[20] Score one for the philologists.

In a remarkably thorough cross-linguistic overview of the somatic language of emotion, Anna Ogarkova notes variation along two main axes. First, some languages, like English, ascribe most emotions to a single organ (often the heart, belly, or liver), while others associate individual emotions with various specific body parts.[21] Second and more fundamentally, some languages, like English, favor abstract psychological language for emotion ("anger") and appeal to somatic imagery ("boiling blood") more rarely, chiefly for emphasis or rhetorical effect; other languages rely principally on somatic idioms, with abstract language occurring more rarely; and some lack abstract psychological terms for emotions altogether.[22] (Here we might note also that some languages, like biblical Hebrew, possess abstract terms for individual emotions, but no metalanguage describing emotion in general as a distinct category of human experience.[23] Whether speakers of such languages feel "emotions" at all is not an idle question, for, at least in general usage, the term "emotion" bears within it assumptions about the self and its relation to the world that derive from its specific cultural history;[24] and it is worth inquiring how these assumptions themselves inflect affective experience.)

---

[16] E.g. Zouhair Maalej, "The Heart and Cultural Embodiment in Tunisian Arabic," in *Culture, Body, and Language: Conceptualizations of Internal Body Organs across Cultures and Languages*, ed. Farzad Sharifan et al., Applications of Cognitive Linguistics 7 (Berlin: Mouton de Gruyter, 2008), 412.

[17] Daniel P. Wolk, "Expressions Concerning the 'Heart' (*libbā*) in Northeastern Neo-Aramaic in Relation to a Classical Syriac Model of the Temperaments," in *Culture, Body, and Language: Conceptualizations of Internal Body Organs across Cultures and Languages*, ed. Farzad Sharifian et al. (Berlin: Mouton de Gruyter, 2008), 295–96.

[18] See, e.g., Prov 12:10 LXX; Sir 20:7; Matt 9:36; 14:14; 15:32; 18:27; 20:34; Luke 15:20; 1 John 3:17. For σπλάγχνα in classical Greek, see Ruth Padel, *In and Out of the Mind: Greek Images of the Tragic Self* (Princeton, NJ: Princeton University Press, 1992), 13–14.

[19] Farzad Sharifian, "Conceptualizations of *del* 'Heart-Stomach' in Persian," in *Culture, Body, and Language: Conceptualizations of Internal Body Organs across Cultures and Languages*, ed. Farzad Sharifian et al. (Berlin: Mouton de Gruyter, 2008), 247–65.

[20] See Ogarkova, "Folk Emotion Concepts," 55.

[21] Ogarkova, "Folk Emotion Concepts," 55.

[22] Ogarkova, "Folk Emotion Concepts," 55.

[23] Ogarkova, "Folk Emotion Concepts," 53; Françoise Mirguet, "What Is an 'Emotion' in the Hebrew Bible? An Experience That Exceeds Most Contemporary Concepts," *BibInt* 24 (2016): 442–65.

[24] See esp. Thomas Dixon, *From Passions to Emotions: The Creation of a Secular Psychological Category* (Cambridge: Cambridge University Press, 2003). In fact, one might justly wonder whether by beginning with "emotion" as the object of study, English-speaking scholars of human feeling have in fact elaborated their own folk

Nonetheless, there are family resemblances among human descriptions of the affective domain, commonalities rooted in shared physiology and evolutionary inheritance. Perhaps it would warm Meyer's heart to learn that recent research has largely validated his claim regarding the temperature of "the extraordinarily lively emotions." What are sometimes termed "body-related temperature expressions"—idioms like "cold-hearted" or "hot-headed"—appear to be universal features of human language.[25] Moreover, cross-linguistic studies have noted common patterns. One recent study of 403 speakers of English, Spanish, Japanese, and Chinese asked participants to rank emotions on a five-part temperature scale.[26] The results were relatively similar across languages (figure 1), with high-arousal emotions ("energetic," "enthusiastic") consistently associated with higher temperatures and low-arousal emotions ("blue," "bored") with lower temperatures.

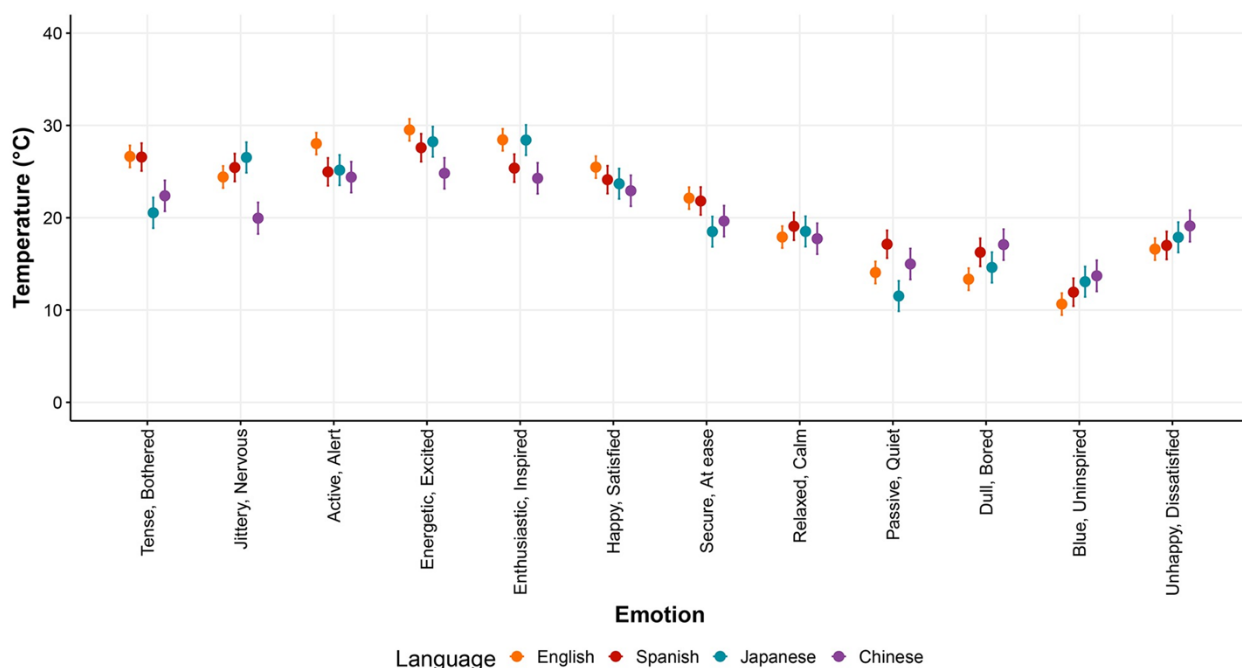

Figure 1. Mean temperature associations disaggregated by language. Escobar et al., "The Temperature of Language," PLOS One *16.6 (2021).*

Overall, the authors conclude, "0°C and 10°C were associated with negative-valanced, low-arousal emotions, while 20°C was associated with positive-valanced, low-to-medium-arousal emotions. Moreover, 30°C was associated with positive-valanced, high-arousal emotions; and 40°C was associated with high-arousal and either positive- or negative-valanced emotions." This we might think of roughly as the goldilocks scale of emotions: Papa Bear is too hot-tempered, Mama Bear is too cold-hearted, but Baby Bear's warm affections are just right. The most

psychology and baptized it as science. Cf. Anna Wierzbicka, *Imprisoned in English: The Hazards of English as a Default Language* (New York: Oxford University Press, 2014), 68–86.

[25] Susanne Vejdemo and Sigi Vandewinkel, "Extended Uses of Body-Related Temperature Expressions," in *The Lexical Typology of Semantic Shifts*, ed. Päivi Juvonen and Maria Koptjevskaja-Tamm, Cognitive Linguistics Research 58 (Berlin: de Gruyter, 2016), 249–84.

[26] Francisco Barbosa Escobar et al., "The Temperature of Emotions," *PLOS ONE* 16.6 (2021), https://doi.org/10.1371/journal.pone.0252408.

economical explanation for its ubiquity is the basic physiology of arousal and homeostasis, which sponsors a cluster of temperature-based conceptual metaphors.[27]

At the level of generality suggested by Meyer, then, his assertion appears to hold: across human languages, "lively emotions" are represented metaphorically, or perhaps metonymically, as hot; hence we may safely take Luke's "burning hearts" to convey a state of emotional arousal.[28] Still, questions remain. For in using idiomatic body-related temperature expressions, speakers ordinarily wish to say more about their feelings than whether they indicate high- or low-levels of arousal, or, for that matter, which quadrant they inhabit on a valence/arousal matrix.[29] When, for example, various writers in the Hebrew Bible speak of God's "burning nose," they mean not just that God has heightened feelings, but more specifically that God is enraged.[30] Yes, body-related temperature idioms have their origins in shared human physiology. Still, they are forged within specific cultural histories and are thus as finely-tuned in nuance as any other aspect of human language. To speak merely of "arousal" and "valence" is to miss almost everything that matters to the speakers who utter them.

Hot Hearts and Affective Cosmologies

The Chamula are a community of Tzotzil Mayans who live at what they consider the "navel of the earth"—not at Delphi, but in a predominantly indigenous municipality of Chiapas, Mexico.[31] Here, too, the image of a "heated heart" conveys heightened emotion. As Gary Gossen reports, the phrase is particularly common as a description of speech. "Language for people whose hearts are heated" names an intermediate genre of oral performance that incorporates the flexibility of everyday speech with generic characteristics of formal ritual language, especially stylized repetition.[32] This is the language of the courtroom and of political speech, but also of "any heated, emotional, drunken, or angry discussion."[33]

Still, it is not quite accurate to say that a Chamula speaker with a heated heart is displaying heightened emotion, for in the world inhabited by the Chamula heat connotes something both more specific and more fundamental than simply arousal. In Chamula cosmology, "our Father" the sun is the "life-giving source of order"; its daily and annual cycles

---

[27] George Lakoff and Zoltán Kövecses, "The Cognitive Model of Anger Inherent in American English," in *Cultural Models in Language and Thought*, ed. Dorothy Holland and Naomi Quinn (Cambridge: Cambridge University Press, 1987), 195–221; Vejdemo and Vandewinkel, "Extended Uses," 256–57.

[28] The ubiquity of the such language renders unnecessary the genealogy posited by Geo Widengren, who, in a learned essay, notes burning hearts in (later) Sassanid and Classical Persian literature that signify affliction or compassion, infers that the Persian phrase is older than its attestation, and concludes that the expression either made its way from east to west or belonged to "a common Indo-European heritage." Widengren, "Was Not Then Our Heart Burning in Us?," in *Essays in Memory of Karl Kerényi*, ed. Edgar C. Polomé, Journal of Indo-European Studies Monograph Series 4 (Washington, DC: Institute for the Study of Man, 1984), 116–22.

[29] For the valence/arousal matrix, now common in studies of emotion, see James A. Russell, "A Circumplex Model of Affect," *Journal of Personality and Social Psychology* 39 (1980): 1161–78.

[30] E.g. Exod 4:14; Josh 23:16; 2 Sam 6:7; Ps 106:40. See further Angela Thomas, *Anatomical Idiom and Emotional Expression: A Comparison of the Hebrew Bible and the Septuagint*, Hebrew Bible Monographs 52 (Sheffield: Sheffield Phoenix Press, 2014), 161–262.

[31] Gary H. Gossen, *Chamulas in the World of the Sun: Time and Space in a Maya Oral Tradition* (Cambridge, MA: Harvard University Press, 1974), 18.

[32] Gary Gossen, "To Speak with a Heated Heart: Chamula Canons of Style and Good Performance," in *Explorations in the Ethnography of Speaking*, ed. Richard Bauman and Joel Sherzer, 2nd ed. (Cambridge: Cambridge University Press, 1989), 400–403.

[33] Gossen, "To Speak with a Heated Heart," 402.

regulate heat and light, which are conceived as divine attributes.[34] Life flourishes with the equilibrium of the sun's masculine heat and the moon and earth's feminine cold. Likewise, human vitality is an aspect of the sun's divine heat, whereas illness is often conceived as a lack of heat or a disequilibrium of hot and cold.[35] Thus when Chamula speakers feel their hearts begin to warm and the cadences of their speech to crystallize into forceful repetition, they are not merely emoting. They are rather enacting the vital potency of the sun, the heated rhythm of their speech reflecting the rhythmic patterns of the cosmos.[36] In other words, the Chamula do not possess a theory of emotion. What they have is a cosmology that envelopes the human heart. And so, even if they experience physiological processes indistinguishable from those we otherwise term "arousal," the Chamula nonetheless *feel differently*, for their feelings derive their meaning and thus their affective tenor from the cosmology of which they are an aspect.[37] (Or is this merely the ethnographer's fantasy of a still-enchanted world?)

In the Greek philosophical tradition, too, heat was a fundamental principle underlying not only the formation of the cosmos, but also the physiology of the human body and the passions of the soul. According to Aristotle's report, Heraclitus and other pre-Socratic philosophers deemed fire a basic and originary element of the universe (*Metaph.* 984a; cf. Heraclitus B30). Various texts in the Hippocratic corpus elaborate on this suggestion, positing an analogous role for fire in the microcosm of the human body.[38] "All things were arranged in the body, in a fashion conformable to itself, by fire," reads *On Regimen*, "a copy of the whole, the small after the manner of the great and the great after the manner of the small" (1.10 [Jones, LCL]). The Stoics, too, spoke of the "designing fire" (πῦρ τεχνικόν) of nature, equivalent to a "fiery, creative breath" (πνεῦμα πυροειδὲς καὶ τεχνοειδές). The human soul—itself "a hot breath" (πνεῦμα ἔνθερμον), says Zeno—is but one part of the indestructible soul of the universe (Diogenes Laertius, *Vit. phil.* 7.1.156–57). Here cosmology and human physiology are not only homologous, but also consubstantial.

It is difficult to say how salient such cosmological imaginings were to the everyday experience of the Greek self. Nor is it entirely clear what was their relationship with the common notion of an innate or vital heat that sustains all animal life.[39] This latter idea, which undoubtedly was derived from the simple observation that living bodies are warm and dead bodies cold, can be traced to the earliest Greek medical writers and finds a home also in Plato and Aristotle.[40] Common to all these sources is the assertion that the innate heat has its seat in the heart.[41] The

---

[34] Gossen, *Chamulas in the World of the Sun*, 30–31, 36–40.

[35] Gossen, *Chamulas in the World of the Sun*, 36–38.

[36] Gossen, "To Speak with a Heated Heart," 398–400. These cosmological associations do not imply that "hot" emotions are always good. The Chamula of course recognize that unregulated heat or passion can be destructive. See Gossen, *Chamulas in the World of the Sun*, 73–77.

[37] Cf. Michelle Z. Rosaldo, "Toward an Anthropology of Self and Feeling," in *Culture Theory: Essays on Mind, Self and Emotion*, ed. Richard A. Shweder and Robert A. LeVine (Cambridge: Cambridge University Press, 1984), 137–57.

[38] Hynek Bartoš, "Heat, Pneuma, and Soul in the Medical Tradition," in *Heat, Pneuma, and Soul in Ancient Philosophy and Science*, ed. Colin Guthrie King and Hynek Bartoš (Cambridge: Cambridge University Press, 2020), 21–32.

[39] See Friedrich Solmsen, "The Vital Heat, the Inborn Pneuma and the Aether," *JHS* 77 (1957): 119–23.

[40] Everett Mendelsohn, *Heat and Life: The Development of the Theory of Animal Heat* (Cambridge, MA: Harvard University Press, 1964), 8–26; Solmsen, "Vital Heat," 119–20.

[41] On the enduring legacy of this idea, see Patricia Simons, "The Flaming Heart: Pious and Amarous Passion in Early Modern European and Medical and Visual Culture," in *The Feeling Heart in Medieval and Early Modern Europe*, ed. Katie Barclay and Bronwyn Reddan (Berlin: de Gruyter, 2019), 19–42.

lungs, by contrast, provide cool air (πνεῦμα) to the body, moderating its temperature while also, on some accounts, sustaining its heat just as breath kindles a fire.[42] Notably, the same process that provides physiological balance to the body is also in this tradition thought to regulate the heat produced by the passions of the soul. Plato's *Timaeus* is particularly explicit:

> As a means of relief for the leaping of the heart, in times when dangers are expected and passion is excited—for [the sons of God] knew that all such swelling of the passionate parts would arise from the action of fire,—they contrived and implanted the form of the lungs . . . so that, when it receives the breath and the drink, it might have a cooling effect and furnish relief and comfort in the burning heat [ἐν τῷ καύματι]. To this end they . . . placed the lungs as a kind of padding around the heart, in order that, when the passion therein should be at its height, but leaping upon a yielding substance and becoming cool, the heart might suffer less and thereby by enabled the more to be subservient to the reason in time of passion. (70c–d [Bury, LCL])

Just take a deep breath, friends. It will cool—and calm—you down, helping reason regain its hegemony over the excitable body it governs.

Some centuries later, Galen's medical observations take the importance of innate heat as a premise,[43] and treat the passions of the soul (πάθη τῆς ψυχῆς) as one variable in its regulation:

> An increase in the heat of the living being is . . . a common feature of all exercises; but it is not specific to them alone, since, to be sure, there also arises an increase in the internal heat [αὔξησις τῆς ἐμφύτου γίνεται θερμότητος] in those experiencing rage, anxiety and shame. Now, rage [θυμός] is not simply an increase, but as it were a kind of seething of the hot in the heart [τοῦ κατὰ τὴν καρδίαν θερμοῦ]; . . . The internal heat increases in those suffering shame too, as all of the hot first courses together to the inside, after that gathers deep down . . . [44]

For Galen, uncontrolled passions did not only signify a diseased soul, but could also precipitate the dysfunction of the body through the dysregulation of its vital heat.[45] To exercise self-mastery was, quite literally, to keep one's cool.

I have certainly not done justice here to the complexity of the role of heat in the interrelated philosophical and medical traditions of the Greek and Roman world. Still, we may hazard a very general conclusion: in Greek and Roman antiquity, to name the heart as the seat of certain passions was not to indulge in metaphor, but rather to report a scientific fact of both

---

[42] See esp. Aristotle, *Juv. sen.* 10–22 (471b–478b); Galen, *Ut. resp.* (IV.470–511K). And, for the Hippocratic corpus, see C. R. S. Harris, *The Heart and the Vascular System in Ancient Greek Medicine: From Alcmaeon to Galen* (Oxford: Clarendon, 1973), 79–80.

[43] Mendelsohn, *Heat and Life*, 17–22.

[44] Galen, *San. tu.* 2.9 (VI.137–38K); trans. P. N. Singer, *Galen, Writings on Heath:* Thrasybulus *and* Health (De Sanitate Tuenda), Cambridge Galen Translations (Cambridge: Cambridge University Press, 2023). Cf. Philodemus, *De ira* (P.Herc. 182) 8.32–41. And see further P. N. Singer, "The Essence of Rage: Galen on Emotional Disturbances and Their Physical Correlates," in *Selfhood and the Soul: Essays on Ancient Thought and Literature in Honour of Christopher Gill*, ed. Richard Seaford, John Wilkins, and Matthew Wright (Oxford: Oxford University Press, 2017), 161–96.

[45] Singer, "The Essence of Rage"; Julien Devinant, "Disorders of the Soul: Emotions and Clinical Conditions in Galen," in *Medical Understandings of Emotions in Antiquity: Theory, Practice, Suffering*, ed. George Kazantzidis and Dimos Spatharas (Berlin: de Gruyter, 2022), 247–69.

moral and medical import. An overheated heart threatened the equilibrium of those vital life forces—animal heat and spiritual breath—that sustained the human as a rational animal (and perhaps also, however mysteriously, maintained the order of the cosmos).

In sum: Across a wide variety of cultures, people describe states of high arousal by speaking of heated hearts. But these idioms do not all mean the same thing, for the specific emotions thereby designated differ in different language communities, ranging from anger or erotic passion to compassion or shame. Moreover, even where they do describe similar emotions and thus the same basic physiological processes, these emotions are embedded in diverse moral and cosmological frames—different ways of imagining the self, society, and the world. And because these emotions mean something different, they feel differently, too. For feeling is a reflexive process wherein how one feels itself becomes part of the variegated assemblage of internal and external stimuli of which one's emotions are an appraisal. Consequently, how one names, conceptualizes, and evaluates an emotion inflects the emotion itself.[46]

Hearts Strangely Warmed

Curiously, despite the close association in the Greek imagination of the heart with the human organism's innate heat and, more specifically, with the heat aroused by the passions, the specific terms used in Luke 24:32—καίω and καρδία—are rarely found together. A *TLG* search uncovers only one occurrence that predates Luke's Gospel. This comes in the opening scene of Aristophanes's *Lysistrata*, where the title character expresses her frustration with the women of Athens, who laze in bed rather than heed her summons: κάομαι τὴν καρδίαν, καὶ πόλλ᾽ ὑπὲρ ἡμῶν τῶν γυναικῶν ἄχθομαι (9–10). This is heart burning with vexation (ἄχθομαι), not with fervor, as is diagnosed also by her companion, Calonice, who comments on her arched eyebrows and chides her not to be so gloomy (μὴ σκυθρώπαζ᾽ ὦ τέκνον, 7–8)—using, I might note, a verbal form of the same term with which Luke describes the disheartened disciples at the outset of the Emmaus account (σκυθρωποί, 24:17). Similarly, the surviving epitome of the second-century CE grammarian Phrynicus Arabius's *Training of the Sophist* includes the phrase τὴν καρδίαν κάεσθαι among its list of purportedly Attic words and idioms and provides the following gloss: ἐπὶ ὑπερβαλλούσης ῥηθείη ἀνίας ("it might be said upon exceeding distress").[47]

This is a far cry from the feelings ascribed to Cleopas and his companion by most modern commentators. Nonetheless, in a recent reevaluation of Luke 24:32, Young Wook Lee has argued that Luke's phrase bears a similar sense, conveying not ardor or joy but rather the distress of conflicted thoughts as the disciples struggle to reconcile Jesus's teaching with their existing scriptural and theological convictions.[48] Lee does not cite Aristophanes or Phrynicus. Instead, positing "Semitic influence" on Luke's account, he examines references to burning hearts in the Hebrew Bible and the Septuagint. Particularly notable are Ps 73:21 (72:21 LXX), where the translator renders the bitter heart and pierced kidneys of the Hebrew text with a burnt-up heart

[46] William M. Reddy, "Emotional Styles and Modern Forms of Life," in *Sexualized Brains: Scientific Modeling of Emotional Intelligence from a Cultural Perspective*, ed. Nicole C. Karafyllis and Gotlind Ulshöfer (Cambridge, MA: MIT Press, 2008), 92–96; cf. Reddy, *The Navigation of Feeling: A Framework for the History of Emotions* (Cambridge: Cambridge University Press, 2001), 101–7.

[47] J. de Borries, ed., *Phrynichi sophistae praeparatio sophistica* (Leipzig: Teubner, 1911), 113.

[48] Young Wook Lee, "A New Proposal for the Meaning of καρδία–καίω in Luke 24:32: In the Light of Historical-Literary Approaches," *Korean Evangelical New Testament Studies* 16 (2017): 70-112 (Korean). I am grateful to my colleague Paul Kim for his assistance in accessing this article.

(ἐξεκαύθη ἡ καρδία μου) and "changed" kidneys (οἱ νεφροί μου ἠλλοιώθησαν);[49] and Ps 39:3 (38:4 LXX), where the psalmist elaborates on the pain (ἄλγημα) of his inner turmoil by noting that his heart grew hot within him (ἐθερμάνθη ἡ καρδία μου; cf. Jer 20:9; T.Naph. 7.4 [ἐκαιόμην τοῖς σπλάγχνοις]). Luke, too, Lee suggests, is describing not elation but the turmoil of inner conflict—specifically, a conflict in the disciples' minds between two opposing conceptions of the Messiah.

Lee's is an admirable attempt to reckon with the textual data, sparse though it may be. However, his reading depends on a misleading generalization.[50] In three of the texts he cites, the discomfort of an internal fire—whether located in one's heart (Ps 39:3; cf. Job 32:18–20), bones (Jer 20:9), or bowels (T.Naph. 7.4)—is one that might be relieved by speaking a truth that one has pent up inside.[51] This is, in other words, an idiom rather more specific in meaning than Lee allows; it describes not simply conflicted thoughts or feelings but a suppressed compulsion to speak.[52] It is difficult to see the relevance of such an idiom to Luke 24.

In any case, when one expands one's purview beyond the Septuagint and related sources, the lexical data are hardly conclusive. Indeed, the writer who compiled the erotic spells in P.Lond. I 121 (*PGM* VII) put the language of a burning heart to rather different use:[53]

> Take a shell from the sea and draw on it with myrrh ink the figure of Typhon given below, and in a circle write his names, and throw it into the heating chamber of a bath. But when you throw it, keep reciting these words engraved in a circle and "attract to me her, NN, whom NN bore, on this very day, from this very hour on, with her soul and heart aflame [καιομένη τὴν ψυχὴν καὶ τὴν καρδίαν], quickly, quickly, immediately, immediately." (*PGM* VII.467–72 [trans. Betz]; cf. *PGM* XXXVI.69–101)

The basic logic here is common in ancient magic: an action performed on a ritual object—here, burning—achieves a parallel effect on the target of the spell, in this case, an erotic conflagration. Although the specific phrase καιομένη . . . τὴν καρδίαν appears only here,[54] the use of fire is very common in erotic spells, as might be expected given the ubiquitous association of *erōs* with burning.[55] (Here one example will suffice: in Plutarch's *Dialogue on Love*, Sappho is remembered as speaking words "mingled truly with fire; through her song she communicates the heat of her heart [τὴν ἀπὸ τῆς καρδίας θερμότητα]" [762f (Minar, LCL); cf. Sappho frag. 2; Longinus, *Subl.* 10].)

---

[49] Both Hebrew idioms convey grievance or distress. See further Thomas, *Anatomical Idiom and Emotional Expression*, 41.

[50] Cf. Erich Klostermann, *Das Lukasevangelium*, 2nd ed., HNT 5 (Tübingen: Mohr Siebeck, 1929), 238.

[51] As observed also by I. Howard Marshall, *The Gospel of Luke: A Commentary on the Greek Text*, NIGTC 3 (Grand Rapids: Eerdmans, 1978), 898–99. Cf. Philo, *Ios.* 167.

[52] And nowhere at all do we find "eine dialektische Empfindung zwischen Glück und Schmerz," as suggested by Gerhard Hotze, *Jesus als Gast: Studien zu einem christologischen Leitmotiv im Lukasevangelium*, Forschung zur Bibel 111 (Würzburg: Echter Verlag, 2007), 117.

[53] Proposals for the manuscript's date range from the 3rd to 5th centuries. See Alberto Nodar and Sofia Torallas Tovar, "Paleography of Magical Handbooks: An Attempt?," in *Los papiros mágicos griegos: Entre lo sublime y lo cotidiano*, ed. Emilio Suárez, Miriam Blanco, and Eleni Chronopoulou (Madrid: Dykinson, 2015), 59–66.

[54] But see ἐν φρασὶ καιομέναν already in Pindar, *Pyth.* 4.219; cf. Sappho frag. 48.2: ἔμαν φρένα καιομέναν πόθωι.

[55] See Christopher Faraone, *Ancient Greek Love Magic* (Cambridge, MA: Harvard University Press, 1999), 58–60.

As Christopher Faroane has observed, such erotic spells have much in common with curses that inflict suffering on their targets in order to compel them to a desired course of action;[56] after all, the burning of *erōs* was not a very pleasant feeling. “I detest Eros,” reads an epigram attributed to Alcaeus, “for why doesn’t he attack wild animals, if he is so grievous (βαρύς), but rather fires arrows at my heart?”[57] Tormented by erotic passion he does not know how to consummate, the title character of Longus’s novel *Daphnis and Chloe* contrasts the painful burning in his heart with the insufficient warmth of the spring sun: εἰ γὰρ οὕτως γένοιτο . . . θερμός, ὡς τὸ κᾶον πῦρ τὴν καρδίαν τὴν ἐμήν (3.10.4; cf. P. Grenf. I 1.9). A love spell from the fourth century suggests something of the agonized yearning such imagery implied: “Attract to me, NN, her, NN, aflame, on fire, flying through the air, hungry, thirsty, not finding sleep, loving me” (*PGM* XXXVI.109–11; cf. *PGM* XIXa.50–54).

I am aware of no modern commentator who thinks Luke is describing lovesick disciples. Patristic commentary, however, reflects a strikingly similar constellation of motifs, as though displacing the bittersweet agony of *erōs* with the painful yearning of divine love. Commenting on the love-wound of the bride in Cant 2:5, Origen is reminded of the burning hearts of the Emmaus disciples:

> How beautiful, how fitting it is to receive a wound from Love! One person receives the dart of fleshly love, another is wounded by earthly desire; but do you lay bare your members and offer yourself to the *chosen dart* [Isa 49:2], the lovely dart. . . . How blessed it is to be wounded by this dart! Those men who talked together, saying to each other: *Was not our heart burning within us* . . . had been wounded by this dart. (*Hom. Cant.* 2.8 [trans. Lawson])[58]

Tellingly, the symptoms of this wound look a lot like those inflicted by the darts of Eros: “He yearns and longs for Him by day and night, can speak of nought but him, would hear of nought but him, can think of nothing else, and is disposed to no desire nor longing nor yet hope, except for him alone” (*Comm. Cant.* 3.8 [trans. Lawson]). The hopeful practitioner of a magical erotic formula could hardly wish for more. The exegete of Luke’s Gospel, however, must move on, for burning divine love simply is not a Lukan motif.

Where then does this leave us? In short, despite Phrynicus’s claim to the contrary, Luke’s usage does not appear to reflect an established idiom. In *Lysistrata* 9 and Ps. 72:21 LXX, burning hearts signify distress; but these are isolated instances stemming not from established usage but from the poet’s creativity—as is also the isolated reference to a warm or glowing heart to indicate joy in Euripides’s *Electra* (χαρᾶι θερμαινόμεσθα καρδίαν [401–2]). In the Hebrew Bible and its cultural heirs, an internal fire can suggest the painful internal pressure of suppressed words threatening to boil over (Ps 39:3; Jer 20:9; T.Naph. 7.4)—or, on one occasion, rebellious anger (Hos 7:6–7 [ἀνεκαύθησαν ὡς κλίβανος αἱ καρδίαι]). In erotic spells and Greek romances, we do see an idiom develop wherein burning hearts convey the painful yearning of unconsummated passion. But these sources postdate Luke’s Gospel, and are in any case of

---

[56] Faraone, *Ancient Greek Love Magic*, 43–55.

[57] *Anth. pal.* 5.10, trans. from David Konstan, “Between Appetite and Emotion, or Why Can’t Animals Have Erôs?,” in *Erôs in Ancient Greece*, ed. Ed Sanders et al. (Oxford: Oxford University Press, 2013), 19.

[58] Elsewhere, Origen takes the fire in the hearts of the Emmaus disciples as the enlightening and purifying fire of the divine word (*Hom. Jer*. 20.8; *Hom. Exod.* 13.4). See further Bogdan Gabriel Bucur, *Scripture Re-Envisioned: Christophanic Exegesis and the Making of Christian Bible*, The Bible in Ancient Christianity 13 (Leiden: Brill, 2019), 36–40.

dubious relevance to construing the affective experience of Cleopas and his companion. Our philological foray thus appears to have led us to a dead end.

Yet this negative result is instructive, too. For if Luke did not entrust its meaning to the phrase's conventionality, he necessarily relied on narrative cues and his reader's own affective intuition to discern its sense. The phrase is, in other words, a poetic flourish. *Qu'il faut savoir gré à Luc de ce coeur échauffé, brùlant aux paroles du Christ!*

This does not, however, mean that modern exegetes can simply feel their way to its interpretation. In fact, the phrase's idiosyncrasy puts us at a distinct interpretive disadvantage, for, as we have seen, the experiences of the feeling self with which such an expression must resonate in order to be intelligible are the products of shared physiology, yes, but also of cultural history; and adequately surveying the diffuse evidence for a historically situated affective sensibility is considerably more difficult than correctly rendering a discrete idiom. Indeed, here we come face to face with what is both the great challenge and the tantalizing promise of the history of emotions. Accordingly, the proposal that follows is intended to be suggestive and not conclusive.

Conclusion: Burning, Enthusiasm, and the History of Emotions

We begin again with Meyer: "The extraordinarily lively emotions are, as in all languages, represented under the image of burning, of heat, of being inflamed, and the like."[59] Yes, true enough. While Luke's image of a burning heart does not reflect an established idiom, nevertheless it does draw on the moral and medical assumption, ubiquitous in the Greek and Roman worlds, that rising passions correlate with the rising of heat in the heart. Accordingly, the sensation Luke's disciples recall might in the terms of modern affective science be deemed an experience of heightened emotional arousal.

Here, however, we reach an apparent impasse. For, as Lee rightly notes, there is nothing in the lexical record to suggest that "burning hearts" might indicate a salutary feeling. And yet the shape of the Lukan narrative invites readers to assimilate this feeling with the surprise, hope, and joyful disbelief of other resurrection witnesses.[60] As has often been observed, the broad emotional arc of the postresurrection appearance narratives in Luke 24 runs from the gloominess of dashed hopes (vv. 17, 21; cf. Luke 19:37) to a wondrous joy (vv. 41, 52). And woven into this emotional arc is another narrative trajectory: the gradual opening of the disciples' eyes (v. 31) and minds (v. 45) to the role of Jesus's death and resurrection in the preordained divine plan as revealed in the scriptures.[61] If, then, the disciples' formerly unperceiving and sluggish hearts (v. 25) begin to burn as Jesus opens to them the scriptures, this would seem to mark a waypoint somewhere on the road from blindness to understanding, doubt to faith, and therefore also from sadness to joy.

Suggestive in this regard is the response of the gathered disciples to the appearance of the resurrected Jesus in the following pericope. Straightforward joy will come at the end of the story, after they, like the Emmaus disciples, have been taught by Jesus the hidden teaching of the scriptures (v. 52). In the meantime, seeing and touching the risen Jesus, they are "amazed" (θαυμαζόντων) and "still in disbelief from joy" (ἔτι δὲ ἀπιστούντων . . . ἀπὸ τῆς χαρᾶς, v. 41) as their senses, perceptions, and feelings struggle to realign. Given this narrative context, it seems

---

[59] Meyer, *The Gospels of Mark and Luke*, 581.

[60] Cf. Lee, "καρδία–καίω," 96–97.

[61] See esp. Anke Inselmann, *Die Freude im Lukasevangelium: Ein Beitrag zur psychologischen Exegese*, WUNT 2/322 (Tübingen: Mohr Siebeck, 2012), 374–75.

probable that Luke's "burning hearts," too, should be taken to convey some combination of awakening perception and the hopeful joy it inculcates alongside residual disbelief. Indeed, it is tempting to see in Luke's phrase an echo of an affective experience that might have become familiar among early Christian readers, namely, the wondrous, faith-inducing thrill of finding the present written into the ancient scriptures, which, read correctly, fit their messianic convictions like a hand in a glove.[62]

And yet, again, there simply is no precedent for such usage. Nor did prevailing conceptions of affective physiology easily lend themselves to it. On the contrary, as we have seen, it was a commonplace moral and physiological presumption that rising heat in the heart was a symptom of unbridled passion—rage, anxiety, shame, etc. Galen, for one, would be hard pressed to see a burning heart as anything other than a moral or medical disease, the failure of one's reason and one's cooling breath (πνεῦμα) to maintain the body's affective and thermal equilibrium.

Tellingly, in Luke, τὸ πνεῦμα is not a cooling force, but is itself depicted as fire.[63] This is most explicit, of course, in the Pentecost account in Acts, where a rushing wind and tongues of fire indicate the presence of the Holy Spirit (2:4–5; cf. Luke 3:16). But we might notice also the description of Apollos in Acts 18:25 as one spoke ardently, "boiling in spirit" (ζέων τῷ πνεύματι ἐλάλει). This phrase, too, is a Christian neologism, appearing in this positive sense first in the paraenesis of Rom 12:11 (τῷ πνεύματι ζέοντες) and then also here in Acts. These texts mark a striking departure from earlier usage. When Aeschylus had invoked the image of one boiling in spirit (πνεύματι . . . ζεῖ), this was a daimon seething with anger (*Sept*. 708). Indeed, as we have seen with the affective use of the verb καίω, ζέω appears most frequently in conjunction with morally problematic emotions—especially anger or rage (Plato, *Resp.* 4.440c; 4 Macc 18:20; Chariton, *Chaer.* 1.5.1; Philo, *Migr.* 210; Galen, *PHP* 3.1.30 [V.292K]), but also lust (Philo, *Her*. 64) and "the passions" more generally (Philo, *Sacr.* 15; *Plant*. 144; cf. Plutarch, *Suav. viv.* 4 [1088f]; Sophocles, *Oed. col.* 434). Nonetheless, Christian writers took up the phrase enthusiastically to convey spiritual fervor.

What we are witnessing here, I would tentatively suggest, is more than a shift in usage or a lexical curiosity. These phrases mark instead a profound change in the moral landscape of the Roman world—more specifically, the uneven rise of an alternate moral valuation of emotions previously deemed problematically excessive. To be sure, many later writers, Christian and otherwise, would continue to endorse the notion, most frequently associated with Stoicism, that reason should master the passions.[64] And the valorization of (religious) fervor was not entirely without precedent (e.g., Plato, *Phaedr.* 251b). Still, it is remarkable that concurrent with rise of Christianity came a new possibility in the affective imaginary such that burning hearts and boiling spirits might be understood as symptoms not of disequilibrium and disease, but rather of righteous fervor or burning love.

---

[62] Cf. Acts 2:14–42; 8:26–39; etc.; Barn. 1:7–8. Early Christian isopsephisms, which likewise revel in hidden correspondences, reflect this same sensibility. See Roger S. Bagnall, *Everyday Writing in the Graeco-Roman East* (Berkeley: University of California Press, 2011), 22–23.

[63] On Luke's Spirit/fire metaphor and the Emmaus story, see Anna Maria Schwemer, "Der Auferstandene und die Emmausjünger," in *Auferstehung – Resurrection*, ed. Friedrich Avemarie and Hermann Lichtenberger, WUNT 135 (Tübingen: Mohr Siebeck, 2001), 115.

[64] See, e.g., L. Michael White, "Moral Pathology: Passions, Progress, and Protreptic in Clement of Alexandria," in *Passions and Moral Progress in Greco-Roman Thought*, ed. John T. Fitzgerald (London: Routledge, 2008), 284–321.

Particularly illuminating in this regard are the third-century *Acts of Thomas*, which, hostile as they are to sexual passion, do not prescribe self-restraint as its antidote but rather celebrate an alternative passion—"a different marriage," as one chaste and joyful bride exclaims of her new-found devotion to Christ (14.3). One beautiful young man, struck dead on account of his lustful passion but now raised up by Thomas, is counselled by the apostle to become a follower of "the one whom now in your burning love you seek" (οὗ νῦν διὰ τῆς ζεούσης σου ἀγάπης ἐπιζητεῖς, 35.1). Here the pathway to rest (ἀνάπαυσις) and joy (χαρά) is not self-mastery but surrender to holy desire.[65] Clearly, this text occupies an affective regime quite different from that policed by Galen or Plutarch or Philo.[66] And it seems to me worth asking whether the ascendency of Christian groups might in part be attributed to their adeptness in riding this cultural wave, which is also to say, that the rise of Christianity might run in parallel with a new chapter in the history of emotions—a chapter of which Luke's otherwise puzzling phrase is an early harbinger. But by now we have walked far past Emmaus.

---

[65] Cf. B. Diane Lipsett, *Desiring Conversion: Hermas, Thecla, Aseneth* (New York: Oxford University Press, 2011).

[66] For an "emotional regime" as a politically resonant "normative order for emotions," see Reddy, *Navigation of Feeling*, 124–25.