

# Pediatrics in Medieval Islamic *Theoria*

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This article analyzes the pediatric material in the Arabic commentaries (written tenth–fifteenth centuries) on the Hippocratic *Aphorisms* by exploring the traces of its late-antique origins and highlighting the influences of contemporary Islamic sources. This study demonstrates, first, how the commentaries assimilate Galenic pediatric theory through intricate elaborations and innovations; and second, that the commentators on the *Aphorisms* exhibit a strict theoretical interest in the causes and nature of childhood diseases as opposed to their remedies. Consequently, it shows that therapeutic pediatric material was restricted to other nonexegetical genres, such as the encyclopedias of Ibn Sīnā and Ibn Rabban al-Ṭabarī. The commentary material is thus a unique example of medieval Islamic *theoria* or theoretical medicine, which transmitted and transformed Galenic and early medieval theoretical explanations of childhood illnesses through the centuries.

## INTRODUCTION

The Hippocratic *Aphorisms* (fifth or fourth century BCE) contain five aphorisms on childhood illnesses (iii.24–28) that have been the subject of pediatric discussions from late antiquity to the medieval Islamic period. Exegetical treatment of these pediatric verses is found especially in the commentaries on the *Aphorisms* by Galen and Palladius as well as Arabic commentaries written between the ninth and fifteenth centuries.<sup>1</sup> The unique contributions of these Arabic commentaries make them an important source for the history of pediatrics in their own right. In addition, the timeline covered by the commentaries makes them an ideal set of texts to illustrate a process of assimilation of late-antique medicine, which lasted from the classical period to the fifteenth century.<sup>2</sup>

In this article, I situate the pediatric material in the Arabic commentaries on the *Aphorisms* within the context of both contemporary pediatric sources and medical works from late

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1. For Galen, see *Claudii Galeni Opera Omnia*, ed. K. G. Kühn, 20 vols. (Leipzig: Knobloch, 1829), vols. 17b, 18a. Palladius's Greek commentary is lost to date. A manuscript containing a loose Arabic interpretation of the first two books of his commentary survives in the private collection of Farid Sami Haddad. It has been preliminarily edited by H. Biesterfeldt and T. Mimura (unpublished). For a discussion of this text, see P. E. Pormann et al., "The Enigma of Arabic and Hebrew Palladius," *Intellectual History of the Islamicate World* 5 (2017): 252–310. As for the Arabic commentaries, a first discussion is F. Rosenthal, "'Life is Short, the Art Is Long': Arabic Commentaries on the First Hippocratic Aphorism," *Bulletin of the History of Medicine* 40.3 (1966): 226–45. A detailed overview of the *Aphorisms* is P. E. Pormann and K. I. Karimullah, "The Arabic Commentaries on the Hippocratic *Aphorisms*: Introduction," *Oriens* 45.1–2 (2017): 1–52.

2. This terminus ad quem stems from the date of the latest currently known Arabic commentary within this tradition, that of al-Manāwī (n. 20); as far as the knowledge of present scholarship goes, the tradition seems to have ended then. The fifteenth-century commentary on the *Aphorisms* by Nafis ibn ʿIwāḍ al-Kirmānī (d. 1449), as reported by F. Sezgin (*GAS* 3: 31), is not in fact a commentary but a medical treatise, as Peter Pormann has established based on the manuscript London, Royal College of Physicians, Tritton 31 and 32.

antiquity.<sup>3</sup> I aim to answer how often and in which way they rely on these sources conceptually and how they compare to these works in terms of purpose and scope. I argue that the pediatric material in the commentaries differs from these nonexegetical sources in terms of its theoretical character. Moreover, while other Islamic scholars draw from a plethora of late-antique sources, the commentators reproduce mostly Galenic and previous Arabic exegetical material. By analyzing the structural ways in which the Arabic commentators interact with Galenic pediatric material, I will show how they typically tend to frame their innovations within a Galenic medical system,<sup>4</sup> while only occasionally initiating shifts of a theoretical nature.<sup>5</sup> This being the case, their numerous pragmatic solutions and explanations prove that the commentaries do not need to be revolutionary to be creative and innovative.<sup>6</sup> In line with Abdelhamid Sabra's naturalization thesis,<sup>7</sup> I argue that, while adopting Galenic views of the child, Islamic physicians made innovative contributions based on Islamic pediatric traditions and scholarship.

The first commentary on the *Aphorisms* in Arabic was Ḥunayn Ibn Ishāq's (d. 873) translation of Galen's second-century CE commentary on the text.<sup>8</sup> It is after the fashion of this translation that the first Arabic commentators shaped their texts, and thus Galen's influence can be recognized throughout the commentary tradition.<sup>9</sup> The present analysis includes the following ten Arabic commentaries:<sup>10</sup> From the classical period, al-Nīlī's (d. 1029) summary-commentary,<sup>11</sup> followed by the commentaries of Ibn Abī Šādiq (d. 1089, also called "the second Hippocrates")<sup>12</sup> and Abū Ḥusayn al-Sinjārī (fl. ca. 1100).<sup>13</sup> A few generations

3. I will discuss this material below. For now, I refer to P. E. Pormann, "The Greek and Arabic Fragments of Paul of Aegina's Therapy of Children" (MPhil diss., Univ. of Oxford, 1999), for an overview of this late-antique material. The edition by G. Bos and M. McVaugh of al-Rāzī, *On the Treatment of Small Children (De curis puerorum): The Latin and Hebrew Translations* (Leiden: Brill, 2015) (on which more in n. 35 below), expands this overview to include early medieval Islamic works such as that by Ibn al-Jazzār (n. 33).

4. On Galenism, see O. Temkin, *Galenism: The Rise and Decline of a Medical Philosophy* (Ithaca: Cornell Univ. Press, 1973).

5. M. Ullmann, *Islamic Medicine* (Edinburgh: Edinburgh Univ. Press, 1978), 22.

6. An introduction to the orientalist narratives of stagnation and decline that tend to blame Islamic medicine in general and commentaries in particular for unoriginality, as well as an overview of recent rejections of these narratives (p. 527 n. 7), is N. Fancy, "Medical Commentaries: A Preliminary Examination of Ibn al-Nafīs's *Shurūh*, the *Mūjaz* and Subsequent Commentaries on the *Mūjaz*," *Oriens* 41.3–4 (2013): 525–27. A similar overview can be found in K. I. Karimullah, "Transformation of Galen's Textual Legacy from Classical to Post-Classical Islamic Medicine: Commentaries on the Hippocratic Aphorisms," *Intellectual History of the Islamicate World* 5.3 (2017): 311–58, at 315 n. 10. See also A. I. Sabra, "The Appropriation and Subsequent Naturalization of Greek Science in Medieval Islam: A Preliminary Statement," *History of Science* 25.3 (1987): 223–43; G. Saliba, *Islamic Science and the Making of the European Renaissance* (Boston: MIT Press, 2007).

7. Sabra, "Appropriation." Sabra argues that the "imported sciences" were naturalized in the Islamic world after a process of assimilation.

8. For books 1–7 of Galen, *Sharḥ Jālīnūs li-Fuṣūl Abuqrāṭ bi-tarjama Ḥunayn ibn Ishāq*, ed. P. E. Pormann et al., see the online research portal of the University of Manchester, DOI nos.: 10.3927/51689293; 10.3927/51689327; 10.3927/51689446; 10.3927/51931732; 10.3927/51931800; 10.3927/51931843; and 10.3927/51931881.

9. Cf. Karimullah, "Transformation," for an argument in favor of the decline of the textual influence of Galen's commentary on the Arabic commentaries.

10. Each of these commentaries has recently (2012–2017) been edited by a team at the University of Manchester, led by Peter E. Pormann. The pediatric material is found in the third book of each commentary unless otherwise specified. For citation purposes, the DOI no. is given.

11. Al-Nīlī, *Talkhīṣ sharḥ Jālīnūs li-kitāb al-Fuṣūl ma'a nukat min sharḥ al-Rāzī li-Abī Sahl al-Nīlī*, DOI: 10.3927/52131464.

12. Ibn Abī Šādiq, *Sharḥ Fuṣūl Abuqrāṭ*, DOI: 10.3927/51932105.

13. Al-Sinjārī, *Kitāb Taysīr al-wuṣūl ilā tafsīr al-Fuṣūl*, DOI: 10.3927/52132424. Very little is known about this commentator, whose name is sometimes also rendered as al-Shajārī.

later, the exegetical tradition continues with the commentaries of ‘Abd al-Laṭīf al-Baghdādī (d. 1231),<sup>14</sup> Abū l-Faraj ibn Ya‘qūb ibn Ishāq Ibn al-Quff (Damascus, d. 1286), who wrote an extensive commentary,<sup>15</sup> and his contemporary Ibn al-Nafīs (d. 1288).<sup>16</sup> From the early, mid-, and late fourteenth century respectively, three commentaries have been transmitted: those of ‘Abd Allāh ibn ‘Abd al-‘Azīz ibn Mūsā al-Siwāsī,<sup>17</sup> Ibn Qāsim al-Kilānī,<sup>18</sup> and ‘Abd al-Raḥīm al-Ṭabīb.<sup>19</sup> The latest Arabic commentary included is that by Abū l-Himam Nūr al-Dīn ‘Alī al-Manāwī, who died after 1495.<sup>20</sup>

This article will focus in particular on the diseases of young children. In the third book of the *Aphorisms*, Hippocrates first describes the diseases that accompany the four seasons. In the last eight aphorisms of the chapter, he does the same for the four “seasons” of life; the first five of these aphorisms are on childhood.<sup>21</sup> Dividing childhood into four stages, he devotes these aphorisms to respectively newborns (iii.24), teething children (iii.25), children of a more advanced age (iii.26), and those on the verge of manhood (iii.27), with a more general discussion about crises in children in iii.28.<sup>22</sup>

While al-Manāwī follows this classification, al-Baghdādī changes the names of the stages: the second stage begins not with teething, according to him, but with weaning (which usually occurs after their second year). Ibn al-Quff, moreover, speaks of five stages, adding the age of adolescents: *sinn al-ṭufūla*, *sinn al-ṣabī*, *sinn al-tara‘ruṣ*, *sinn al-murāhaqa*, *sinn al-fatayān*.<sup>23</sup>

14. Al-Baghdādī, *Sharḥ Fuṣūl Abuqrāt*, DOI: 10.3927/51688949. Al-Baghdādī is one of the better documented scholars within the corpus; a good starting place would be C. M. Bonadeo, “‘Abd al-Latif al-Baghdadi,” *The Stanford Encyclopedia of Philosophy*, ed. E. N. Zalta, <https://plato.stanford.edu/archives/fall2015/entries/al-baghdadi/>.

15. Ibn al-Quff, *Sharḥ Fuṣūl Abuqrāt*, DOI: 10.3927/52132051. Ibn al-Quff was a Christian physician who spent most of his life in Syria.

16. Ibn al-Nafīs, *Sharḥ Fuṣūl Abuqrāt*, DOI: 10.3927/52065474.

17. Al-Siwāsī, *Kitāb ‘Umdat al-fuḥūl fī sharḥ al-Fuṣūl*, DOI: 10.3927/52132791. Little is known about al-Siwāsī except that he completed his commentary in 1314.

18. Al-Kilānī, *Sharḥ Fuṣūl Abuqrāt*, DOI: 10.3927/51688739. Ibn Qāsim al-Kilānī is an equally unknown scholar. He produced his commentary between 1340 and 1356.

19. ‘Abd al-Raḥīm al-Ṭabīb, *Wasā’il al-wuṣūl ilā masā’il al-Fuṣūl*, DOI: 10.3927/52066121. This is al-Ṭabīb’s commentary on Ibrahīm al-Kīshī’s epitome (cf. Karimullah, “Transformation,” 342) of Ḥunayn’s translation, produced in 1383. Little is known about al-Ṭabīb other than that a scribe who copied his commentary in 1387 seems to believe al-Ṭabīb had already died: MS Istanbul, Süleymaniye Kütüphanesi, Ayasofya 3670, fol. 68a, on which, see Karimullah, “Transformation,” 342.

20. Al-Manāwī, *Kitāb Taḥqīq al-wuṣūl ilā sharḥ al-Fuṣūl*, DOI: 10.3927/52097867. Al-Manāwī was a student of Muẓaffar al-Dīn al-Amshāṭī (d. ca. 1496); he taught medicine in the Mosque of Ibn Ṭūlūn in Cairo: Jalāl al-Dīn al-Suyūṭī, *Kitāb Naẓm al-‘iqyān fī a’yān al-a’yān*, ed. P. K. Hitti, *Al-Suyūṭī’s Who’s Who in the Fifteenth Century* (New York: Syrian-American Press, 1927), 174. See also al-Baghdādī, *Īdāh al-maknūn fī l-dhayl ‘alā Kashf al-ẓunūn ‘an asāmī al-kutub wa-l-funūn*, ed. S. Yaltkaya and K. R. Bilg, 2 vols. (Istanbul: Dept. of Education, 1945–1947), 2: 714.

21. The last three aphorisms cover “persons past boyhood,” “persons beyond that age,” and “old people”; see C. Magdelaine, “Histoire du texte et édition critique, traduite et commentée des Aphorismes d’Hippocrate,” 3 vols. (PhD diss., Université de Paris-Sorbonne Paris IV, 1994), 2: 408–9.

22. This sums up Galen’s description in his commentary on iii.26: ed. Kühn, 17b: 631.

23. Medieval European physicians seem to have acted similarly. Cf. L. Demaitre, “The Idea of Childhood and Child Care in Medical Writings of the Middle Ages,” in *The Journal of Psychohistory* 4.4 (1977): 461–90, at 465: “In defining the individual phases, however, the physicians often used different terms and added their personal observations.”

## THE LATE-ANTIQUÉ AND EARLY ISLAMIC PEDIATRIC TRADITIONS

The pediatric material in the Islamic medical commentaries draws from a medical tradition that consists of both early Islamic and late-antique sources. One of the most influential of these sources is Galen, who never wrote a specific pediatric treatise but nevertheless promulgates a systematic view of the child in the numerous discussions of children scattered throughout his works. This view, developed from Hippocratic theory, considers the child as warm and humid, with an especially humid brain, and with soft bones in the case of newborns.<sup>24</sup> Galen uses these characteristics to explain pediatric diseases. The difference in their levels of humidity, temperature, diet, and firmness of bones account for the varying diseases that children of different ages get. For instance, newborns suffer from moist ears because of the extreme humidity of their brains,<sup>25</sup> but they do not suffer incurvation of the vertebrae near the back of their heads (σπονδύλου τοῦ κατὰ τὸ ἴνιον εἴσω ὄσιες), as some children before puberty do, because their bones are too soft to stretch in this way.<sup>26</sup> Older children also suffer from stones (λιθιάσιες) because of their warmth combined with the many undigested humors they have due to cravings (διὰ τὴν ἀδηφαγίαν ὤμοις χυμοὺς ἀθροίζόντων).<sup>27</sup>

In addition to Galen, late-antique pediatric sources include the works of a number of Roman and Byzantine physicians. Rufus of Ephesus, for instance, seems to have written the first specific monograph on pediatrics in the Greek medical tradition: Περὶ κομιδῆς παιδίου (On the treatment of children), which only survives in Arabic fragments.<sup>28</sup> This work discusses many of the diseases mentioned by Hippocrates in his pediatric aphorisms; as does Soranus's *Gynecology*,<sup>29</sup> which in the second part discusses infant care and children's diseases (bk. 2.6–26), including such topics as treatment of the umbilical cord, swaddling, teething (including the diseases mentioned by Hippocrates in relation to this in aphorism iii.25), inflammation of the tonsils, thrush, itching, and coughing. Some of these topics later find their way into the fifth book of Oribasius's (d. 403) *Synopsis ad eustathium filium* and Aetius of Amida's (fl. sixth century) medical encyclopedia, which influenced the work of the seventh-century Byzantine physician Paul of Aegina, culminating in a treatise "On the Therapy and Treatment of Children," which mostly survives in Arabic.<sup>30</sup>

In the Arabic tradition, 'Alī Ibn Rabban al-Ṭabarī (d. ca. 870) is among the first to treat pediatrics in his encyclopedic *Firdaws al-ḥikma* (Paradise of wisdom); he devotes part ii.53 to the nursing and hygiene of the newborn child (*tarbiyat al-atfāl wa-ḥifẓ al-ṣiḥḥa*) and part ii.54 to the nourishment of the older child—mostly what children should be fed. He only treats infants briefly, he writes, because he believes that midwives (*qawābil*) and old women (*'ajā'iz*) know more about the topic than physicians.<sup>31</sup> In the tenth century, the physician Aḥmad b. Muḥammad al-Baladī (d. ca. 990) wrote a work in which he discusses in three

24. The most comprehensive article on Galen's medical view of the child is Simon Byl, "L'enfant chez Galien," in *Galeno, obra, pensamiento e influencia: Coloquio internacional celebrado en Madrid, 22–25 de marzo de 1988*, ed. J. A. López Férez (Madrid: Universidad nacional de educación a distancia, 1991), 107–17.

25. Ed. Kühn, 17b: 629.

26. Ed. Kuhn, 17b: 633.

27. Ed. Kühn, 17b: 634.

28. This treatise was known in Arabic as *Fī tadbīr al-atfāl*. The fragments have been collected, edited, and translated in P. E. Pormann, "Greek and Arabic Fragments," 57–68.

29. O. Temkin et al., trans., *Soranus' Gynecology* (Baltimore: JHU Press, 1956).

30. Edited in Pormann, "Greek and Arabic Fragments."

31. Ibn Rabban al-Ṭabarī, *Firdaws al-ḥikma fī l-ṭibb*, ed. M. Z. al-Siddiqi (Berlin: Buch- und Kunstdruckerei "Sonne," 1928), 98. This edition contains mistakes and should be used carefully.

parts obstetrics, the treatment of infants, and children's diseases.<sup>32</sup> Among these diseases he includes the Hippocratic childhood diseases, but adds many more, quoting Hippocrates, Rufus of Ephesus, Paul of Aegina, and Galen. He focuses both on causes and remedies, not unlike Ibn al-Jazzār's (d. 979) commentary, which treats infant care, including hygiene, feeding, and wet nurses, as well as childhood illnesses, of which he discusses both cause and treatment.<sup>33</sup>

Ibn al-Jazzār's work is remarkably similar to a Latin pediatric text called *De curis puerorum* (On the treatment of children), which is often presumed to be a translation of a work written by the early Muslim physician al-Rāzī (d. 925).<sup>34</sup> As Gerrit Bos and Michael McVaugh argue, however, its authorship is dubious.<sup>35</sup> Al-Rāzī only devotes a few pages to the treatment of children in both his *Kitāb al-Manṣūrī*<sup>36</sup> and *al-Ḥāwī*.<sup>37</sup> Finally, Ibn Sīnā, whose treatment of the topic is largely therapeutic, discusses the remedies of childhood illnesses in his *Qānūn fī l-ṭibb*, completed in 1025, in bk. 1.3.1.1–4.<sup>38</sup>

#### PRACTICAL VERSUS THEORETICAL PEDIATRICS

The commentaries on the *Aphorisms* exhibit a strict theoretical nature, with a strong interest in etiology. It is possible to suggest therefore that the genres of medieval medical literature—the encyclopedias, commentaries, and treatises—each had a unique focus with regard to practical and theoretical medicine. In this case, the commentaries on the pediatric *Aphorisms* differ from the encyclopedias and treatises in that they avoid practical solutions to children's diseases, solutions that feature amply in the works of al-Baladī and Ibn Sīnā. If we compare Galen's *Commentary* and Soranus's *Gynecology*, we can trace this difference to late antiquity.<sup>39</sup> It would go too far to argue that the medical commentary avoids practical medicine altogether; there is, after all, a repeated concern with remedies in several places, such as purging in *Aphorisms* iv.1–20 and v.29,<sup>40</sup> which by its very subject matter forces the commentary to engage in practical matters. Nevertheless, the commentators seem to approach even these matters from a more theoretical perspective. This is a hypothesis worth exploring further, although not within the scope of this article.

32. Al-Baladī, *Tadbīr al-ḥabālā wa-l-atfāl wa-l-ṣibyān wa-ḥifẓ ṣiḥḥatihim wa-mudāwat al-amrāq al-ʿarīda lahum*, ed. M. Q. Muḥammad (Baghdad: Dār al-Shuʿūn al-Thaqāfiyya al-ʿĀmma, 1987).

33. Ibn al-Jazzār, *Siyāsat al-ṣibyān wa-tadbīrihim*, ed. M. Ḥ al-Hila (Tunis: al-Dār al-Tūnisiyya li-l-Nashr, 1968). The influence of Ibn al-Jazzār on the commentaries—and possible influence on pseudo-Rāzī's text (see n. 35 below)—indicates that it was not “mostly ignored by East and West,” as suggested in A. Vanzan, “The Paediatric Treatise of a Fatimid Physician: Ibn al-Jazzar's *Kitāb Siyāsat al-ṣibyān*,” *Journal of Shi'a Islamic Studies* 5.2 (2012): 173–86, at 179.

34. Bos and McVaugh, *On the Treatment*.

35. For two reasons: It is never mentioned as one of al-Rāzī's works and, unlike many of his works, there is no trace of the original Arabic text. It survives only in late medieval Latin and Hebrew translations. Nevertheless, there are many words in the Latin translation that strongly suggest an Arabic source text, and its likeness with Ibn al-Jazzār's *Siyāsat al-ṣibyān* points to some sort of relationship between the two works.

36. Al-Rāzī, *al-Manṣūrī fī l-ṭibb*, ed. H. B. al-Ṣiddīqī (Kuwait: Maʿhad al-Makḥṭūʿāt al-ʿArabiyya, 1987), 231–32.

37. Al-Rāzī, *al-Ḥāwī fī l-ṭibb*, 21 vols. in 22 (Hyderabad: Dāʾirat al-Maʾārif al-ʿUthmāniyya, 1955). In this encyclopedia, al-Rāzī frequently quotes Rufus of Ephesus; see Pormann, “Greek and Arabic Fragments,” 57–68.

38. Ibn Sīnā, *al-Qānūn fī l-ṭibb* (Rome: Typographia Medicea, 1593), 75–79.

39. See P. N. Singer, “Levels of Explanation in Galen,” *Classical Quarterly* 47.2 (1997): 525–42, at 529: “Galen's works can very loosely be categorized as varying on a scale from the logically abstract to the therapeutically precise.” Accordingly, Galen's commentaries would be classed as more theoretical and less therapeutical.

40. Magdelaine, “Histoire du texte,” 2: 410–13, 437.

The divide between *theoria* and *practica* also comes through in an argument made by Avner Giladi, which contrasts the theoretical medicine of the physician with the practical care of the midwife:

It is reasonable to conclude that in the medieval Muslim world, as in Christian Europe (from the appearance of the first faculties of medicine in the newly established universities), the more distinguished, authoritative male doctor (*ṭabīb*) was mostly identified with theoretical medicine—the prestigious *scientia*, *theoria*, or *medicia*—whereas female physicians and midwives possessed *experientia*, *practica*, and *cerugia*, much like the male practitioner (*mutaṭabbib*).<sup>41</sup>

This difference between *ṭabīb* and midwife seems very likely; it is even acknowledged early on by Ibn Rabban al-Ṭabarī, who, as we have seen, noted that midwives and old women knew more about childcare than he did. It does not mean, however, that physicians (*aṭibbāʿ*) were uninterested in the *practica* of childcare, even if the commentaries seem to reinforce this impression—Ibn al-Jazzār, al-Baladī, and even Ibn Sīnā evidence an interest in both theoretical and practical pediatrics. Therefore, in addition to a gender-specific distinction between physician and midwife, it is useful to consider a genre-specific categorization of practical and theoretical pediatric scholarship, one that acknowledges physicians' focus on theoretical pediatric works without ignoring their interest in the care and treatment of children in other medical genres.

#### RELATIONSHIP TO THE GALENIC COMMENTARY

In contrast to al-Baladī, who regularly quotes late-antique physicians such as Paul of Aegina, Rufus of Ephesus, and Galen, the Arabic exegetes mostly rely on Galen or other Arabic sources for the pediatric section of their commentaries. They do not passively transmit Galen's work, but engage in what Abdelhamid Sabra has called "appropriation."<sup>42</sup> Especially in the earlier commentaries of, e.g., Ibn Abī Ṣādiq and al-Sinjārī, but also in later texts such as that of al-Baghdādī, Galen's commentary is so extensively commented, elaborated, and critiqued that it seems almost fair to say it achieves the status of source text (*matn*) itself. The commentators discuss Galen's explanations of the *Aphorisms* with almost as much devotion as they treat the Hippocratic text, even though they do not quote the commentary as formally as they do each individual aphorism.<sup>43</sup>

This engagement is reflected as well in the introductory statements at the beginning of many of their texts, in which all commentators (with the exception of Ibn al-Quff) acknowledge their reliance on Galen, who was widely respected and often called "the eminent" (*al-fāḍil*). This is less a reflection of their unoriginality than a clever strategy to justify the importance of their own commentaries through a careful self-positioning within the circle of Galen. Galen's commentary was rarely given verbatim;<sup>44</sup> although deemed superior, it was

41. A. Giladi, *Muslim Midwives: The Craft of Birthing in the Premodern Middle East* (Cambridge: Cambridge Univ. Press, 2015), 86.

42. Sabra, "Appropriation," 225.

43. In the commentaries, each individual aphorism is followed by commentary; Galen's words are consistently, if not systematically, quoted and explained in the comments.

44. There are only a few instances of the Galenic text as found in Ḥunayn's translation, usually with the earlier authors. For instance, for Galen's "[fever in teething children] is caused by pain, sleeplessness, and inflammation" (διὰ τε τῶς ὀδύνας καὶ τῶς ἄγρυπνίας καὶ τῶς φλεγμονάς), Ḥunayn's Arabic translation, which reads *fa-ya'riḍu li-l-ṣabī fī ḥādhihī l-sinn al-ḥummā bi-sabab al-waja' wa-l-sahar wa-l-waram*, is reproduced in Ibn Abī Ṣādiq, *Sharḥ Fuṣūl Abuqrāʾ*, 22: *wa-l-ḥummā taḥdathu bi-sabab al-waja' wa-l-sahar wa-l-waram*. Pain is given as a cause of fever also by Quff, al-Baghdādī, al-Sinjārī, Ibn al-Nafis, and al-Siwāsi.

not so perfect that it could do without the illumination of their own commentaries.<sup>45</sup> This paradox is visible early on in a short remark by Ibn Abī Šādiq at the start of his commentary, in which he praises Galen's commentary as being "complete in meaning" (*tāmm fī ma'nāhi*) while adding, "We intend to . . . add what he omitted from what we learned from him in other places."<sup>46</sup>

More than a century later, al-Baghdādī indicated the following about his method regarding Galen's commentary:

Had we not, in our book, adjusted (*wa-law kunnā lam nu'idd*) the comments Galen makes in his commentary, we would have called it a [mere] abridgement (*ikhtisār*) of his work, but we have added and removed [comments], advanced [some] and delayed [others], declared false those remarks that we thought deserved it, and changed the position of what we thought needed it. We did not adopt the syntax and grammar that he used, which is required by the Greek language [. . .], but we kept (*athbatnā*) the syntactical and grammatical features that were needed to facilitate understanding and lead to the [right] meaning.<sup>47</sup>

In the thirteenth century, Ibn al-Nafīs claims that he wrote his commentary in order to demonstrate the high quality of Galen's commentary by "unearthing the hidden treasures" in his works.<sup>48</sup> Over time, the prominent position of Galen's commentary text decreases.<sup>49</sup> Postclassical commentators, such as al-Siwāsī, replaced Galen's commentary with the earlier Arabic commentaries, especially that of Ibn Abī Šādiq, as exegetical source.

Galen's conceptual legacy and theoretical system remain vitally important within Islamic exegetical pediatrics, however, even if we take into account the occasional theoretical shifts. While innovations in the explanations of childhood illnesses were widespread from the oldest Arabic commentaries, Galenic explanations of childhood illnesses survived until the fifteenth century, while his pediatric theories remained influential throughout the Arabic commentaries.<sup>50</sup>

The changes the Islamic physicians make go well beyond their own humble claims of occasional expansion using Galenic material, the pointing out of hidden treasures, or mere grammatical adjustment. Keeping in mind that the commentaries were written over a period of more than five centuries, unique developments took place in each commentary. It is nevertheless possible to discern four different attitudes to Galen's legacy within each of the commentaries. These range from clarification and expansion to innovation and theoretical shifts that reject or ignore Galen.<sup>51</sup>

45. On this paradox, see I. Sluiter, "The Dialectics of Genre: Some Aspects of Secondary Literature and Genre in Antiquity," in *Matrices of Genre: Authors, Canons, and Society*, ed. M. Depew and M. Obbink (Cambridge, MA: Harvard Univ. Press, 2000), 183–203.

46. *Wa-naḥnu gharadnā an . . . nuḍif ilayhi mā aghfalāhū mim mā qad istafadnāhu minhu fī mawāḍi' ukhrā*. Ibn Abī Šādiq, *Sharḥ Fuṣūl Abuqrāt*, book I (DOI: 10.3927/51931955), 2. Compare Karimullah, "Transformation," 330: "[i]n spite of the fact that Ibn Abī Šādiq admired Galen greatly, he was willing to depart from him."

47. Al-Baghdādī, *Sharḥ Fuṣūl Abuqrāt*, book I (DOI: 10.3927/51688866), 3–4.

48. Ibn al-Nafīs, *Sharḥ Fuṣūl Abuqrāt*, Oxford, Bodleian Library, MS Pococke 294, fol. 2a.

49. As in the case of al-Ṭabīb's commentary; cf. Karimullah, "Transformation," 341–47.

50. For instance, Galen's view of the child as hot, humid, and soft-boned is used as an interpretive tool and the strict theoretical nature of his commentary remains a template throughout the medieval Islamic period.

51. Similar attitudes toward the source text have been identified in philosophical commentaries; see R. Wisnovsky, "Avicennism and Exegetical Practice in the Early Commentaries on the *Ishārāt*," *Oriens* 41.3-4 (2013): 349–78, at 354–57; A. Shihadeh, "Al-Rāzī's (d. 1210) Commentary on Avicenna's Pointers: The Confluence of Exegesis and Aporetics," in *The Oxford Handbook of Islamic Philosophy*, ed. Kh. El-Rouayheb and S. Schmidtke (New York: Oxford Univ. Press, 2016), 296–325, at 310. Kamran Karimullah ("Transformation," 336) also identifies some of what he calls Ibn Abī Šādiq's "ampliative strategies."

Elaboration of Galen's explanations happens on both conceptual and textual levels. Some comments suggest new explanations for diseases; others mainly aim to explain particular readings of the Hippocratic or Galenic texts. Alternative explanations tend to remain within Galen's framework or are taken from his work elsewhere. Even though the reproduction of earlier Islamic exegetical material features prominently in the postclassical commentaries, we also find a reliance on a limited number of other Islamic sources that include theoretical discussions of childhood illnesses, such as Ibn al-Jazzār and al-Baladī.

I will treat each of these approaches in the three sections below. First, I illustrate how Galen's explanations were adopted through clarification or elaboration. I then demonstrate how the commentators introduce new explanations instead of or in addition to Galen's, by either using Galenic thought, reproducing earlier Arabic material within commentaries, or adding their own ideas while still operating within a Galenic framework. Finally, I deal with those instances where the commentators break with Galen's medical system and introduce theoretical shifts. While using these approaches as a main analytical tool, I also explore how the commentaries relate to contemporary and other late-antique sources and illustrate their strong theoretical interest vis-à-vis the more practical character of the other medieval Islamic pediatric works.

#### CLARIFICATION, DEBATE, AND EXPANSION OF GALEN

##### 1. Clarification

Both the Hippocratic text and Galen's commentary were full of ambiguities that needed to be resolved by the Arabic commentators. In this section I will illustrate how they dealt with Galen's explanations of thrush, terrors, spasms, and otorrhea through clarification. In the case of the explanation of thrush (ἄφθαι, *qulā'*), a single word in an otherwise fully accepted Galenic theory was unclear. Galen writes that by ἄφθαι Hippocrates means "the wounds that occur at the surface of the mouth" (ἐπιπολῆς ἐλκώσεις), and he gives an explanation for these ulcers that was widely accepted in late antiquity and in the Islamic world. He argues that they occur because the extreme softness of an infant's organs makes it impossible for him to tolerate milk, which contains a lot of "whey" (ὀρρωδες, neut. sing. of ὀρός, "the watery part of milk"). Pseudo-Rāzī speaks of "the spoilage and sharpness of milk" (*corruptione et acumine lactis*).<sup>52</sup> Ḥunayn Ibn Iṣḥāq translates ὀρρωδες with *ruṭūba mā'iyya* ("watery moisture"). Ibn al-Jazzār slightly alters Ḥunayn's translation to *ruṭūba nābiyya* ("distasteful moisture").<sup>53</sup> Ibn Sīnā reproduces Galen's explanation in Ḥunayn's words as "the way the wateriness of the milk purges, this hurts them and gives them thrush (*kayfa jalā mā'iyyat al-laban fa-inna dhālika yu'adhhibuhum wa-yūrithuhum al-qulā'*)."<sup>54</sup>

Although the Arabic commentators adopt Galen's explanation of thrush, they avoid using Ḥunayn's translation of "moisture." They blame milk as the cause but offer various alternative interpretations of the harmful element responsible. Al-Nīlī and Ibn Abī Ṣādiq speak of the purgative power of milk (al-Nīlī: *fa-inna fīhi jalā'*) using the same verb "to purge." The early twelfth-century physician al-Sinjārī interprets the harmful element in milk as *faḍalāt*,

52. G. Bos and McVaugh, *On the Treatment*, 25. It is copied thus literally in a later, anonymous Hebrew translation (p. 34):

מאבעבועות בפי הילדים. נולדים בפרק הראשון מן השנים אבעבועות כשיקרו מהפסד החלב או חידודו.

53. Ibn al-Jazzār, *Siyāsat al-ṣibyān*, 108, although it could have been a misreading of *mā'iyya* on the part of a copyist.

54. Ibn Sīnā, *Qānūn*, 78.



residues, which echoes Ibn Rabban, who avers that if bad wounds (*al-qurūḥ al-radī'a*) happen to a child, it is because of the remnants (*fuḍūl*) of the wet nurse's body in her milk.<sup>55</sup>

Al-Baghdādī is the first of four later commentators to interpret the harmful content of milk as borax, perhaps an influence of his training in alchemy and related knowledge of minerals.<sup>56</sup> According to al-Baghdādī, “if the milk touches the mouth while containing borax (*bawraqiyya*), it causes wounds.”<sup>57</sup> He adds, in agreement with Galen, that this happens because of the softness of children's limbs and how quickly they become affected (*sur'at ta'aththurihā*). This returns in al-Ṭabīb, who speaks about the purging effect of the milk's borax (*jalā' bawraqiyyat al-laban*), while Ibn al-Nafis and later al-Manāwī interestingly combine al-Baghdādī's borax with Ḥunayn's wateriness,<sup>58</sup> providing an example of the continuous reproduction of exegetic material within the centuries-long commentary tradition.

The above illustrates how a Galenic explanation was adopted and then slightly transformed through the centuries as part of an ongoing process of reproduction and clarification, based in this case of thrush on philological reasoning and the application of knowledge derived from non-medical sciences such as alchemy.

## 2. Debate

While the example above illustrates an evolving understanding of medical terminology over time, without outspoken refutations of previous interpretations, we also find explicit debates over Galenic interpretations.<sup>59</sup> Sometimes Galen's interpretations caused confusion or disagreement, inspiring reinterpretations that were in turn rejected, replaced, or accepted by later commentators, resulting in a diachronic debate lasting over five centuries. Thus, much clarification happens in debate form, in which authors carefully quote and critically review the opinions of their predecessors. One of these debates concerns an ambiguity in *Aphorisms* iii.25, which treats the diseases that accompany teething. This aphorism reads as follows:

Πρὸς δὲ τὸ ὀδοντοφρεῖν προσάγουσιν οὐλῶν ὀδαξήσμοι, πυρετοί, σπασμοί, διάρροια, καὶ μάλιστα ὅταν ἀνάγωσι τοὺς κυνόδοντας καὶ τοῖσι παχύτατοισι τῶν παίδων καὶ τοῖσι τὰς κοιλίας σκληρὰς ἔχουσιν.<sup>60</sup>

Near dentition: irritations of the gums, fevers, convulsions, diarrhea, especially when their canines come through (lit. teeth of the dog), both in those who are obese and those who have hard abdomens.

The problem with this aphorism, as shown by the disagreements among the medieval Islamic scholars, lies in Hippocrates's concluding remark about heavy boys and constipated bowels. Galen interprets this to refer to spasms, arguing that spasms occur mostly to those children “who are obese and have hard abdomens.”<sup>61</sup> He explains that this happens because

55. Ibn Rabban al-Ṭabarī, *Firdaws al-ḥikma*, 97.

56. When al-Baghdādī moved to Damascus, he lost all respect for alchemy and wrote a treatise refuting the art, for which, see S. M. Stern, “A Collection of Treatises by ‘Abd al-Laṭīf al-Baghdādī,” *Islamic Studies* 1.1 (1962): 53–70.

57. *Bawraqiyya* < *bawraq*, “nitrum,” “aphronitrum,” and “borax”: G. W. Freytag, *Lexicon arabico-latinum*, 4 vols. (Halle: C. A. Schwetschke and Son, 1830–1837), 1: 111.

58. “Thrush . . . is caused by the purging effect of the milk's watery substance and its borax on the palate of the mouth, as this is extremely delicate (*li-annahū fī ghāyat al-līn*).” Ibn al-Nafis, *Sharḥ Fuṣūl Abuqrāt*, 30.

59. These were also identified in the case of the medical commentaries on the *Mūjaz*; see Fancy, “Medical Commentaries.”

60. Magdelaine, “Histoire du texte,” 2: 407.

61. Ed. Kühn, 17b: 631: ἄπερ ὂν ἢ παχύτατα καὶ κοιλίας ἔχοντα σκληρὰς.

“they are full of residues and are therefore easily affected by spasms, and especially spasms of this kind.”<sup>62</sup> Other Greek physicians shared this view; Rufus of Ephesus, for instance, also thought this specification of “obese children” referred specifically to spasms, as a quotation of his in al-Baladī makes clear:

Hippocrates mentioned this type of seizure that occurs because of repletion. It befalls children when they are close to [the age of] dentition. When this type of seizure befalls children after a fever, and especially obese children suffering from constipation, it is bad and deadly, as Rufus said in his book, “On the Upbringing of Children.”<sup>63</sup>

Ibn Sīnā agrees with Galen and Rufus, writing that convulsions happen “especially to a child with a fat and humid stomach (*fī man badanuhū ‘abl raṭb*),”<sup>64</sup> but within the exegetical tradition only al-Nīlī seems to agree with Galen (*li-anna badanahū mumtali’ fuḍūlan*, “because his body is full of remnants”). In contrast, Ibn Abī Ṣādiq argues that Hippocrates did not mean spasms, but diarrhea to occur specifically to obese boys:

وأما جالينوس فيرى أن التشنج يعترهم لضعف أعصابهم، وإن ذلك يعترى العبول، والمعقلي الطبيعة منهم أكثر لكثرة امتلائهم، والأولى عندي أن يضاف العبولة والاعتقال إلى الاختلاف.

Galen thinks that spasms happen to them because their nerves are weak, and that this happens to obese boys and those who are constipated because they are so full. But the main explanation for me is that fatness and constipation are linked to diarrhea.<sup>65</sup>

Ibn al-Quff refrains from giving his opinion, but summarizes the different sides, stating that the phrase “to the corpulent” (*li-l-‘abl*) is sometimes understood as a specification of him to whom spasms occur, and other times of him to whom diarrhea occurs. While he does not mention Galen or Ibn Abī Ṣādiq by name, he correctly reproduces previous opinions on the topic. In this way, he transmits these insights to the next generation, while reaffirming his reputation as a well-versed authority on past scholarship, although it would be unfair to allege that the latter was his guiding motivation.

Al-Baghdādī approaches the problem from a grammatical point of view. He states that the ambiguity has arisen on account of the long-ago textual transmission of the aphorism, which in Ḥunayn’s translation reads:

فإذا قرب الصَّبِي من أن تنبت له الأسنان عرض له مضيض في اللثة وحميات وتشنج واختلاف، لا سيمًا إذا نبتت له الأنياب وللعليل من الصَّبِيان ولمن كان منهم بطنه معتقلا.

When a boy approaches dentition, he experiences pain in the gums, fever, convulsion, and diarrhea, and [this happens] especially when his canine teeth come through, and [especially] to obese boys and boys with hard abdomens.

According to al-Baghdādī, it is not as clear to which part of the aphorism the last clause refers, especially *li-l-‘abl* (“to the obese”). He explains the possible readings of this phrase thus:

وجالينوس يرى أن قوله وللعليل نسق على التشنج، أي ويعرض التشنج للعليل من الصَّبِيان. وأما صحته من جهة العربية فمن وجهين أحدهما أن يكون مسوقا على له، نسق الخاص على العام على جهة الاختصاص، كأنه قال

62. Ed. Kühn, 17b: 631: πλῆθωρικὰ γὰρ ἐστὶ τὰ τοιαῦτα καὶ περιττωματικὰ καὶ διὰ τοῦτο σπασμοῖς εὐάλωτα, μάλιστα δὲ σπασμοὶ τὰς τοιαύτας καταλαμβάνουσι φύσεις.

63. Translation adapted from Pormann, “Greek and Arabic Fragments,” 59.

64. Ibn Sīnā, *Qānūn*, 78. Al-Baladī (*Tadbīr al-ḥabāla*, 288) argues the same: “Spasms happen especially to boys who are obese and constipated.”

65. Ibn Abī Ṣādiq, *Sharḥ Fuṣūl Abuqrāt*, 22.

يعرض للصبي كيت وكيت وللعليل منهم، أي والعليل أخص بذلك وأولي بأن يعرض له لرطوبة مزاجه وكثرة امتلاء أعضائه. والوجه الآخر أن يكون منسوقا على قوله ولا سيما، أي ولا سيما إذا نبتت له الأنياب، ولا سيما للعليل من الصبيان. وأنا أرى أن قلق هذا اللفظ من جهة الناقل.

Galen believes that [Hippocrates's] phrase “to obese boys” refers to spasms, as if to mean “spasms occur to obese boys.” This can be correct in Arabic in two ways: One of them is that it refers to “him” [the boy], as a particular [explanation] referring back to a general [antecedent] to specify [it], as if [Hippocrates] said “such and such happens to boys, i.e., to the obese ones among them,” meaning that obese boys especially experience [spasms], because their constitution is humid and their limbs are full. The other option is to understand [the phrase] as referring to the word “especially,” as if to say “especially if their canine teeth are growing, especially in obese boys.” I think that the trouble with this phrase has to do with transmission.<sup>66</sup>

Finally, al-Kīlānī believes that the phrase “to obese boys” refers to all the symptoms mentioned in the aphorisms, an idea also put forward by Theophilus Protispatharius.<sup>67</sup>

The ambiguity of *Aphorisms* iii.25 resulted in a debate with widely opposing views, which were partly the result of a difference of exegetical methods. Ibn Abī Ṣādiq's innovative interpretation was based on experience, which led him to link corpulence with diarrhea. Al-Baghdādī's approach, on the contrary, is philological and theoretical, and more concerned with defending Galen's explanation from a grammatical perspective, which he does with great eye for detail, than with medical experience.

### 3. Expansion

In some instances, the authors accept Galen's explanation in principle, but consider it in need of further explanation. This is the case, for example, with Galen's explanation of terrors (φόβοι). Galen locates their cause in the weakness of the child's stomach, which causes the milk to go bad, especially with greedy children (καὶ μάλιστα ἐξ αὐτῶν τοῖς ἀδηφάγοις). He argues that he has seen adults suffer fearful nightmares (φαντασίας φοβερὰς, lit. fantasy) when bad residues burn into the opening of the stomach, giving thus a physical reason for a psychological symptom.<sup>68</sup> Ibn al-Jazzār borrows Galen's explanation in less detail, relating fears (*tafazzu'*) to a weak or sensitive stomach upset by bad food,<sup>69</sup> and it returns also in al-Nīlī's and Ibn Abī Ṣādiq's commentaries. Al-Baladī briefly notes that Paul of Aegina mentions that Hippocrates includes fears among children's symptoms, but he only gives a remedy (namely, to apply the interior of reeds, *jawf al-qaṣab*, to a child's head and feet) and does not discuss its possible causes.<sup>70</sup> We find a similar focus on the stomach in Ibn Sīnā, who argues that terrors are related to an overfull stomach,<sup>71</sup> which explanation returns in al-Baghdādī's commentary.

Ibn al-Quff expands on Galen's cause by explaining it to be the result of thick vapors (*al-bukhārāt al-ghalīza*) that rise from spoiled milk to the brain and cause children to have bad dreams (*aḥlām ḥā'ila*). The postclassical commentators al-Kīshī, al-Kīlānī, and al-Manāwī each adopt Ibn al-Quff's addition to Galen's explanation. Ibn al-Quff's contemporary Ibn al-Nafīs, in contrast, only allows a vague connection between weakness and

66. Al-Baghdādī, *Sharḥ Fuṣūl Abuqrāt*, 38–39.

67. Theophilus Protispatharius, *Commentary on the Hippocratic Aphorisms*, ed. F. R. Dietz, *Scholia in Hippocratem et Galenum*, vol. 2 (Amsterdam: Hakkert, 1966), 374. The date of this work is uncertain.

68. Ed. Kühn, 17b: 628.

69. Ibn al-Jazzār, *Siyāsāt al-ṣibyān*, 100.

70. Al-Baladī, *Tadbīr al-habāla*, 236–37; see also Pormann, “Greek and Arabic Fragments,” 36.

71. Ibn Sīnā, *Qānūn*, 79.

nightmare, arguing that because children are weak, they get agitated from the slightest fantastic notion (*yanfa'ilūna min adnā takhayyul*).

Another example of elaboration of Galenic explanations is in the comments on discharge from the ears (ὄτων ὑγρότητες). Galen believed that children had a humid constitution and a head full of fluids. Among other things, this caused their ears to be wet, one of the afflictions of newborns that Hippocrates lists in *Aphorisms* iii.24. While Galen's connection between a humid brain and leaking ears is accepted in medieval Islamic medicine, it is not considered fully satisfactory. Al-Sinjārī elucidates that when children experience the cold air at birth after the warmth of their mothers' wombs, the fluids (*faḍalāt*) are drawn from their brains and flow to their ears and innermost parts of their mouths (*lahawāt*), causing them terrible pain (*alam fādih*). Ibn al-Quff gives a simpler explanation for why in children moistness especially comes out through the ears, and not, like in adults, through the nose, arguing that this happens because children "sleep on their back" (*nawmuhum 'alā zuhūrihim*). This explanation is repeated by the three commentators after him, Ibn al-Nafīs, al-Kīsī, and al-Manāwī. Unlike Galen, Rufus of Ephesus links moist ears to the consumption of a large quantity of milk,<sup>72</sup> which does not return in the Arabic tradition. Ibn al-Jazzār and pseudo-Rāzī establish the same connection between the discharge and the humidity of the brain as Galen and the later Arabic commentators.<sup>73</sup>

#### INNOVATION

So far, we have treated instances where authors adopted Galen's explanation, but there are also cases where Galen did not give an explanation or his interpretation was rejected; the commentators then either fill in the gap with Galenic material taken from elsewhere, provide new explanations that follow Galenic doctrine, or, more rarely, break with Galenic theory all together.

With respect to convulsions (σπασμοί), one of the symptoms following dentition listed in *Aphorisms* iii.25, alternative explanations are given within Galen's theoretical framework. Galen connects convulsions in children to the pain, sleeplessness, and inflammation caused by teething, as well as to poor digestion of food (τὴν τροφὴν ἀπεπτομένην) and decreased strength of the nerve-like organs (μηδέπω τὰ κατὰ τῶν νεύρων φύσιν ἔστιν ἰσχυρά).<sup>74</sup> This explanation is adopted by Theophilus Protospatharius.<sup>75</sup> Of the Arabic commentators who follow Galen's explanation, al-Baghdādī, however, also argues that convulsions are due to the humidity of children's brains and their weak organs, which are Galenic theories that Galen only uses to explain moisture of the ears and thrush.

Although Hippocrates distinguishes between different types of convulsions in *Aphorisms* vi.39, namely, those of repletion (πληρώσιος) and depletion (κενώσιος),<sup>76</sup> he does not in *Aphorisms* iii.25, nor does Galen attempt it. Yet there is an interest in the different types of convulsions that befall young children in some of the Arabic commentaries—indeed, they are regularly concerned with definitions of medical terminology in the Hippocratic source text not addressed by Galen.<sup>77</sup> Ibn Abī Šādiq, in particular, repeatedly starts off a

72. Pormann, "Greek and Arabic Fragments," 59; Bos and McVaugh, *On the Treatment*, 77.

73. Ibn al-Jazzār, *Siyāsat al-šibyān*, 102; Bos and McVaugh, *On the Treatment*, 23. Pseudo-Rāzī also speaks of purulent matter (*venenum*), which is not found in the *Aphorisms*.

74. Ed. Kühn, 17b: 630.

75. Ed. Dietz, 374: indigestion (ἀπεψίαν); nerve sensitivity (εὐπάθειαν τοῦ νευρώδους γένους).

76. Magdeleine, "Histoire du texte," 2: 455.

77. Robert Wisnovsky ("Avicennism," 355) describes a similar interest in definitions of technical terms in relation to the early philosophical commentaries on Avicenna's *Ishārāt*: "Commentators sometimes used synonyms

diachronic concern with the exact meaning of Hippocratic terms in Ḥunayn's translation, especially when these have been insufficiently defined or clarified by Galen.<sup>78</sup> In this particular case, Ibn Abī Šādiq defines *tashannuj*, Ḥunayn's translation of *σπασμοί*, as "twisting of the nerves (*iltiwāʾ al-ʿaṣab*)."<sup>79</sup> This definition is repeated almost verbatim by al-Sīwāsī and is borrowed by al-Kīshī. However, al-Sinjārī speaks instead of convulsions of repletion (*tashannuj imtilāʾī*), repeating a phrase mentioned in *Aphorisms* vi.39. Borrowing the Galenic (or Hippocratic) theory of vital heat, al-Sinjārī argues that convulsions of repletion occur because of agitated matter (*hayajān al-mawādd*), presumably of the gum, and because vital heat is immersed as a result of the large amount of fluids in children's weak bodies. In his comment on *Aphorisms* vi.39, however, al-Sinjārī does not reference agitated matter, while Galen explains that aphorism's convulsions of repletion to be related to too many fluids filling up the nerves.

Ibn al-Quff repeats both Ibn Abī Šādiq's *iltiwāʾ al-ʿaṣab* and al-Sinjārī's *tashannuj imtilāʾī*. He associates the latter with weak muscles and nerves and abundant matter (*tawaffur mawāddihim*), and then introduces a new theory: dry spasms (*tashannuj yābis*). Ibn al-Quff argues that these happen because the fever dries up and dissolves children's humidity. In *De tremore*, Galen explains that spasms happen when dryness is excessive in a disease and dries up the nerves;<sup>79</sup> Ibn al-Quff thus continues to operate within a Galenic theoretical framework, establishing a connection between spasms and dryness.

Another example of commentators taking Galenic material from other places<sup>80</sup> is in the explanation of sleeplessness (*ἀγρυπνία*, Ḥunayn: *sahar*), mentioned in *Aphorisms* iii.24. Galen explains only why Hippocrates lists it among childhood illnesses, not why it occurs in children.<sup>81</sup> Galen's explanation—it is considered a disease because children sleep most of the time—is repeated by al-Nīlī, Ibn Abī Šādiq, and al-Baghdādī. The reason for its cause is first found in Ibn al-Jazzār, who states that it is due to milk being liquid (*ruṭūbat al-laban*).<sup>82</sup> In pseudo-Rāzī's text, there is mention of "milk going bad" (*corruptio lactis*),<sup>83</sup> which is likely from Galen, who, as discussed above, blames food going bad in the stomachs of greedy children to explain nightmares. Pseudo-Rāzī's use of spoiled milk to explain sleeplessness more generally is repeated first in al-Baghdādī in the late thirteenth century, and then also by Ibn al-Quff, Ibn al-Nafīs, al-Sīwāsī, and al-Manāwī,<sup>84</sup> who, as we shall see presently, also add their own non-Galenic explanations.

When the commentators break with a Galenic framework, either because he has not given an explanation or because they have rejected it, they often draw from Ibn al-Jazzār, as they did with respect to sleeplessness, and late-antique medical material that is not found in Galen. However, Ibn Abī Šādiq embarks on yet another of his philological efforts and clarifies that

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to gloss key pieces of conceptual vocabulary in the *matn*, and other times provided complete definitions of those terms." See also Shihadeh, "Al-Rāzī's Commentary."

78. Karimullah ("Transformation") points out that Ibn Abī Šādiq also introduced other exegetical strategies, which he calls ampliative—such as direct polemic and the application of Galenic medical theory derived from other sources.

79. Ed. Kühn, 7: 67: ξηραίνουσιν τὸ νευρῶδες γένος.

80. This is also identified in the philosophical exegetical commentaries; see Shihadeh, "Al-Rāzī's Commentary," esp. 310.

81. In omitting an interpretation, Galen is similar to Soranus, Aetius, Oribasius, and Paul of Aegina, none of whom seem to discuss sleeplessness.

82. Ibn al-Jazzār, *Siyāsat al-ṣibyān*, 100.

83. G. Bos and McVaugh, *On the Treatment*, 22.

84. This could be an argument for a later date of an Arabic original of the pseudo-Rāzī text.

by ἀγρυπνίαι, Hippocrates meant “frequent awakening” (*kathrat al-intibāh*).<sup>85</sup> He then gives two reasons for sleeplessness, neither of which seems to derive from Galen or any of the other ancient physicians. He argues that babies are often awake because their delicate bodies have little tolerance for swaddling (*qillat ihtimālihā l-shadda bi-l-qimāṭ*), and in addition suffered pain from the cutting of their umbilical cord (*wa-li-ta’adhdhihim bi-qaṭ’ al-surra*). Ibn Abī Ṣādiq’s innovative, pragmatic reasoning is adopted widely by later medieval commentators; the idea of pain induced by swaddling returns in al-Sinjārī, Ibn al-Quff, Ibn al-Nafīs, al-Ṭabīb, al-Kilānī, and al-Siwāsī.

Ibn al-Quff also introduces new ideas about sleeplessness, but in his eclectic exegetical style he does not fully part with Galen and earlier Islamic commentators. According to him, sleeplessness is quickly awakening from sleep, not excessive wakefulness, occurring due to abundant fluids. A child easily wakes for four reasons: spoiled milk in the stomach, which causes vapors to rise to the brain that startle and hurt the child; pain from the cutting of the umbilical cord; tight clothing hurting the skin and the irritation of salt;<sup>86</sup> and a too tight diaper. Thus, he explains children waking quickly using the Galenic theory of humidity in children. He brings in Galen’s theory regarding milk going bad, explaining why this wakes children up. For the comprehensive Ibn al-Quff, it is important to reproduce both Galenic and earlier Arabic material before adding his own ideas. In line with Ibn Abī Ṣādiq, he argues that young infants cannot stand the tightness of their clothes, and then adds that the salt on their skin gives them a burning sensation.

Another break with Galen is found in Ibn Abī Ṣādiq’s explanation of throat infection from *Aphorisms* iii.26, with respect to both term and cause. Ibn Abī Ṣādiq does not agree with Hippocrates and Galen that inflammation of the tonsils (παρίσθμια) is specific to children in the third stage of childhood,<sup>87</sup> but argues that *dhibḥa*, throat pain, is.<sup>88</sup> This introduction of *dhibḥa* is not completely original: Hippocrates mentioned it in *Aphorisms* iii.16 as one of the diseases that occur during rainy periods,<sup>89</sup> and Galen explained in his comment what causes it.<sup>90</sup> But Ibn Abī Ṣādiq connects it to children of this age, possibly drawing on al-Baladī, who also mentions it as a children’s disease.<sup>91</sup> Ibn Abī Ṣādiq writes that *dhibḥa* occurs especially in children of this age because boys talk a lot during this stage of their life as they are required to read aloud for long periods (*dawām qirā’atihim mā yata’allamūna*). Frequent speaking heated the throat and its surrounding organs, causing it to become inflamed—this is a completely new idea. While al-Sinjārī and Ibn al-Quff both follow Ibn Abī Ṣādiq in his classification of *dhibḥa* as a children’s disease, they do not adopt his explanation. We only find a comparable explanation in al-Siwāsī: because children read a lot, their breathing and

85. Ibn Abī Ṣādiq, *Sharḥ Fuṣūl Abuqrāt*, 21. Later commentators disagree: Ibn al-Quff (*Sharḥ Fuṣūl Abuqrāt*, 146) rejects Ibn Abī Ṣādiq’s definition, defining sleeplessness instead as “the quickness of awakening” (*sur’at al-intibāh*). Both Ibn al-Nafīs (*Sharḥ Fuṣūl Abuqrāt*, 31) and al-Ṭabīb (*Wasā’il al-wuṣūl*, 10) prefer Ibn Abī Ṣādiq’s meaning but use “an excess of wakefulness” (*ifrāt al-yaqza*).

86. The practice of salting children was common in the region, and is described by Ibn Sīnā (*Qānūn*, 75), who advises the skin of a newborn child be hardened by slightly salted water: *wa-yubādir ilā tamlīḥ badanihi bi-mā’ al-milḥ al-raqīq li-yaṣluba bashratuhū*.

87. Magdelaine, “Histoire du texte,” 2: 407.

88. Freytag (*Lexicon*, 2: 80) translates *dhibḥa* with “dolor in gutture” and “angina,” i.e., severe throat pain or even strep throat.

89. Here Ḥunayn uses *dhibḥa* to translate κováγγαι (a severe sore throat); for the Greek text, see Magdelaine, “Histoire du texte,” 2: 404.

90. Galen explains κováγγαι as resulting from either remnants flowing to the throat or a cold descending from the brain and settling in the throat.

91. Al-Baladī, *Tadbīr al-ḥabālā*, 282.

voice organs (*ālāt al-tanaffus wa-l-ṣawt*) attract matter (*mādda*) so that the throat becomes hot (*ḥattā taskhun al-ḥanjara*).<sup>92</sup>

Another instance of Galen's exegetical silence occurs in the matter of coughing (βῆχες), the third disease of the infant illnesses listed in *Aphorisms* iii.24. In Galen's comment on *Aphorisms* iii.5, he explains coughing in adults to be caused by a change in the humor of the lungs and the coarseness of the throat,<sup>93</sup> and more specifically, in *Aphorisms* iii.13 and iv.54, as one of the symptoms happening when the head fills up (with fluid). The author of the pseudo-Galenic treatise *De remediis parabilibus* recommends such diverse items as a smooth dog (κυνά ψιλόν), garlic, honey, a squill, or an egg to be eaten for its treatment.<sup>94</sup> In comparison, Ibn Rabban advises coughing to be treated by "administering cotton seed essence" (*saqā min lubāb ḥabb al-quṭn*),<sup>95</sup> while Ibn Sīnā recommends to cleanse the throat with warm water and administer honey.<sup>96</sup> Again, such therapeutic concerns do not return in the commentaries.

We find the first discussions of coughing in the Arabic commentaries in the twelfth century, when al-Baghdādī writes that "coughing [happens] when the throat becomes affected by thrush, and by spoiled milk in the stomach, and other things."<sup>97</sup> This explanation seems to stand slightly on its own; it is only copied by Ibn al-Quff and does not seem to have its roots in Soranus, Ibn al-Jazzār, or al-Baladī. Al-Baladī cites coughing as one of the childhood illnesses mentioned by Paul of Aegina, but he does not expound further.<sup>98</sup> Soranus argues that coughs happen because of accumulation of phlegm in the lungs.<sup>99</sup> This emphasis on phlegm is repeated in Ibn al-Quff, Ibn al-Nafis, al-Kīshī, and al-Manāwī.

Ibn al-Jazzār offers a different explanation: coughing happens because the lungs of infants, previously used to the warmth of their mothers' wombs, become cold as their tongues are unable to close their windpipes with the epiglottis.<sup>100</sup> The same theory is in pseudo-Rāzī, and is adapted in various ways by Ibn al-Quff, Ibn al-Nafis, al-Ṭabīb, al-Kīlānī, and al-Sīwāsī. For instance, Ibn al-Nafis explains that the air damages their lungs (*ālāt anfusihim*),<sup>101</sup> which is borrowed by al-Kīshī. Ibn al-Quff, a contemporary of Ibn al-Nafis, argues instead that the brain is first affected by the cold: "the strength of the cold penetrates into the brain (*tunfidh quwwat al-bard ilā dākhil al-dīmāgh*) and weakens its innate heat and natural strength, so that the surpluses increase and trickle toward the direction of the lungs" (*fa-takthur al-faḍalāt fīhi wa-yaqtur ilā jihat al-rīʿa*), thereby staying closer to Galen's theory of the humid brain.<sup>102</sup>

Finally, it is worth mentioning al-Sīwāsī's explanation of night terrors (*tafazzuʿ*). Earlier we saw that Galen, and with him the majority of the Islamic and late-antique traditions, blames these terrors on the effect of bad milk and vapors. The fourteenth-century al-Sīwāsī breaks with Galen when he adopts a purely psychological perspective, writing that young children startle "due to their lack of contact and closeness to people, and sounds and move-

92. Al-Sīwāsī, *Umdat al-fuḥūl*, 8.

93. Ed. Kühn, 17b: 571.

94. Ed. Kühn, 14: 440–41.

95. Ibn Rabban al-Ṭabarī, *Firdaws al-ḥikma*, 97.

96. Ibn Sīnā, *Qānūn*, 78.

97. Al-Baghdādī, *Sharḥ Fuṣūl Abuqrāt*, 37.

98. Al-Baladī, *Tadbīr al-ḥabālā*, 227. See also Pormann, "Greek and Arabic Fragments," 21.

99. Bos and McVaugh, *On the Treatment*, 91.

100. Bos and McVaugh, *On the Treatment*, 92. Ibn al-Jazzār, *Siyāsat al-ṣibyān*, 111. See also Giladi, *Muslim Midwives*, 85.

101. Ibn al-Nafis, *Sharḥ Fuṣūl Abuqrāt*, 30.

102. Ibn al-Quff, *Sharḥ Fuṣūl Abuqrāt*, 146.

ments” (*wa-l-taffazu‘ li-‘adam ‘ahdihim bi-l-nās wa-l-aswāt wa-l-ḥarakāt*).<sup>103</sup> Although, like al-Ṭabīb,<sup>104</sup> al-Sīwāsī relies more on Ibn Abī Ṣādiq and other Muslim sources, such as Ibn al-Jazzār, we must be careful not to see in him a break with Galenism. Al-Sīwāsī still often adopts Galenic explanations and theories, such as children’s humidity, to clarify childhood illnesses. Nevertheless, as much as the others before him, his commentary shows that one does not need to break with Galen to be innovative.

#### CONCLUSION

The pediatric material in the commentaries brings to light a sharp distinction between the commentaries and other pediatric formats, such as the treatise and the encyclopedia. Where others exhibit a focus on practical medicine, sometimes in addition to an interest in theoretical medicine, the commentaries betray a strict theoretical interest. In their theoretical scope they resemble Galen’s commentary.

The commentary material also differs from other nonexegetical Islamic works, such as that by al-Baladī, on account of its limited use of late-antique sources; there is only occasional reliance on Rufus of Efesus or Soranus, who are not mentioned by name. The earlier commentaries specifically rely on Galen, elevating his commentary beyond a primary means of understanding the Hippocratic text to the level of source text itself, to be critically expanded and explained in earlier commentaries. Over the centuries, Galen’s text loses this central position when the focus of the later commentators, such as al-Sīwāsī, seems to return to the Hippocratic text. In addition, we also find the commentators incorporating the theoretical ideas from nonexegetical authors such as Ibn al-Jazzār and al-Baladī, albeit never explicitly, while they consistently ignore the cures to diseases these authors offer.

Theoretically, the Islamic medical view of the child remained largely Galenic. Despite Galen’s commentary becoming less germane, as Kamran Karimullah has shown, its theoretical focus and the presuppositions of his medical theories in general remain relevant. Here we find a substantiation of Abdelhamid Sabra’s naturalization thesis: Galenic views of the child are assimilated into Islamic pediatrics, even though his text was no longer directly read by later Islamic scholars. Galen’s theories become interwoven in the Arabic texts; they are used to challenge previous explanations and offer new solutions, while also occasionally challenged themselves.

Galen remained conceptually pertinent; the theoretical character of the pediatric section of his commentary was left uncontested. Moreover, many of his explanations continued to be reproduced even in the very latest commentaries. From Ibn Abī Ṣādiq’s emphasis on typology and al-Baghdādī’s careful philology to the eclectic combination of Arabic and Galenic sources in Ibn al-Quff, and later the extensive innovations in al-Sīwāsī, the Arabic pediatric commentaries can be described as Galenic in genre and theory, but Islamic in exegetical innovation. This combination of Galenic doctrine with Islamic progress in the form of clarification, expansion, and theoretical innovation makes the pediatric material in the commentaries the ultimate example of medieval Islamic *theoria*.

103. Al-Sīwāsī, *‘Umdat al-fuḥūl*, 8.

104. On this point, see Karimullah, “Transformation,” 341–47.