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"It Will Help Him Wonderfully": Placebo and Meaning Responses in Early Medieval English Medicine

By Rebecca Brackmann

Abstract:
Many early English medical remedies have been dismissed, even by sympathetic scholars, as "mere placebo," with the implication that therapeutic benefits to the patient, if any, are thereby insignificant. My article challenges such dismissals of placebo responses in Old English medicine. I draw on current research demonstrating that in certain conditions, a placebo effect, or "meaning response" (to use Daniel Moerman's term), can have striking success in bringing about healing. I describe contemporary clinical practices shown to enhance patient responses to pharmaceutical treatments both inert and active, and demonstrate that these strategies are also visible in early English medical practice. Understanding the cultural components of belief that provoke placebo responses also allows a discussion of medieval medicine that does not force us to distinguish anachronistically categories of "magical" and "medical." Ultimately, an understanding of the meaning response in medical treatment moves us beyond the simplistic binary of medical recipes that "work" (by modern biomedical standards) and those that do not, offering us a view of the interplay of chemical and cultural healing practices in embodied experience.

In 2015 the news broke—laboratory studies had confirmed that an Old English remedy for a stye was effective against the MRSA bacillus then endemic in hospitals.[1] This discovery by Christina Lee and others at the University of Nottingham was one of the most exciting finds in ongoing explorations of the chemical, biomedical efficacy of several herbal remedies found in texts from early medieval England. While nineteenth-century editors and some twentieth-century historians had decried early English medicine as superstitious, incoherent nonsense, the last few decades have improved our understanding of the healing effects of certain phytochemicals—active compounds found in plants—used in medieval remedies.[2] Malcolm Cameron's *Anglo-Saxon*

[1] Freya Harrison et al., "A 1,000-Year-Old Antimicrobial Remedy with Antistaphylococcal Activity," *Microbiology* 6/4 (2015): 1–7; Blessing O. Anonye et al., "The Safety Profile of Bald's Eyesalve for the Treatment of Bacterial Infections," *Scientific Reports* 10/1753 (2020); and Jessica Furner-Pardoe et al., "Anti-biofilm Efficacy of a Medieval Treatment for Bacterial Infection Requires the Combination of Multiple Ingredients," *Scientific Reports* 10/12687 (2020). For an example of popular reporting on the study, see Clare Wilson, "Anglo-Saxon Remedy Kills Hospital Superbug MRSA," *New Scientist*, Daily News, 30 March 2015, https://www.newscientist.com/article/dn27263-anglo-saxon-remedy-kills-hospital-superbug-mrsa/ (last accessed 1 June 2022).

[2] Oswald Cockayne edited and translated *Bald's Leechbook* and *Leechbook III*; his editions are still standard. Oswald Cockayne, ed., *Leechdoms, Wortcunning, and Starcraft of Early England: Being a*

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Medicine led the way, as Cameron (a botanist) speculated about remedies in Old English texts which might have had chemical effects, including the stye remedy ultimately found by the Nottingham group to kill MRSA.[3] Another recent voice arguing this view has been Anne Van Arsdall, both a certified herbalist and medieval historian, who observes that contemporary herbalist traditions such as *curanderismo* offer parallels to medieval medicine in their instructional techniques and in their treatises on their craft. As the conversation has shifted, however, to exploring pharmacologically active remedies in Old English medical lore, it has only glanced at complementary avenues by which early medieval medical treatment could have prompted healing responses in the ill. Chemically active remedies by themselves do not tell us the whole story about the healing properties of early medicine or its role in embodied experience of sickness and health. Many of the extant remedies do not contain chemically efficacious elements, and some have ingredients (such as animal feces) that modern patients and doctors would find bizarre, if not downright disgusting. To understand early medicine, we must look past the notion that laboratory-tested allopathic therapies alone constitute "real" treatment, and consider how both allopathic and other treatments interact with cultural ideas about health and healing, as many medical historians have urged.[4] This article offers one way of doing so by focusing on the psychological mechanisms by which culturally meaningful treatments can bring about positive changes in an illness state, arguing that mitigation of illness would often have resulted from the practices of early English physicians even when their remedies were not chemically active against the pathology in question.

The human body can activate its own healing functions when it experiences a meaningful healing interaction with another person or agent—an ability we call the "placebo effect"—and this phenomenon is both powerful and extensively documented. This capability may have offered humans an evolutionary advantage, and it has been observed species-wide.[5] It can only operate against pathologies for which the body has some defense or mitigating mechanism, affecting (for instance) the immune system, pain perception, gastric secretions, muscle spasm involved in coughing,

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Collection of Documents, for the Most Part, Never Before Printed, Illustrating the History of Science in This Country before the Norman Conquest, vol. 2 (London, 1865). An example of dismissive twentieth-century criticism is Charles Singer, *From Magic to Science: Essays on the Scientific Twilight*, 2nd ed. (New York, 1958). Anne Van Arsdall gives a short historiography of early medieval English medicine in the first section of "Reading Medieval Medical Texts with an Open Mind," in *Textual Healing: Essays on Medieval and Early Modern Medicine*, ed. Elizabeth Lane Furdell, Studies in Medieval and Reformation Traditions 110 (Leiden, 2005), 9–29. She discusses Cockayne in detail in *Medieval Herbal Remedies: The "Old English Herbarium" and Anglo-Saxon Medicine* (New York, 2002), 1–34.

[3] M. L. Cameron, *Anglo-Saxon Medicine*, Cambridge Studies in Anglo-Saxon England 7 (Cambridge, UK, 1993).

[4] For instance, Peregrine Horden, "Religion as Medicine: Music in Medieval Hospitals," in *Religion and Medicine in the Middle Ages*, ed. Peter Biller and Joseph Ziegler, York Studies in Medieval Theology 3 (Woodbridge, UK, 2001), 135–53; Christina Lee, "Body and Soul: Disease and Impairment," in *The Material Culture of Daily Living in the Anglo-Saxon World*, ed. Maren Clegg Hyer and Gale R. Owen-Crocker (Exeter, 2011), 293–309; and Faye Getz, *Medicine in the English Middle Ages* (Princeton, 1998).

[5] Andrés Bendesky and Adam M. Sonabend, "On Schleppfuss' Path: The Placebo Response in Human Evolution," *Medical Hypotheses* 64 (2005): 414–16.

and some endocrine responses. Cameron mentions the placebo effect, but only in passing, as does John Riddle.[6] Peregrine Horden, a leading voice calling for a culturally nuanced understanding of medieval medicine and disease, writes: "Let us concede that early medieval medicine did not work. It is, to borrow David Wootton's title, 'bad medicine,' at best a placebo . . . Instead of looking for biomedical efficacy we should perhaps think, as anthropologists do, in terms of therapeutic success: a matter of overall patient satisfaction with the therapeutic encounter rather than altered pathology."[7] However, understanding the placebo effect means that we need not necessarily decide between "patient satisfaction with the encounter" and "altered pathology"—satisfaction can often *produce* altered pathology. Van Arsdall comments that "it seems obvious that when dealing with human beings, who have a mental facility that affects the physical, a chemical analysis alone will not give a true picture of why a remedy might work in some cases and not in others," adding "even modern medicine does not understand the placebo effect."[8] However, modern medicine has made recent progress on the subject, and I take up Van Arsdall's implied challenge, considering how the placebo effect works and applying that understanding to early medieval English medical practice. Exploring the placebo effect, in conjunction with what we now know about chemical efficacy of some remedies, points to a new direction for understanding medieval medicine, for many practices and methods described in English medical texts align closely with behaviors that heighten placebo responses in patients and are still being recommended to modern doctors. I argue that many—perhaps most—early medieval patients would have experienced real somatic improvement from healing encounters, even when the remedy administered had no phytochemically active components. Since the phenomenon of human somatic responses to inactive agents is a transcultural and transtemporal one, this article also gives a model for understanding Carolingian, Byzantine, and indeed most of premodern medicine and its role in contemporary embodied culture.

Early medieval medicine in Europe consisted mostly of practical works focused on therapeutic interventions or prognostics. As Faith Wallis notes, "early medieval people seem to have been extremely interested in healing, but only minimally aware of the possibility of a system which explains disease and relates this explanation to the coherent picture of the human body."[9] The major theoretical works of Hippocrates and Galen, which sought to explain how the body worked and how health could be maintained, did not begin to circulate in the western part of the former Roman Empire until the ninth throughout twelfth centuries, after they were translated

[6] John M. Riddle, "Research Procedures in Evaluating Medieval Medicine," in *The Medieval Hospital and Medical Practice*, ed. Barbara S. Bowers, AVISTA Studies in the History of Medieval Technology, Science, and Art 3 (Burlington, VT, 2007), 3–17.

[7] Peregrine Horden, "What's Wrong with Early Medieval Medicine?" *Social History of Medicine* 24 (2011): 5–25. In a later reprint of the essay, Horden observes in a "Postscript" that he "was perhaps too dismissive" of the chemical effectiveness of Old English remedies, but the implied contrast between satisfaction and physical improvement remains. Peregrine Horden, *Cultures of Healing: Medieval and After* (London, 2019), 117.

[8] Anne Van Arsdall, "Challenging the 'Eye of Newt' Image of Medieval Medicine," in *The Medieval Hospital*, ed. Bowers, 195–205, at 201 and 198.

[9] Faith Wallis, "The Experience of the Book: Manuscripts, Texts, and the Role of Epistemology in Early Medieval Medicine," in *Knowledge and the Scholarly Medical Traditions*, ed. Don Bates (Cambridge, UK, 1995), 101–26, at 111–12.

from Arabic.[10] Medical writing in early medieval England consisted primarily of remedies and had some relationship with early medieval continental medicine, as many classical and late antique texts containing herbal recipes seem to have been available. However, while the "rational" (that is, based on theory and logic rather than on observation and experience) Hippocratic and Galenic medical texts began to make their way into Europe in the ninth century, early English writers do not seem to have paid much attention to them until the eleventh. Debby Banham finds no hint of a shift in England toward Galenic medicine and its philosophical tradition until just before the Norman Conquest. Banham points to the arrival from France of Abbot Baldwin of Bury St. Edmunds as a watershed moment in the propagation of these medical beliefs and practices, which brought "England into the European medical mainstream for the first time."[11] Casting early English medical texts even further outside the mainstream is that they are nearly all vernacular. No insular Latin copies survive of many medical texts which we know were circulating in England, such as the *Physica* and *Medica* attributed to Pliny and the *Herbal of Pseudo-Apuleius*. They appear only in Old English compilations, where the translated classical and late antique texts were combined with remedies that may have been native to the Germanic peoples of southern Britain.[12] The paucity of surviving Latin medical texts indicates that many English physicians, the probable audience for books setting out remedies in Old English, could read only their own language.[13] This, alongside the lack of philosophical, theoretical medical texts, has at times led to the characterization of pre-Conquest English medicine as both "non-rational" and "unlearned"—that is, based on anecdote and experience rather than philosophical concepts of the human body and its working gleaned from the textual tradition. Even though "non-rational" and "unlearned" are not necessarily pejorative terms in medical history, the Old English medical texts so described have often been regarded unfavorably by modern historians in contrast to the complex theoretical and philosophical traditions spreading through most of the rest of Europe.[14] No doubt contributing to this view is the attribution of some illnesses to "elves," rather than humors, in English medical writing—possibly reflecting native illness beliefs.[15] The early medieval English, in this view, were clinging to superstitions instead of embracing new scholarship, keeping them out of touch with prevailing attitudes.

[10] For an overview, see Nancy G. Siraisi, *Medieval and Early Renaissance Medicine: An Introduction to Knowledge and Practice* (Chicago, 1990), especially chapter 1; W. F. Bynum and Roy Porter, eds., *Companion Encyclopedia of the History of Medicine*, 2 vols. (New York, 1993), especially Vivian Nutton's chapter on "Humoralism," 1:281–91; and the essays in Manfred Horstmanshoff, Helen King, and Claus Zittel, eds., *Blood, Sweat, and Tears: The Changing Concepts of Physiology from Antiquity into Early Modern Europe*, Intersections 25 (Leiden, 2012).

[11] Debby Banham, "Medicine at Bury in the Time of Abbot Baldwin," in *Bury St Edmunds and the Norman Conquest*, ed. Tom Licence (Woodbridge, UK, 2014), 226–46.

[12] For details of scholarship on the sources of Old English medical texts, see note 21 below.

[13] Cameron discusses the few brief Latin texts remaining in manuscript from early medieval England in *Anglo-Saxon Medicine*, 48–58.

[14] See note 2 above. James T. McIlwain, "Theory and Practice in the Anglo-Saxon Leechbooks: The Case of Paralysis," *Viator* 39 (2008): 65–73, examines treatments for paralysis in the Old English medical texts, and observes that their authors did not understand the importance of the central nervous system, in contrast to the Galenic theoretical texts, which emphasize it.

[15] See note 66 below.

However, several historians have cautioned against a strict contrast between later, rational Galenic, medicine and earlier, empirical therapeutic, medicine (usually privileging the former), even in areas where Galenic medical theory was prominent. As Horden observes, "very little of early medieval medicine was judged so deficient that it was superseded by the philosophically-orientated material. Early medieval medicine is not only ancient medicine; it is also (later) medieval medicine."[16] The empirical and the theoretical works may have simply had different roles in the life of a physician. Indeed, some of the learned philosophical medical treatises may not have been intended for those who did most healing work in their culture.[17] A number of Middle and Early Modern English texts survive containing herbal remedies; the tradition continued for centuries. Nor were plant-based therapies entirely separate from humoral theory, as some botanicals were associated with certain humors. Practices based on observation and patient interactions endured alongside the learned Latin tradition in later periods, both for professional healers and for members of households providing medical treatment for each other.[18] Whether or not we can call early medieval English medical craft "learned," the known efficacy of remedies such as the eye salve which combats MRSA indicates that its practitioners were intelligent and observant. The writers of Old English medical texts could discern what worked well, without knowing (or at least articulating) why it worked.

My study focuses on three texts from early medieval England: *Bald's Leechbook*, *Leechbook III*, and the *Old English Herbal* (OEH).[19] The first two exist in a single manuscript, London, British Library, Royal MS 12 D XVII, which is divided into three parts. A Latin codicil at the end of book 2 states that the first two books were copied by Cild at the request of Bald, so *Leechbooks I* and *II*, referred to together as *Bald's Leechbook*, seem to be a single compilation in two parts.[20] Both sections of *Bald's Leechbook* contain several portions translated from classical and late antique

[16] Horden, "What's Wrong with Medieval Medicine," 20.

[17] Horden discusses the variety of Western European medical texts in the early Middle Ages, from formularies and miscellanies, often spuriously attributed to Galen or Hippocrates, to theoretical texts such as *The Book of Medicine from Urines*. About the latter Horden comments, "it is hard to imagine at whom the treatise is aimed or how it could, without a great deal of supplementary instruction, be turned to practical advantage." Peregrine Horden, "Sickness and Healing," in *The Cambridge History of Christianity*, vol. 3, *Early Medieval Christianities, c. 600–c. 1100*, ed. Thomas F. X. Noble and Julia M. H. Smith (Cambridge, UK, 2008), 416–32, at 422.

[18] For this later context, see Getz, *Medicine in the English Middle Ages*; Michelle DiMeo, "Authorship and Medical Networks: Reading Attributions in Early Modern Manuscript Recipe Books," in *Reading and Writing Recipe Books, 1550–1800*, ed. Michelle DiMeo and Sara Pennell (Manchester, 2013), 25–46; Elaine Leong, "Papering the Household: Paper, Recipes, and Everyday Technologies in Early Modern England," in *Working with Paper: Gendered Practices in the History of Knowledge*, ed. Carla Bittel, Elaine Leong, and Christine von Oertzen (Pittsburgh, 2019), 32–45; Monica H. Green, *Women's Healthcare in the Medieval West: Texts and Contexts*, Collected Studies 680 (Burlington, VT, 2000), especially "The Possibilities of Literacy and the Limits of Reading: Women and the Gendering of Medical Literacy"; and Elaine Leong, *Recipes and Everyday Knowledge: Medicine, Science, and the Household in Early Modern England* (Chicago, 2018).

[19] I have selected these texts because they have most often been used by previous scholars to describe early medieval medicine for specialized practitioners. A third text, the *Lacnunga*, has been discussed in less detail as a document for professional healers, so for the sake of space I am omitting it from this discussion.

[20] Cockayne, *Leechdoms*, 298.

texts such as the *Physica Plinii*, but also include prescriptions not found in continental versions of these texts.[21] *Leechbook III*, in contrast, mostly contains remedies not attested elsewhere. Both these texts primarily set forth ingredients and brief instructions for remedies for a wide variety of ailments; they are practical manuals probably developed to aid the working physician.[22] My other textual focus for early medieval English medicine is the *Old English Herbal* (OEH), a modified "translation" of the fourth-century Latin *Herbal of Pseudo-Apuleus*.[23] The text survives in four manuscripts.[24] The OEH outlines medical uses of various plants, and its translation into English involved adaptation of the information to an audience working in southern Britain. As with *Bald's Leechbook* and *Leechbook III*, it gives limited information about the details of preparing these remedies, and seems to have been intended for use by medical practitioners who already had some degree of training.[25] The texts in Royal 12 D XVII and the OEH offer a test case for examining healing practices both chemical and cultural and are the texts most often written about by scholars of early English medicine as it might have been conducted by those with some degree of specialization in the subject, whether acquired textually or through

[21] J. N. Adams and Marilyn Deegan, "Bald's *Leechbook* and the *Physica Plinii*," *Anglo-Saxon England* 21 (1992): 87–114, discuss the transmission of the *Physica* in the Old English texts. Conan Doyle and Malcolm Cameron discuss the sources of *Bald's Leechbook*: the Pseudo-Galenic *Liber Tertius* and *Passionarius*, the *Practica Alexandri Latini*, the *Synopses* and *Euporistes* of Oribasius, and a series of Latin herbals. Conan Doyle, "Anglo-Saxon Medicine and Disease: A Semantic Approach" (PhD diss., University of Cambridge, 2011), 9–20, and M. L. Cameron, "Bald's *Leechbook*: Its Sources and Their Use in Its Compilation," *Anglo-Saxon England* 12 (1983): 153–82. *Leechbook III* has fewer obvious Latin medical sources, but Emily Kesling has analyzed its use of Latin exorcisms in *Medical Texts in Anglo-Saxon Literary Culture*, Anglo-Saxon Studies 38 (Woodbridge, UK, 2020), 81–94. Richard Scott Nokes, "The Several Compilers of Bald's *Leechbook*," *Anglo-Saxon England* 33 (2004): 51–76, argues that Cild did not work alone, and that the book had compilers working from various exempla.

[22] For arguments that physicians were the main audience for *Bald's Leechbook* and *Leechbook III*, see Doyle, "Anglo-Saxon Medicine"; McIlwain, "Theory and Practice"; Audrey Meaney, "The Practice of Medicine in England about the Year 1000," *Social History of Medicine* 13 (2000): 221–37; Audrey L. Meaney, "Alfred, the Patriarch and the White Stone," *Journal of the Australasian Universities Language and Literature Association* 49 (1978): 65–79; Stephanie Hollis, "The Social Milieu of Bald's Leechbook," *AVISTA* 14 (2004): 11–16; and Debby Banham and Christine Voth, "The Diagnosis and Treatment of Wounds in the Old English Medical Collections: Anglo-Saxon Surgery?" in *Wounds and Wound Repair in Medieval Culture*, ed. Larissa Tracy and Kelly DeVries, Explorations in Medieval Culture 1 (Leiden, 2015), 153–74.

[23] *The Old English Herbarium* and *Medicina de quadrupedibus*, ed. Hubert Jan de Vriend, EETS Original Series 286 (Oxford, 1984), hereinafter OEH. A facsimile of manuscript V was published in 1998, edited by Maria D'Aronco and Malcolm Cameron: M. A. D'Aronco and M. L. Cameron, eds., *The Old English Illustrated Pharmacopoeia: British Library Cotton Vitellius C III*, Early English Manuscripts in Facsimile 27 (Copenhagen, 1998). A thorough study and translation is Van Arsdall, *Medieval Herbal Remedies*.

[24] London, British Library, Cotton MS Vitellius C III; British Library, Hatton MS 76; British Library, Harley MS 585; and British Library, Harley MS 6258 B, which Van Arsdall argues is in Middle English.

[25] Linda E. Voigts, "Anglo-Saxon Plant Remedies and the Anglo-Saxons," *Isis* 70 (1979): 250–68. Van Arsdall also persuasively argues that the OEH was a practical book for healers in "Reading Medieval Medical Texts." Lexical studies include Maria Amalia D'Aronco, "The Botanical Lexicon of the Old English *Herbarium*," *Anglo-Saxon England* 17 (1988): 15–33, and Maria Amalia D'Aronco, "Gardens on Vellum: Plants and Herbs in Anglo-Saxon Manuscripts," in *Health and Healing from the Medieval Garden*, ed. Peter Dendle and Alain Touwaide (Woodbridge, UK, 2008), 101–27.

experience. As I will show, these texts can also be a case study for evaluating the potential for placebo responses in medieval medicine beyond southern Britain. Since the placebo response interacts with cultural conceptions of disease and treatment and requires meaningful encounters with physicians, such an approach also helps us embed medical practices more thoroughly in early medieval culture. Understanding placebo responses offers a lens through which to consider the intersection of chemicals, bodies, healing, and culture in early medieval England.

Mechanisms of the Placebo Effect

The first point to emphasize is that placebo responses produce real somatic changes, and real results. Often, when the placebo effect is evoked in modern analyses of early medicine, it serves to delegitimize premodern healing culture. One article observes that early medieval patients "would have died or recovered due almost entirely to the actions of their own immune systems"—implying that chemically inert treatments could not affect these systems.[26] If medicine is "just a placebo," writers imply, then it cannot "really" work. However, we now understand that the placebo effect is neither invalid nor illegitimate. Chemically inert remedies can bring about measurable as well as subjective somatic changes, at times identical to those remedies whose pharmacological properties are well documented—when the pathology is one that the body's own systems can mitigate. When patients' illness experiences improve after taking a placebo, it is not "just in their heads"; if it were, clinical trials would not need to test against it with double-blind formats. Understanding that a placebo response can trigger somatic functions even in the absence of an ingredient that modern biomedicine would regard as "active" can get us beyond a simple "it works/it doesn't" dichotomy in our consideration of early medieval medicine, where only treatments meaningful to our contemporary medical culture are afforded the former status. It allows us to integrate cultural conceptions of illness and healing with what we know of biochemistry, rather than discuss them separately. Any substance given for the relief of an illness has the potential to work for a substantial proportion of the recipients, in the right set of circumstances. I define "working" in this context in line with most studies of placebo effects: a remedy works if the patient perceives that it brings about an improvement in his or her illness state.

Modern medical research on the placebo effect has accelerated over the last few decades; "placebo studies," carried out at the intersection of biomedical, psychological, pharmaceutical, and anthropological research, is now a recognized field of expertise.[27] Although there is not complete agreement, the current model understands the placebo effect to occur as a result of two psychological phenomena: conditioning and expectancy. In this discussion, I will further distinguish between what I will call "conscious" and "unconscious" expectancy. I will call "conscious expectancy"

[26] Barbara Brennessel, Michael D. C. Drout, and Robyn Gravel, "A Reassessment of the Efficacy of Anglo-Saxon Medicine," *Anglo-Saxon England* 34 (2005): 183–95, at 194.

[27] To select just a few examples of the growth of placebo studies, the journal *Perspectives in Biology and Medicine* has had several articles in the last few decades exploring the topic, such as Bruce Barrett et. al, "Placebo, Meaning, and Health" 49/2 (2006): 178–98, and Ted J. Kaptchuk, "Open-Label Placebo: Reflections on a Research Agenda" 61/3 (2018): 311–34, as well as others cited below.

any beliefs we have about sickness and medicine that we're aware of, which come about from direct experience or from communications with friends and doctors. "Unconscious expectancy" comes from beliefs about treatments or illnesses that we may not even realize we have. Medical anthropologists such as Daniel Moerman and Howard Brody stress the role of unconscious cultural factors in expectancy, a role both of them refer to as "meaning."[28] In fact, Moerman renames the "placebo effect" as the "meaning response," arguing that the creation of meaning—from conditioning, conscious expectancy, and unconscious beliefs—is the best explanation of somatic results arising from chemically inert (and to some extent, even from chemically active) treatment.[29] Moerman's terminology of "meaning response" has been criticized. Many clinicians and researchers attempting to explore the biological underpinnings of the response believe that a combination of conditioning and expectancy (with the latter incorporating "meaning") is sufficient to explain the mechanism.[30] Nevertheless, for the purpose of considering premodern medical practice in its contemporary culture, Moerman's "meaning response" as a more expanded term has much to offer. Allowing categories such as conditioning and expectancy to have blurry boundaries, blending the role of the physician and the cultural understanding of illnesses, can reflect a more dynamic interchange among these categories. Therefore, I will use both "placebo effect" and "meaning response" in this article to describe a positive somatic change resulting from chemically inert healing intervention.

Conditioning

Conditioning happens when a chemically active agent is paired with something inactive, which often has a strong sensory component. A somatic response to the inactive agent persists even when the chemically active element is later removed. Conditional responses can be initiated in a variety of species, not just humans. The most famous example is that of "Pavlov's dog." In the late nineteenth century, Ivan Pavlov repeatedly linked a pair of actions: ringing a bell and feeding dogs. The dogs began to show somatic responses—salivating—to the sound of the bell, even when it was no longer paired with the actual smell of food. The key elements in these and other examples of classical conditioning are the "unconditioned stimulus" (US), which is the active stimulus, in this case the food; the "conditioned stimulus" (CS), which is not active but is closely paired with the unconditioned stimulus, in this case the bell; and the "conditioned reflex" (also called the "conditional response") (CR), which is when the subject shows a somatic reaction to the CS even

[28] Daniel E. Moerman, *Meaning, Medicine, and the "Placebo Effect,"* Cambridge Studies in Medical Anthropology 9 (Cambridge, UK, 2002); Howard Brody, "Meaning and an Overview of the Placebo Effect," *Perspectives in Biology and Medicine* 61 (2018): 353–60; and H. Brody, "The Placebo Response: Recent Research and Implications for Family Medicine," *The Journal of Family Practice* 49 (2000): 649–54.

[29] Moerman also prefers the term *meaning response*, as it can describe disparities in responses to chemically active agents observed in different cultural environments, discussed below.

[30] Marco Annoni and Charlotte Blease, "A Critical (and Cautiously Optimistic) Appraisal of Moerman's 'Meaning Response,'" *Perspectives in Biology and Medicine* 61 (2018): 379–87.

in the absence of the US, in this case, salivation.[31] Perhaps the most widely known animal conditioning experiment in placebo studies is Robert Ader's on rats.[32] Ader worked with several rats in which the auto-immune disease lupus had been induced; these rats received an immunosuppressive agent which mitigated the effect of the disease. Ader (at first unintentionally) paired the agent (US) with a sweet-tasting liquid (CS). After the active agent was discontinued, a high percentage of the rats still receiving the liquid continued to demonstrate suppressed immune systems—the conditional response. Ader's experiment showed that placebo responses were not limited to human subjects and could not be dismissed as the result of "credulity" or "hysteria" in foolish patients.

Several ingredients in early medieval medical recipes occur frequently, especially honey, wine, and vinegar, which often accompany herbs as a matrix for topical application or aid to ingestion. In the right circumstance, some of these could have taken on the role of a conditioned stimulus. Honey is especially interesting in this regard. Remedies in *Bald's Leechbook*, *Leechbook III*, and the OEH frequently call for herbs or minerals to be administered in honey for both topical and ingested preparations. Honey itself has antimicrobial properties, so when used on a wound it could have a beneficial effect regardless of what herbal ingredients it accompanied; ingested, it can also treat infections of the digestive tract.[33] Honey, however, often appears in Old English medical remedies treating ailments for which it would probably not be chemically active—perhaps to make the mixtures more palatable. In the OEH under "water germander," it forms part of a remedy for chest phlegm: "For formation of phlegm in the chest, take ten pennies' weight of the same plant mixed with honey. Give one spoonful to eat, and the chest will be purged."[34] Honey would not relieve chest congestion, but germander might ease the patient's cough, as it has antispasmodic properties as well as anti-inflammatory ones.[35] Similarly, honey is

[31] Mark Ridley, "Pavlov, Ivan Petrovich," in *The Oxford Companion to the Mind*, ed. Richard L. Gregory, 2nd ed. (Oxford, 2004), https://www.oxfordreference.com/view/10.1093/acref/9780198662242.001.0001/acref-9780198662242-e-657 (last accessed 1 June 2022). Ridley notes that a more correct translation of what Pavlov wrote would be "conditional" rather than "conditioned," but that the latter remains widespread.

[32] Robert Ader, "The Role of Conditioning in Pharmacotherapy," in *The Placebo Effect: An Interdisciplinary Exploration*, ed. Anne Harrington (Cambridge, MA, 1997), 138–65.

[33] Manisha Deb Mandal and Shyampada Mandal, "Honey: Its Medicinal Property and Antibacterial Activity," *Asian Pacific Journal of Tropical Biomedicine* 1 (2011): 154–60, and Ilana Krug, "The Wounded Soldier: Honey and Late Medieval Military Medicine," in *Wounds and Wound Repair*, ed. Tracy and DeVries, 194–214.

[34] "Wið þa gerynningcge þæs worsmes ym ða breost genim þas ylcan wyrte tyn penega gewihte mid hunige gemencged, syle þicgean anne cuculere fulne, þa breost beoð afeormude." de Vriend, OEH, 206. Translations from the OEH are from Van Arsdall's *Medieval Herbal Remedies*, 119–230, at 220. When quoting and translating from *Bald's Leechbook* and *Leechbook III*, translations are mine but based on those of Cockayne; I also expand silently some abbreviations in the Old English. Where Doyle has translations (*Bald's Leechbook*) I have also consulted these. Van Arsdall contextualizes Cockayne's translation and its influence on the understanding of Anglo-Saxon medicine in *Medieval Herbal Remedies*, 35–67.

[35] Shirin Hasani-Ranjbar et al., "A Systematic Review of the Efficacy and Safety of *Teucrium* Species; From Anti-oxidant to Anti-diabetic Effects," *International Journal of Pharmacology* 6 (2010): 315–25. Somewhat counterintuitively, agents that work against coughing spasm can help the patient clear phlegm. One modern example is guaifenesin, also both an expectorant and antispasmodic. Agron

paired with horehound for "lungenadle" [lung disease] in OEH remedy 46.7; horehound also has antispasmodic properties and could suppress coughing.[36] Perhaps the honey made the mixture soothing for the patient to swallow—a benefit which has led to its inclusion in many modern throat lozenges.

At least two pharmacologically active remedies for lung ailments, then, appear paired with honey: we have a circumstance in which we could consider germander or horehound to be the unconditioned stimulus and honey the conditioned stimulus. If a patient went to an early medieval healer and was given these treatments, his or her condition probably improved. If, on a subsequent visit for a cough, the physician instead gave a remedy with a pharmacologically inactive agent (against that ailment) but paired it with honey, the circumstances would be right for the patient to have a conditional response to the sweet flavor and experience relief from the cough, despite not receiving an antispasmodic agent. Both the OEH and *Bald's Leechbook* list other remedies for cough containing herbs not known to have any special therapeutic effect on cough: wild strawberry, elecampane, and comfrey (OEH 38.2; *Bald's Leechbook* 1.15.7).[37] However, these remedies also include honey and could, under the right circumstances, induce a conditional response that improved the illness state of the patient. In short, they would work.

The preceding scenario is necessarily conjecture and requires that the hypothetical patient receive the remedies under the right circumstances and in the right order. We have no way of knowing if this happened, or if it did, how often. However, such responses in premodern medicine need to be considered a possibility, even if we cannot know how often they occurred. Conditioning is well documented in initiating a placebo response in patients—even ones who know that they are not receiving pharmacologically active agents.[38] Classical conditioning works best when there is repetition; repeated pairings of the US and CS increase the likelihood of a conditional response. However, multiple iterations are not always necessary, especially if the initial result is dramatic.[39] If a patient experienced rapid, substantial relief from the administration

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Collaku, Yong Yue, and Kenneth Reed, "Efficacy and Safety of Guaifenesin for Upper Back, Neck, and Shoulder Pain: A Phase II Proof-of-Concept, Multicenter, Placebo-Controlled, Repeat-Dose, Parallel-Group Study," *Journal of Pain Research* 10 (2017): 669–78.

[36] de Vriend, OEH, 92; Van Arsdall, *Medieval Herbal Remedies*, 125; Sanae El Bardai et al., "The Vasorelaxant Activity of *Marrubenol* and *Marrubiin* from *Marrubium vulgare*," *Planta Medica* 69 (2003): 75–77.

[37] de Vriend, OEH, 84; Van Arsdall, *Medieval Herbal Remedies*, 124; and Cockayne, *Leechdoms*, 58–59. These herbs are anti-inflammatory and analgesic but unlikely to help with bronchial spasm. Ana M. L. Seca et al., "The Genus *Inula* and Their Metabolites: From Ethnopharmacological to Medicinal Uses," *Journal of Ethnopharmacology* 154 (2014): 286–310, and Christiane Staiger, "Comfrey: A Clinical Overview," *Phytotherapy Research* 26 (2012): 1441–48. I use Cockayne's numbering system for texts in BL Royal D 12 XVII.

[38] Luana Colloca and Franklin G. Miller cite a study in which children with ADHD were able to reduce doses of active medication by alternating it with a placebo with which it had previously been paired. Both the children and their parents were aware that the alternate doses were pharmaceutically inert, yet the treatment remained effective. Luana Colloca and Franklin G. Miller, "Harnessing the Placebo Effect: The Need for Translational Research," *Philosophical Transactions of the Royal Society of London B: Biological Sciences* 366 (2011): 1922–30.

[39] A frequent example in psychology is conditioned taste avoidance, also called the "Sauce Béarnaise Syndrome" by psychologist Martin Seligman after he ate a dinner with Béarnaise sauce and later vomited, and then found that Béarnaise sauce tasted bad to him for years after the event. The mechanism in

of a medicine containing honey, she or he could condition subsequent responses for years from the single iteration. Especially in light of recent finds about the phytochemical effectiveness of some early medieval remedies, conditioning can shape our understanding of medical treatments that are not chemically active.

Conscious Expectancy

Another psychological phenomenon that placebo studies explores is "expectancy"—the idea that medicines work because the patient expects them to, in the way that the patient believes they will. Expectancy is related to conditioning, as conditioning can help create the expectations of efficacy, but it does not require the pairing of particular sensory stimuli. Some researchers have argued that expectancy is superior to conditioning for understanding placebo responses because it requires no repetition of CS and US pairings; expectancy can be established and maintained verbally.[40] Most research into what I am calling conscious expectancy involves the passing of information—particularly false information—and examining the result. For instance, so-called "deceptive" trials, in which subjects are told that they *will* receive an active substance like caffeine, show a higher rate of placebo response compared to trials where subjects are told that they *might* receive an active substance, even when both trials involve only inert agents.[41] This higher rate is attributed to expectancy; people expect to get the jitters, so they do. However, expectancy has some limitations in evoking a placebo response. No increase in placebo response rates accompany deceptive information about the "efficacy" of the inactive substance if the expected result is not one of which the subject can be consciously aware. As Colloca and Miller find: "Many modifications in the body are not consciously accessible. For example, endocrine placebo responses are not affected by verbal instructions. A persuasive communication that cortisol (or growth factor) is going to change by means of the power of a specific treatment (actually an inert medication) does not produce any effect. Thus, an event that cannot be experienced and perceived by human cognition (e.g., growth factor secretion) appears not to be influenced by self-cognition."[42] Placebo responses based on conscious expectancy would be most likely then for treatments for pain, coughing, swelling, and other readily perceived conditions. They would be less likely for endocrine imbalances and the like. For the possibility of expectancy responses in early medieval medicine, I will focus on pain management, also the area which modern placebo studies has researched most.

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this case probably ties to evolutionary needs for organisms to avoid poisons, so may not directly apply to a more positive conditioned response, but the ability to quickly form a conditioned response in some instances could apply to medical efficacy. Seligman's experience and subsequent theories on taste avoidance are detailed in Marcus C. Stensmyr and Sophie J. C. Caron, "Neuroscience: The Secret of Sauce Béarnaise Syndrome Is in the Circuit," *Current Biology* 30 (2020): 1413–15.

[40] Irving Kirsch, "Specifying Nonspecifics: Psychological Mechanisms of Placebo Effects," in *The Placebo Effect*, ed. Harrington, 166–86.

[41] Andrew L. Geers et al., "Placebo Expectations and the Detection of Somatic Information," *Journal of Behavioral Medicine* 34 (2011): 208–17.

[42] Luana Colloca and Franklin G. Miller, "How Placebo Responses Are Formed: A Learning Perspective," *Philosophical Transactions of the Royal Society B: Biological Sciences* 366 (2011): 1859–69, at 1865.

Two factors would create conscious expectancy in a patient seeking pain relief from an early medieval practitioner. One is the patient's prior experience. If an earlier visit to the physician had "helped"—that is, it was followed by a positive change in the illness state that the patient believed resulted from the healer's intervention—subsequent visits would take place in a condition of expectancy. That is to say, "this person helped me last time, so he or she can probably help me again." This initial result can arise from pharmacologically active remedies, from a placebo response, or from a purely subjective confirmation bias on the part of the patient—it does not matter which. Once such expectancy has been raised, it can persist and can elicit real, somatic changes in the sufferer.

The other powerful creator of expectancy is verbal reinforcement. If your friend on Facebook writes, "I've tried lots of vitamin C and zinc cold remedies, and I think Airborne Chewables is the only one that really works," and you read the post, then you are more likely to also receive relief from cold symptoms should you seek out Airborne Chewables the next time a virus sweeps your area. We have no evidence for or against this kind of peer reinforcement of efficacy with regard to early medieval English patients, although we can speculate that a satisfied patient would mention his or her experience to friends and family just as we do. However powerful peer reinforcement of expectancy is, though, verbal reinforcement from a physician is even more potent. Contemporary doctors are advised to enhance patients' response to therapies, whether inert or active, with verbal components, for (as one recent *Clinical Therapeutics* article states) "positively influencing patients' belief about therapeutic success is one way to maximize the placebo effect."[43]

The physician's potential role in expectancy-based responses offers a new light on some textual oddities in medieval medical texts. Comments about the value of the remedies, which Conan Doyle and others refer to as "efficacy statements," appear often in the OEH, *Bald's Leechbook*, and *Leechbook III*.[44] Claire Jones, studying medical texts from later in the English Middle Ages, suggests several possible reasons for their inclusion, from letting the reader know that they have reached the end of the text, to indicating that the recipe is "proven," whether by experience or because it conforms to learned theories of human physiology; she also observes that "efficacy phrases . . . may have had an encouraging effect."[45] Nearly every entry in the OEH contains such a statement at the end. To take just a few examples, remedy 46.1, on horehound to treat a head cold, exclaims, "it will help him wonderfully [heo hine gehæleð wundorlice]."[46] OEH 14.1, on the plant dock for swellings in the

[43] Victor Chavarria et al., "The Placebo and Nocebo Phenomena: Their Clinical Management and Impact on Treatment Outcomes," *Clinical Therapeutics* 39 (2017): 477–86, at 480.

[44] Doyle, "Anglo-Saxon Medicine."

[45] Claire Jones, "Formula and Formulation: 'Efficacy Phrases' in Medieval English Medical Manuscripts," *Neuphilologische Mitteilungen* 99 (1998): 199–209, at 201. Later medieval charms are discussed also by Lea T. Olsan, "Charms in Medieval Memory," in *Charms and Charming in Europe*, ed. Jonathan Roper (New York, 2004), 59–88. Middle English medical recipes, some of which also include such statements, are studied in Martti Mäkinen, "Herbal Recipes and Recipes in Herbals—Intertextuality in Early English Medical Writing," in *Medical and Scientific Writing in Late Medieval English*, ed. Irma Taavitsainen and Päivi Pahta (Cambridge, UK, 2004), 144–73.

[46] de Vriend, OEH, 90, and Van Arsdall, *Medieval Herbal Remedies*, 170.

groin enthuses that "this is best for these swellings [þys is selest wið cyrnlu]."[47] Similar statements appear in the texts in Royal 12 D XVII: "[this is] the best remedy [[þis bið] se betsta læcedom]" (*Bald's Leechbook* 1.2.16); "that helps against worms in the gut [þæt deah wiþ wambe wyrmum]" (*Bald's Leechbook* 2.34); "soon it is well [sona biþ sel]" (*Leechbook III* 15).[48] Such statements also appear in the Latin source texts on which *Bald's Leechbook* and the OEH were based, but Linda Voigts, Van Arsdall, and others have shown that early medieval compilers made changes to bring the texts in line with their own resources and expectations, so retaining the statements was a choice.[49] The compilers believed that these periodic reminders that remedies worked had a purpose in medical writing. To modern readers, however, these statements appear at first to be largely redundant. After all, surely the supposition of the medical texts is that their remedies work; otherwise, why write them? Nonetheless, the Old English and Latin medical texts repeatedly assert that the patient will soon improve, or maintain that salves or drinks are "good medicine."

Similarly puzzling to readers is a curious tic of the first part of *Bald's Leechbook* and its sources in particular—a tendency to switch from instructing the doctor to seemingly instructing the patient, who is sometimes referred to as "he" and sometimes as "you"—to the frustration of some early translators. Oswald Cockayne in particular felt impelled to protest at these shifts, as in 1.59: "sting finger on ciolan aspiw eft eall and ma gif þu mæge; þonne on morgen forlæt blod . . . swa mæst aræfnan mage," which he translates "poke thy finger into the gullet, spew up again all and more if thou may; then in the morning let blood . . . as much as he may bear," noting next to *thou* and *he* "the careless use of pronouns belongs to the text."[50] Similarly, 1.82 reads, "Gif men sie micel wæce getenge popig gegnid on ele smire þinne andwlitan mid and þone lichoman ealne wundorlice raþe him biþ seo wæcce gemetgod," which Cockayne translates, "If wakefulness be (with) a man, press poppy, rub in oil, smear your face with [it] and whole body, the wakefulness will be alleviated wonderfully quickly."[51] Cockayne's frustration with these phrases as he translated is clear, as he writes, "The change of pronouns is an error of the text"[52]—probably out of concern that his reading audience would attribute the shift to him. Pronoun shifts also occur in later medieval medical texts, so we are seeing a widespread phenomenon with no obvious purpose.

I propose that such shifts are not an error, as Cockayne claimed. Van Arsdall has persuasively argued that in many cases the instructions in early medieval medical texts are only references, shorthand reminders for practitioners who already possess the relevant skill sets. The Old English medical texts offer very concise information about what to do.[53] I suggest that the periodic shift to second-person pronouns indicates that the remedies also at times remind the physician not just

[47] de Vriend, OEH, 58, and Van Arsdall, *Medieval Herbal Remedies*, 154.

[48] Cockayne, *Leechdoms*, 34, 240, 318.

[49] Voigts, "Anglo-Saxon Plant Remedies," and Van Arsdall, *Medieval Herbal Remedies*. For analysis of the translation strategies of *Bald's Leechbook* and its possible ties to the translation programs associated with King Alfred the Great, see Kesling, *Medical Texts*, 1–22.

[50] Cockayne, *Leechdoms*, 131.

[51] Cockayne, *Leechdoms*, 153.

[52] Ibid.

[53] Van Arsdall, "Reading Medieval Medical Texts," 21.

what to do but what to *say*, even though the physician isn't instructed explicitly on this. If instructions for verbal components comprise part of what these texts convey to doctors, then efficacy statements could serve as reminders to tell the patient that the remedy will work. This could also explain why the efficacy statements in the sources are not always copied exactly, at times being retained from the source, at times being omitted, and at times being added to the Old English.[54] The exact remedy to which the efficacy phrase is attached is less important than the periodic reminder throughout the book to remark to the patient the high chance of a mixture's success. Such statements made by one's physician have huge implications for creating a meaning response in a patient. This has been observed particularly in remedies for pain, because pain is a neurological phenomenon and apparently can be influenced by meaning responses independent of the actual physical condition giving rise to the sensation. Thus, people often experience pain—and other sensations—in limbs that have been amputated, but, on the other hand, pain does not exist without conscious perception (which is why anesthesia works). In the latter decades of the twentieth century, endogenous chemicals called endorphins, whose actions opioid drugs mimicked, were found to affect neural pathways and thereby minimize pain perception. In clinical studies, patients experiencing analgesia from opioids and those experiencing analgesia from a placebo both found the pain increased again if they were given an opioid blocker such as naloxone.[55] In the case of placebo responses to pain, then, we have not only evidence of a somatic change generated by a psychological response but even some idea of the neurochemical mechanisms by which the response works.

Many of the remedies in *Bald's Leechbook* and *Leechbook III* are analgesic, and many of these involve efficacy statements as well. For instance, *Bald's Leechbook* 1.3.2 instructs the doctor treating ear pain to "take oil and goose grease and pour on, then the sore departs [genim ele genim eac gose rysele geot on þonne gewit þæt sar aweg]."[56] Internal pain is treated topically in 1.17.1: "For heart pain, boil a handful of rue in oil, and include an ounce of aloes, rub with that, it stills the soreness [Wiþ heort wærce rudan gelm feoþ on ele and do alwan ane yntsan to smire mid þy þæt stilð þam sare]," and in 1.21: "Again, for soreness of the side, rue beaten and mingled with lard, lie on the side; that will be better [Eft wið sidan sare rudan wið rysele gemenged and gebeaten lecge on þa sidan þæt bet]."[57] If we understand the efficacy statement to be part of the remedy—part of what the doctor does—then these treatments would have had a very good chance of bringing relief to the patient, regardless of their lack of chemically active ingredients. The meaning response would induce the brain to produce endorphins and reduce the sensation of pain. The stylistic "anomalies" of efficacy statements and pronoun shifts suggest that early medieval English healers, as well as their predecessors who produced some of the

[54] Retention, addition, and omission of efficacy phrases in several Old English remedies compared with their Latin originals can be seen even in the brief sampling of Old English and Latin texts in Cameron, *Anglo-Saxon Medicine*, 84–88.

[55] David B. Morris, "Placebo, Pain, and Belief: A Biocultural Model," in *The Placebo Effect*, ed. Harrington, 187–207.

[56] Cockayne, *Leechdoms*, 40.

[57] Cockayne, *Leechdoms*, 60, 64.

source texts, engaged in behaviors that would augment their patients' response to treatment by heightening expectancy, exactly as modern clinical physicians are encouraged to do. This is not, of course, to claim that medieval doctors knew about the placebo effect specifically. They need not have understood the placebo response to recognize what worked, including positive statements to their patients about efficacy.

Unconscious Expectancy

Unconsciously held beliefs also affect somatic responses, both to placebo and to treatments which do involve chemically active agents. Human response to pharmacologically active agents varies widely among cultures—meaning makes medicine in bodies, regardless of what happens in laboratories. Brody's and Moerman's "meaning response" models integrate medicine involving pharmacologically active ingredients and that which does not—a meaning response can occur in any circumstance, including in tandem with chemical efficacy. Moerman points to differing response rates to pharmacologically active agents based on the perceptions of that illness, familiarity of the remedy, or the modality of the treatment. Whether one folds the "meaning response" into "expectancy" or treats it as a separate, broader phenomenon, without question cultural factors influence the action of healing agents within human bodies. Moerman lists several unconscious assumptions of modern American patients that manifest in some clinically observed responses: "We know that shots are more powerful than pills . . . We know that drugs which have to be stored in the refrigerator are more powerful than ones that can be kept in the medicine cabinet. We know that big multi-colored capsules are more powerful than white aspirin-sized tablets. We know that very tiny pills, which must be small because they have very powerful medicine in them, are stronger than aspirin-sized tablets . . . And it seems that, as long as we know these things to be true, we are right."[58] The medieval texts give us glimpses of pre-Conquest cultural beliefs about treatment modalities and diseases which might have affected (and effected) a healing response in patients. *Bald's Leechbook* contains translated material and frequently represents a broader, European view of medical meaning. Much of that would have applied to early medieval England, of course. However, to consider early medieval England in particular, I will focus primarily on remedies in *Leechbook III*, which contains less material from continental sources and therefore may be more specific to early English medical culture.[59]

When several remedies in *Leechbook III* require that an object used for a medical intervention be a specific color, it seems a reasonable surmise that this color was seen as particularly meaningful in that healing context—even as pill colors have

[58] Moerman, *Meaning, Medicine, and the "Placebo Effect,"* 53. He draws these statements from published studies, unpublished, small-scale experiments done by himself and his students, and observations from practicing physicians.

[59] See, for instance, Cameron, *Anglo-Saxon Medicine*, 35, and Marijane Osborn, "Anglo-Saxon Ethnobotany: Women's Reproductive Medicine in *Leechbook III*," in *Health and Healing from the Medieval Garden*, ed. Dendle and Touwaide, 145–61. Kesling cautions against automatically assuming that the material in *Leechbook III* represents "folk" medical practice or belief, however. Kesling, *Medical Texts*, 59.

been proven meaningful in modern American and European medicine.[60] Color has significance in *Leechbook III* from the first entry: "Against when a man has a pain in the head, take the lower part of *wrætte*,[61] put it on a red bandage; wrap the head with it."[62] Later in the same chapter, the practitioner is again told, "Dig up plantain without iron before sunrise; bind the roots around the head with *wræte* with a red bandage; soon he will be well." The specific color of the bandage used to stimulate skin contact with the herbs, combined with an efficacy statement at the end, could augment a meaning response. It certainly seems plausible that early medieval patients and their doctors could unconsciously "know" that a red bandage worked better for a headache, even as modern American patients "know" that red pills work better than white ones for pain.[63] And, as Moerman says, if they knew that, then it would be true.

Color also arises in several remedies that call for a mixture to be strained. *Leechbook III* chapter 46 for eye pain and pupil contractions, chapter 47 for palsy resulting in facial asymmetry, and chapter 60 for ear pain all call for sodden or chewed herbs to be strained or wrung through "hæwenne" cloth.[64] Cockayne translated *hæwenne* as "purple" in the first two instances and "colored" in the last; Carole Bigham has persuasively argued that the word meant is "blue."[65] It is possible that some agent in the dye had a pharmacological effect on the ensuing concoction. It is equally possible that it had no chemical effect at all. However, if the patient unconsciously believed that a blue cloth promoted analgesia or muscular symmetry, then the blue cloth could have activated the body's own palliative mechanisms for pain relief and weakness. The question is not whether the cloth "worked" or it didn't, but how it did—by chemical agency augmented by the patient's meaning response, or by the meaning response alone. The difference would have mattered little to the patient if the symptoms lessened.

Understanding how unconscious expectancy operates can not only move our discussions past which remedies do or don't "work," but can also put to rest the distinction between magic and medicine in early medieval culture. Commentators on early medieval medicine have long observed that the original audience would have been unlikely to differentiate the two and have called for discussions that integrate the dual approaches. Peregrine Horden, for instance, argues that "The only path through these difficulties is to be found in respecting local definitions and categories"—that

[60] Anton J. M. de Craen et al., "Effect of Colour of Drugs: Systematic Review of Perceived Effect of Drugs and of Their Effectiveness," *British Medical Journal* 313 (1996): 1624–26.

[61] Cockayne suggests "crosswort," in *Leechdoms*, 305. The online *Dictionary of Old English Plant Names*, drawing on the earlier work of Peter Bierbaumer, proposes *Rubia tinctorum*, common madder: Peter Bierbaumer and Hans Sauer, eds., *Dictionary of Old English Plant Names*, http://oldenglish-plantnames.org/ (last modified 10 March 2011; last accessed 1 June 2022). If Bierbaumer is correct, the plant itself would add color to the bandage, as madder is a dye.

[62] "Wiþ þon þe mon on heafod ace, genim nioþowarde wrætte do on readne wræd binde þæt heafod mid . . . adelf wegbrædan butan isene ær sunnan upgange bind þa moran ymb þæt heafod mid wræte reade wræde sona him bið sel." Cockayne, *Leechdoms*, 304.

[63] Moerman, *Meaning, Medicine, and the "Placebo Effect,"* 48–50. Blue pills were more effective than red for tranquilizing and for sleep aid.

[64] Cockayne, *Leechdoms*, 338, 344.

[65] Cockayne, *Leechdoms*, 339, 345, and C. P. Biggam, *Blue in Old English: An Interdisciplinary Semantic Study*, Costerus New Series 110 (Amsterdam, 1997).

is, seeing the magical and the medical as "different authorities" but not necessarily incompatible ones.[66] However, the Old English medical texts in particular do not distinguish healing interventions that we view as magical and those we view as medical into different authorities. Remedies calling for incantations, gesture, and placing of herbs on one's door intermix with those requiring steeping and ingesting of various plants.

These modalities matter. Moerman and others provide findings concerning culturally varying response to different methods of treatment in contemporary medicine. For instance, whether the remedy given is inert or active, shots work "better" than pills do for most American patients, even when dosages are the same and no fundamental biological reason exists why the injected medicine would transmit more effectively or more quickly.[67] Placebo surgery seems to have an even higher rate, at times over 75 percent, of evoking a meaning response that results in cessation of pain.[68] Several different treatment modalities appear in the texts in Royal 12 D XVII and the OEH. Ingestion of liquids prepared by boiling plant matter is common throughout, as is the making of salves which are applied externally. Remedies can also be placed in boiling liquid in such a way that the patient inhales the steam, which also contacts the skin. Some treatments call for alterations of diet—perhaps a more "self-administered" treatment. Some seem to be "proximity" modalities, for which the presence in one's house or clothing of an herb or mineral conveys a therapeutic benefit. And some involve verbal or kinetic components, such as reciting texts or making certain gestures when gathering herbs or administering to the patient. All of these modalities appear in *Bald's Leechbook* and *Leechbook III*; the OEH focuses more on methods involving skin contact and ingestion—probably because entirely verbal and kinetic remedies would fall outside the scope of a volume organized around plant-based medicine. These varying methods existed throughout

[66] Horden, "What's Wrong with Early Medieval Medicine?" 8. Meaney also describes "irrational" and "superstitious" elements of early medicine in Old English texts in "Practice of Medicine." For discussions specifically of "magic" in Old English medical texts, see Susan Závoti, "Blame It on the Elves: Perception of Illness in Anglo-Saxon England," in *Medieval and Early Modern Literature, Science and Medicine*, ed. Rachel Falconer and Denis Renevey, SPELL: Swiss Papers in English Language and Literature 28 (Tübingen, 2013), 67–78; Karen Louise Jolly, *Popular Religion in Late Saxon England: Elf Charms in Context* (Chapel Hill, 1996), especially chapter 4; and Alaric Hall, *Elves in Anglo-Saxon England: Matters of Belief, Health, Gender and Identity*, Anglo-Saxon Studies 8 (Woodbridge, UK, 2007), especially chapters 4 and 5. Lea Olsan, discussing later medieval medicine, comes close to this argument when she notes that charms and prayers are "verbal remedies" augmenting botanical and chemical ones. Lea T. Olsan, "Charms and Prayers in Medieval Medical Theory and Practice," *Social History of Medicine* 16 (2003): 343–65.

[67] Moerman, *Meaning, Medicine, and the "Placebo Effect,"* 51–65.

[68] Surgical placebo is not easily studied, of course, since the inherent risks prohibit planned research on the topic. However, in one example, patients underwent surgery to treat suspected ruptures in lumbar spinal discs. A subset of these patients, although they were believed to have ruptured discs, did not; the surgeon opened the patient up, determined there was nothing mechanical to be done, and simply sutured the incision closed. The patients were told upon awakening that this was the case, that the doctor had not performed the expected procedure. However, in follow-up visits, these patients—who knew their surgery had not involved direct intervention on their spinal column—reported relief of pain symptoms at a rate nearly equal to that of the patients whose discs were repaired. The act of undergoing surgery itself provoked a meaning response that alleviated the lower back pain. Moerman, *Meaning, Medicine, and the "Placebo Effect,"* 63–65.

early medieval Europe; however, the treatments in *Leechbook III* suggest that, in early medieval England, modalities with verbal and kinetic components had special potency. Indeed, the survival of several such remedies or "charms" well into the later medieval and early modern periods argues that verbal and kinetic treatments had a wide audience which continued to "just know" that they worked.[69]

One treatment which calls for modalities not usual in modern biomedicine appears in *Leechbook III* 18:

> For pain in the stomach and abdominal pain. When you see a dung beetle in the ground throwing [dirt], grasp him with both hands along with his flung-up [dirt], wave with your hands vehemently and say three times, "Remedium facio ad ventris dolorum." Then throw the beetle over your back on the road. Be careful not to look after it. When a man's stomach or abdomen has pain, grasp the stomach with your hands; it will soon be well with him. You can do this for twelve months after [you have caught] the beetle.[70]

Particular movements and speech in conjunction with catching the beetle are crucial to this remedy, and this is a treatment that many modern readers would be inclined to view as magical. The text itself makes no such distinction, however; the remedy comes between two others with an ingested modality. If these gestures and words, properly done, were meaningful to the physician and the patient, then the patient would have a good chance of experiencing real somatic relief from his or her pain. The therapy is designed to bring about an improvement in the patient's illness state, and in many cases it would do so. We need not dismiss such treatment as "magical," or even substantially different from phytochemical interventions. By understanding how variations in treatment mechanism can affect the meaning response, we can appreciate that such remedies would have been highly likely to bring about improvement in the patient's pain levels, as verbal and kinetic modalities seem to have been especially meaningful within early medieval English medicine.

Leechbook III has several examples of steaming as a treatment modality, perhaps another method which was felt to be especially efficacious. This, in combination with a high number of remedies that call for salves, or for laying or tying herbs on the body, suggests that early English patients and doctors understood medicines which worked through skin contact to be particularly effective. This is perhaps in contrast to modern medicine; ailments of the skin itself are often treated topically, but even though transdermal delivery of pharmaceutical remedies is increasingly possible, it remains rarer than ingestion. Internalizing the remedy by swallowing it or having it injected is, arguably, something we "just know" works better. If the treatment modalities in *Leechbook III* are an indication, early medieval English patients felt that application on the skin, directly or through steam, was powerful—and thereby meaningful. Of course, modalities also could be combined. *Leechbook III*'s remedy 38, for a woman with irregular menstruation, directs that she should first

[69] For discussion of charms in Middle English, see Olsan, "Charms in Medieval Memory"; Jones, "Formula and Formulation"; and Getz, *Medicine in the English Middle Ages*.

[70] "Wiþ wambe wærce and rysel wærce þær þu geseo tord wifel on eorþan up weorpan ymbfo hine mid twam handum mid his geweorpe wafa mid þinum handum swiþe and cweð þriwa 'Remedium facio ad uentris dolorem.' Weorp þonne ofer bæc þone wifel on wege beheald þæt þu ne locige æfter. þonne monnes wambe wærce oððe rysle ymbfoh mid þinum handum þa wambe him biþ sona sel. XII monaþ þu meaht swa don æfter þam wifele." Cockayne, *Leechdoms*, 318, 319.

be given brooklime while sitting in a hot bath. After that, a poultice of herbs and barley is to be placed on her vulva, and she is also to ingest the same profile of herbs in a concoction.[71] Multiple avenues of administering a remedy seem to offer the patient an even greater chance of finding the treatment meaningful.

If treatment modalities can have varying meanings across cultures, so too can illness have variation in its "meaning," with a corresponding difference in how patients respond to intervention. Moerman outlines how different nationalities at times have varying conceptions of illness. Studies carried out in the 1980s found that patients in the United States showed a much more emphatic response in trials to both placebo and pharmacologically active medication for high blood pressure than German patients. In Germany at that time, the medical establishment tended to express more concern about *low* blood pressure, routinely prescribing medication for patients whose readings would have been considered entirely "healthy" in the US. In contrast, US patients were (and are) regularly warned of the dangers of high blood pressure—the "silent killer," they are often told—so that condition was meaningful to them and their response to both active and inert treatments reflected this meaning.[72] Both Germany and the United States in the 1980s were clearly in the larger category of Western biomedicine, but differences still arose between the meaning responses of patients in these countries.

If a set of somatic sensations is identified as a disease by healer and patient it will be meaningful, and that meaning can help provoke a therapeutic result from the healer's intervention. As Moerman puts it, "far more often than we realize, what appears to be an 'obvious' biological matter is richly freighted with meaning, history, tradition, or the like; or requires consciousness to do its thing. Indeed, it is probably wise to assume this is the case until it's proven otherwise."[73] The labeling of certain symptoms as a disease rather than a set of unrelated somatic phenomena creates meaning, especially if the disease is culturally foregrounded. *Bald's Leechbook*, for instance, expressly signals the significance of jaundice:[74]

> From the gall disease, that is, from the yellow [disease] comes great harm. It is of all diseases the strongest. Then uncounted fluid increases within. These are the signs: his body turns bitter and grows yellow as good silk, and under the tongue the veins are dark and bad, and his urine is yellow. Let blood from him from the lung vein, give him frequently

[71] Cockayne; *Leechdoms*, 330. Marijane Osborne, in her commentary on this text, observes that brooklime is "an emmenagogue useful for regulating periods, and by implication for terminating an early pregnancy," drawing on John M. Riddle's *Contraception and Abortion from the Ancient World to the Renaissance* (Cambridge, MA, 1992). See also Osborne, "Anglo-Saxon Ethnobotany," 155. As Rebecca Flemming has pointed out, however, we should exercise caution in assuming that emmenagogues were primarily used to terminate pregnancy in premodern medicine, as "Menstruation was . . . understood to be an essential prerequisite for conception even more clearly than it was understood to mark the premature end of a pregnancy." Rebecca Flemming, *Medicine and the Making of Roman Women: Gender, Nature, and Authority from Celsus to Galen* (Oxford, 2000), 163.

[72] Moerman, *Meaning, Medicine, and the "Placebo Effect,"* 78–85. These and further differences among various European and North American medical practices are set forth in Lynn Payer, *Medicine and Culture: Varieties of Treatment in the United States, England, West Germany, and France*, rev. ed. (New York, 1996).

[73] Moerman, *Meaning, Medicine, and the "Placebo Effect,"* 84.

[74] This passage is influenced by late classical medical writing, so in this case the "meaning" of jaundice would almost certainly resonate beyond England throughout European medicine.

> a stimulating drink, and often steam baths. Make him this soothing drink of sorrel[75] in wine and in water, and in the bath each morning drink it mulled. It helps the bitterness of the gall (1.42).[76]

Jaundice was probably an ongoing concern for early medieval doctors. Not only was there no defense against viral hepatitis,[77] but most patients probably consumed alcohol, which in an infected patient could lead to an increase in cirrhosis. In fact, the portion of the population who regularly sought medical care was probably at even higher risk, since several of the herbs called for in Old English medical texts may be hepatotoxins.[78] Several features of this remedy indicate the cultural significance of jaundice. First, there is a statement of the seriousness of the disease—an "efficacy statement," but this time about the condition, not the treatment. Second, the various symptoms are listed, clarifying that this set of somatic sensations qualify as a reified "disease" (*adl* in Old English) rather than unspecified swelling or pain. Instructions for treatment follow: bloodletting (less common in early medieval medicine than in later medieval and early modern healing), bathing, and ingestion of a remedy, which we are told will work. The discussion of jaundice in *Bald's Leechbook* would have augmented the efficacy of its treatment. Naming a constellation of somatic manifestations and experiences endows them with meaning, which is intensified by the warning about the disease's seriousness. As with US patients taking blood pressure medication, the patient's belief that this disease is important can augment responses to medical intervention.

With regard to early medieval medicine, understanding cultural variation regarding the meaning of diseases gives us a way of discussing illness that does not differentiate between "real" pathologies and those stemming from elves or devils. Similarly to how I considered verbal and kinetic elements simply to be available (and apparently quite meaningful) treatment modalities, the identification of a set of symptoms as

[75] Cockayne and the *Dictionary of Old English Plant Names* understand *ompre* to mean "sorrel" (also called "dock") (*Rumex*); Doyle suggests "garden radish." Cockayne, *Leechdoms*, 109; Bierbaumer and Sauer, eds., *Dictionary of Old English Plant Names* (online), s.v. "ampre"; and Doyle, "Anglo-Saxon Medicine," 113.

[76] "Of geal adle sio biþ of þære geolwan cymeth great yfel. sio biþ ealra adla ricust. þonne geweaxeð on innan ungemet wætan þis sint tacn: þæt him se lichoma eall abiterað and ageolwað swa god seoluc, and him beoð under tungan tulge swearte ædra and yfele and him bið micge geolu. læt him of lungen ædre blod sele him oft styrgendne drenc stanbaðu gelome. Wyrc him ðonne stilne drenc of ompran on wine and on wætre and on þam baðe gewhilce morgene drince mylsce drincan sio gebet þa biternesse þas geallan." Cockayne, *Leechdoms*, 106, 108.

[77] Ancient DNA samples of the Hepatitis B virus (HBV) have been extracted from osteological remains, demonstrating that "humans throughout Eurasia were widely infected with HBV for thousands of years," although I know of no evidence specifically relating to early medieval England. Barbara Mühlemann et al., "Ancient Hepatitis B Viruses from the Bronze Age to the Medieval Period," *Nature* 557 (2018): 418–23. This is not to say that the illness state as the patient perceived it would have been identical to modern experiences, as viruses can mutate and humans under varying life circumstances and in different cultures can experience diseases differently. However, HBV's harmful effect on the liver would probably have remained consistent.

[78] For example, germander, dwarf elder, and celandine. Hasani-Ranjbar et al., "Systematic Review," 320; Pilar Jiménez et al., "Ebulin from Dwarf Elder (*Sambucus ebulus* L.): A Mini-Review," *Toxins* 7 (2015): 648–58; and Sylwia Zielińska et al., "Greater Celandine's Ups and Downs—21 Centuries of Medicinal Uses of *Chelidonium majus* from the Viewpoint of Today's Pharmacology," *Frontiers in Pharmacology* 9 (2018): 299.

"fiend-sickness" or "elf-shot" does not place the ensuing therapy beyond the pale of medical discussion.[79] A lengthy entry in *Leechbook III* chapter 62 sets out three possible treatments for "ælfadle" [elf-disease].[80] The second treatment in this chapter has an elaborate set of instructions for the gathering of *elenan* [elecampane] for the remedy—first it must be impaled with a knife on a Thursday after sunset, then the following dawn the doctor must cross himself or herself and pray in the church, then go in silence to gather the herb he or she had previously marked, sing specific prayers, dig up the plant, and bring it and the knife to the church. The elecampane and the knife must be placed under the altar until sunrise, then washed and combined with other herbs, boiled three times in milk, combined with holy water, have prayers sung over it, and be marked with a cross. Then the patient should ingest the infusion.[81] The remedy places extraordinary emphasis on kinetic and verbal elements (in the gathering of the herb as well as in the preparation and administration of the medicine). The elaborate nature of the preparations could certainly have signaled to the doctor and patient that this treatment would be highly meaningful. In this case, the linking of the kinetic and verbal components to the predominant medieval system of meaning, that of Christianity, would have augmented the efficacy. Religion and healing intertwine in many cultures, of course, as they did in medieval Europe.[82] What's more, these factors give the therapeutic intervention an excellent chance of initiating a somatic response in the patient, leading to an improvement in his or her illness state. Such illnesses and treatments can be studied and described without recourse to the category of "magic" or "superstition"—they are medicine.

Considering illness as a culturally constituted but somatically real state offers us a way to understand those treatments that do not pair illnesses and modalities which we regard as "magic." Although diseases associated with demonic pathogens often incorporate verbal and kinetic modalities in their treatment, the pairing is by no means exact. I have already discussed the remedy for abdominal pain which called for the healer to say a Latin phrase while holding a dung beetle and then to cast the insect over his or her shoulder. The pains in question have no indication that they arise from a demonic or any other external source; it's not elf-disease, just a tummy ache. The converse arises in *Leechbook III*, chapter 67, a series of remedies against "devil sickness"; while the first (and perhaps second) concoction calls specifically for holy water (which incorporates the verbal component of having been previously blessed) as an ingredient, the third does not: "An emetic against the devil, take a large handful of sedge and *gladden*; put in a pan. Pour on a full bowl of ale; boil away half. Rub twenty *libcorns*, add. This is a good drink against the devil."[83] The remedy is

[79] For belief in elves and their relationship to health and illness, see note 66 above.

[80] Clark Hall postulates "nightmare" for this, attempting to make medieval illness conceptions consonant with modern ones. John R. Clark Hall, *A Concise Anglo-Saxon Dictionary for the Use of Students* (London, 1894), 4th ed., reprinted as *Medieval Academy Reprints for Teaching* 14 (Toronto, 2000). For this discussion, I translate it literally, as "elf disease" (as does Bosworth-Toller).

[81] Cockayne, *Leechdoms*, 344, 346.

[82] See, for instance, Horden, "Religion as Medicine," as well as the rest of the essays in Biller and Ziegler, eds., *Religion and Medicine*.

[83] "Spiwe drenc wið deofle, nim micle hand fulle secges and glædennan do on pannan. geot micelne bollan fullne ealaþ on bewyl healf gegnid. xx lybcorna do on þæt. þis is god drenc wiþ deofle." Cockayne, *Leechdoms*, 354, 356.

phytochemical (even if the plants called for can no longer be confidently identified);[84] this treatment for devils operates with a modality identical to the drink for jaundice or other ailments which modern textbooks would list. Since the disease was seen as meaningful by the patient and doctor—since diabolical pathogens were an accepted part of the illness narrative—then numerous treatment modalities could be, and were, employed in its treatment. Herbal preparations could treat the devil just as verbal charms could treat stomach pain.

The Meaning of Healers

The physician, whether a modern MD or a medieval practitioner, is a crucial vector for creating and transmitting the cultural beliefs which provoke a meaning response in patients. My previous discussion of expectancy mostly considers the beliefs of the patient, but the doctor's convictions are almost as important. In a clinical trial where no information was directly conveyed to the patient about the likelihood of receiving an inert versus an active painkiller, reported pain relief decreased when the doctor administering the injection knew that the chemical was inert, as opposed to when the doctor was deceptively told the patient had a 50 percent chance of receiving the painkiller fentanyl.[85] Although the pronoun shifting in several of the Old English remedies presents an intriguing possibility that efficacy statements were meant to be said directly to the patient, their presence would matter even if they were only communicated to the doctor. Doctors' beliefs and behaviors have a potent impact on healing outcomes.

Although we know less about early medieval English physicians than we'd like, we have solid evidence of their existence. Stanley Rubin asserted that in early medieval England "the physician was clearly not regarded as a person with any particular claim to be noticed and recorded" and that his training would be entirely textual and perfunctory.[86] However, a few individuals are identified as a physician—*læce*—in early medieval England. Four names appear in *Bald's Leechbook*: Bald himself, who commissioned its compilation and who was probably a medical practitioner; Cild, who made the compilation and may have been one also; Dun, credited with a remedy for lung disease in 2.65; and Oxa, credited with two recipes in 1.43. In addition to the named healers in the medical materials are the repeated comments that the reader/physician is to prepare a concoction "as doctors know how," demonstrating not only the social reification of healers as an occupational category, but also that their shared knowledge could be assumed.[87] Debby Banham concludes that "the most likely readership for medicine in Old English would be Anglo-Saxon practitioners," so there must have been enough of them to spur the production of

[84] Meaney suggests that *glæddene* could be an iris species, or perhaps squill, and *lybcorn* could be cardamom. Audrey Meaney, "What Was *Lybcorn*?" in *Magic and Medicine: Early Medieval Plant-Name Studies*, ed. Carole Biggam, Leeds Studies in English New Series 44 (Leeds, 2013), 146–205.

[85] Moerman, *Meaning, Medicine, and the "Placebo Effect,"* 45.

[86] Stanley Rubin, "The Anglo-Saxon Physician," in *Medicine in Early Medieval England*, ed. Marilyn Deegan and Donald Scragg (Manchester, 1989), 7.

[87] For instance, *Bald's Leechbook* 1.35: "æfter þære wisan þe læcas cunnan wel [in the way that doctors know]." Cockayne, *Leechdoms*, 82. For the shared knowledge of medical practitioners, see Van Arsdall, *Medieval Herbal Remedies*, especially chapter 3, and Banham and Voth, "Diagnosis and Treatment," 169.

the several manuscripts of the *Herbarium* as well as other texts.[88] Doyle similarly argues that *Bald's Leechbook* and other medical texts demonstrate a specialized medical vocabulary, which he argues should "be seen as evidence for the existence of a body of practitioners."[89] In addition, legal and penitential texts examined by Stefan Jurasinski for sick maintenance sometimes require an assailant to pay the "læcefeoh" or "doctors-fee" for his victim. Such texts are largely based on biblical sources, but Jurasinski shows that the texts modify requirements for recompense for injury and sick maintenance in several ways particular to local customs. If doctors were not at least theoretically available, the obligation to pay for them would probably have been edited out.[90] Medical specialists, then, were a recognized category of people in early medieval England, whose labors might be expected to be beneficial to the patient. Whether their training was primarily textual, experiential, or both, whether they were associated with religious houses or with other communities such as royal courts, whether they were male or female, whether they were primarily seen as physicians or filled that role alongside other occupations—some individuals in early medieval England were identified as specialists in treating somatic pathologies.[91] This status would have played a role in initiating a meaning response in their patients.

Creating expectancy is only one way that physicians' behaviors and beliefs can influence their patients' meaning responses. John Haller has argued that "the healer is not merely an adjunct to treatment, but integral to the actual healing encounter—a placebo independent of the particular healing modality."[92] Haller identifies several aspects of a modern patient-doctor encounter that can create meaning responses: "confidence, level of interest, history taking, empathetic listening, encouragement, concern for the patient, eye contact, touch, belief, trust, frequency of meetings, and even the level of fee are all associated with positive therapeutic results."[93] Some of these elements are no doubt culturally specific, but we can cautiously consider that similar behaviors might have elicited positive patient responses in early medieval England as well. Howard Brody has also written extensively about the role of the doctor in placebo responses. Brody identifies four requirements, at least one of which must be accomplished for a meaning response:

1. The patient feels listened to by the physician;
2. The patient receives a satisfactory, coherent account of the illness;
3. The patient feels care and concern from the surrounding individuals;
4. The patient feels an enhanced sense of mastery and control over the symptoms.[94]

[88] Debby Banham, "Dun, Oxa and Pliny the Great Physician: Attribution and Authority in Old English Medical Texts," *Social History of Medicine* 24 (2011): 57–73, at 68.

[89] Doyle, "Anglo-Saxon Medicine," 257.

[90] Stefan Jurasinski, *The Old English Penitentials and Anglo-Saxon Law* (Cambridge, UK, 2015), 150–71.

[91] Monica Green examines evidence from later centuries and finds evidence for female practitioners even outside convents, although not for widespread access to the rational, theoretical works which presumably formed the basis of male medical training in schools. Even though we have no mention of female healers in early medieval England, their existence cannot be ruled out, especially in cloistered communities. Green, "Women and the Gendering of Medical Literacy."

[92] John S. Haller Jr., *Shadow Medicine: The Placebo in Conventional and Alternative Therapies* (New York, 2014), 78.

[93] Haller Jr., *Shadow Medicine*, 72.

[94] Brody, "Meaning and an Overview," 356.

These elements are also culturally specific, although I would speculate that many of them could have been obtained in early medieval England. We have few resources to reconstruct patient-physician interactions from that time, however. We have no idea whether healers usually made eye contact and engaged in active listening in such a way as to convey empathy, nor do we know their fee structures. Medicine practiced in monastic settings, as called for in the Benedictine Rule, would probably have involved communal support from "surrounding individuals," and we can hope that lay patients would have support from family and friends, but we do not know.[95] However, we can carefully infer some aspects of early medieval English clinical behaviors from the texts themselves, and these do align with modern recommendations for evoking meaning responses in patients.

First, though, I should address a genre of medieval literature that might suggest that early medieval English patients had few expectations that physicians would help them—miracle stories in saints' lives describing a saint's miraculous healing of an illness after the patient had unsuccessfully consulted doctors. Such narratives are familiar to most medievalists, so I will give just one example, from Bede's *Vita Cuthberti*. Chapter 32 describes Cuthbert's healing of a young man, "wasted away from a lengthy, severe disease [longae egritudinis acerbitate tabefactum]." Cuthbert's prayers, however, cure the illness, "which the laboring team of doctors could not do by mixture of ingredients [quam sollicita medicorum manus pigmentorum compositione nequiuerat]."[96] We might construe this as reflecting a sentiment that doctors and their work were fraudulent or ineffective, but Horden argues that such stories in fact provide evidence that healing was a recognized and respected profession. These *medici* "may have been caricatured, but they could not have been totally misrepresented. Their costly failures would not have been worth cataloging so heavy handedly if they did not offer a credible, popular alternative to a miracle."[97] I would also argue that narrative logic implies that the audience had some expectation that medical professionals could provide relief from suffering. If the recipients of the saints' healing interventions had consulted only obviously unhelpful characters, the drama of the saints' accomplishments would be seriously undermined. What is the miracle of healing an illness unless it has proven intractable by the means which the audience would expect to normally work?[98] If professional medicine had no social credibility, the stories would make little sense.

What can we deduce happened at an early medieval English patient's medical visit? The texts give us glimpses of diagnostic practices such as palpation. *Bald's Leechbook* 2.19 instructs the physician attempting to diagnose liver ailments to palpate. If it is a "wounded" liver, "when you put your hand on him on the liver then he

[95] Maria A. D'Aronco, "The Benedictine Rule and the Care of the Sick: The Plan of St Gall and Anglo-Saxon England," in *The Medieval Hospital*, ed. Bowers, 235–51, describes the Benedictine emphasis on healing; Stephanie Hollis cautiously postulates that *Bald's Leechbook* was made for a monk who also worked at Alfred's court. Hollis, "The Social Milieu," 11–16.

[96] *Two Lives of Saint Cuthbert: A Life By an Anonymous Monk of Lindisfarne and Bede's Prose Life*, ed. and trans. Bertram Colgrave (Cambridge, UK, 1940; repr. 1985), 258.

[97] Horden, "Sickness and Healing," 417.

[98] Banham also traces interactions between saints and physicians in miracle stories. "Medicine at Bury," 240–41.

feels very sore, and the man will be very tender."[99] On the other hand, if the patient suffers from a hardened liver, *Bald's Leechbook* tells the physician in 2.21, "when you set your hand above the liver then it is heavy as a stone and is not sore."[100] Palpation indicates which condition the patient suffers from and must have been a necessary diagnostic tool, then as now. Touch, which Haller identified as an important part of the modern patient-doctor interaction, formed part of that interaction in early medieval England, at least in some circumstances.

Diagnosis also required conversation, another requirement for a modern meaningful healing encounter. For unspecified side pain, *Bald's Leechbook* 2.46 requires the physician to take some medical history from the sufferer: "ask the man who suffers this whether he was ever struck or stabbed on that side, or whether he fell long before or was broken. If that was the case, then he can easily be treated."[101] Asking for a narrative of relevant life experiences empowers the patient to tell his or her story—an act that can itself be therapeutic.[102] Certainly, such conversation has the potential to create or reinforce a rapport between healer and sufferer, especially if the healer could then deliver the good prognosis to the patient. It also reinforces the sense of the physician's competence when important questions can be asked, and treatment suggested based on their answers.

Pre-Conquest English medical texts (and, one assumes, practitioners) focused on therapeutic intervention more than on somatic and pathological theory, which, as previously noted, has led historians to contrast them with "rational" medicine based on humoral theories such as those of Galen and Hippocrates. *Bald's Leechbook* and *Leechbook III* are no exception. However, their atheoretical nature can be overstated. The Old English medical texts do sometimes give explanatory statements about disease, drawing on humoral theory—and, as Brody points out, hearing a doctor give a "satisfactory, coherent account of the illness" might have helped elicit a placebo response.[103] To give just a single example, *Bald's Leechbook* offers an explanation of stomach ailments that takes a few possible factors into consideration: physiology, in the stomach's proximity to the heart and spine which allows evil humors to gather into it; and exogenous pathogens, as we are told intestinal worms can find their way up into the stomach and even the heart, causing illness and death. Whatever its origin, stomach illness can present in an array of somatic expressions including mental frenzy, skin diseases, and urinary issues.[104] The passage is based on a late classical text, so this belief was not unique to early medieval England,[105] but the Old English text's decision to include it argues that the physicians

[99] "þonne þu him þine hand setest on þa lifre þonne gefelþ he swiþe micel sar and biþ se man swiðe mearo." Cockayne, *Leechbooks*, 202.

[100] "þonne þu ðine handa setst ufan on þa lifre þonne beoð swa hefige swa stan and ne biþ sar." Cockayne, *Leechbooks*, 204.

[101] "ahsa hwæþre þone mannan þe þis þrowað hwæþer he æfre wære slegen on þa sidan oðde gestungen oþþe hwæþer he lenge ær afeolle oðde gebrocen wurde. gif hit þæt wære þonne bið he þy eaðlæcna." Cockayne, *Leechbooks*, 258.

[102] Brody, "The Placebo Response: Recent Research."

[103] Brody, "Meaning and an Overview," 356.

[104] Cockayne, *Leechdoms*, 174–78.

[105] Doyle examines the passage's dependence on the *Practica Alexandri Latine*, a Late Latin translation of Alexander of Tralles's Greek work. Doyle, "Anglo-Saxon Medicine," Appendix, 172.

making the book believed such explanations worth knowing. Indeed, a doctor's ability to explain the illness state to a patient, its origins and progression as well as its treatments, potently evokes meaning, as Brody and Haller point out. The humoral medicine alluded to is not especially nuanced, but it did not need to be. From the patient's perspective, an early medieval physician telling his or her patient, "You've got an excess of bad humors in your stomach," and proposing a course of dietary adjustments and herbal drinks, would be no less meaningful than the twenty-first-century doctor telling his or her patient, "You have acid reflux," and prescribing a course of dietary adjustments and a proton-pump inhibitor. Texts remaining from early medieval England indicate that some professional healers were aware of the therapeutic value of disease explanations. Again, we need not assume these doctors knew exactly how such statements worked, only grant that the doctors could have been observant enough to notice that they did. In any case, the texts contain, and probably the physician conveyed, enough of a structural understanding of the body to help articulate and give meaning to somatic experiences, and thereby augment therapeutic interventions. Patient-physician encounters, then, as we glimpse them in the Old English medical texts, followed several patterns that probably would have enhanced meaning and therefore somatic response from the sufferer.

Conclusion

All elements that modern researchers have identified for instigating a placebo response can be glimpsed in early English medical texts: conditioning, conscious expectancy, unconscious cultural beliefs about treatments and illnesses, and meaningful encounters with physicians. What would the placebo responses thus provoked have meant to these patients in terms of improvement? How much or how often would the illness state improve? The answer depends in part on the pathology in question. As described earlier, meaning responses arise when a body's biological mechanisms (immune system, analgesic neural pathways, gastric secretions, and the like) are activated. If the body has no mechanism to remedy a pathology, then there can be no meaning response. Hearing loss stemming from age or from head injury, for instance, could not have been treated effectively in early medieval medicine. There is very little modern study on the use of placebos to treat severe infection, for obvious ethical reasons, but we can speculate that a placebo response might not be rapid enough to be efficacious against, say, typhus (if it reached early medieval England) or septicemia. On the other hand, many studies of placebo responses have been conducted on pain management, and insofar as many pathologies involve pain as a symptom, treatment would probably have brought about some improvement in the illness state. Osteoarthritis, which is well documented in the Middle Ages from the osteological record, may not have been curable by remedies such as those outlined in *Bald's Leechbook, Leechbook III*, and the OEH, but the pain stemming from the condition could be greatly relieved—a positive result for the sufferer to be sure.[106] In the case of issues such as migraine headaches, pain relief would

[106] Charlotte Roberts and Keith Manchester, *The Archaeology of Disease*, 3rd ed. (Ithaca, NY, 2005), especially chapter 6. For the history and global spread of many infectious diseases, see Ethne Barnes, *Diseases and Human Evolution* (Albuquerque, 2005).

effectively be a "cure." For more slowly acting illness such as rhinoviruses, a meaning response to treatment could certainly have augmented the body's immune mechanisms, and symptoms such as cough, sore throat, and headache could also be alleviated while the patient fought off the illness. In addition, some neurological disorders leading to mental illness such as depression have quite a good chance of being improved by a meaning response.[107] If these pathologies were active in early medieval England, then healers had treatments that could help them through the meaning response.

Since Henry Beecher's groundbreaking study on placebo analgesia was published in the 1950s, much discussion of placebo effectiveness rates has cited his findings that a placebo response could be expected about 30–35 percent of the time.[108] More recent data revise this number upward. In a circumstance where the potential for a placebo response comes primarily from classical conditioning, the number of patients responding positively could be close to 100 percent, and B. Colagiuri et al. found that "the magnitude of socially driven placebo analgesic effects was comparable to direct conditioned effects."[109] Andrew Geers et al. reported nearly 50 percent response to placebo caffeine; Arthur and Elaine Shapiro cite response rates of 50–60 percent for "depressions, insomnia, and pain"; and David Morris states that response to placebo analgesia can range up to nearly 100 percent "depending on the conditions of the trial."[110] The highest response rates appear not in the double-blind trials where patients know that they might get an inert treatment (which is not meaningful in contemporary medicine), but rather in deceptive trials, where the patients are told that they *are* receiving a pharmacologically active agent, by an administrator who also believes this to be the case. This circumstance seems closest to that of early English medicine, where both physician and patient expected the remedy to bring about a positive change; therefore, meaning response rates for early medieval patients were probably on the high side.

We can postulate, then, that *at least* half (and possibly even more) of the patients seeking treatment from an early medieval physician would see discernible somatic improvement from the remedy prescribed—even if none of the ingredients had any chemical effect. Of course, in many cases the meaning response would have augmented pharmacologically active agents in the prescribed herbal remedy. Meaning responses do not operate only in the absence of chemically active agents, they work alongside them; the situation is both-and, not either-or. Pharmacologically active and pharmacologically inactive treatments work in harmony with the human tendency to meaning response as a biological phenomenon. Nor need we eliminate

[107] Morris, "Placebo, Pain, and Belief," and Moerman, *Meaning, Medicine, and the "Placebo Effect,"* especially chapter 7, "Psychotherapy: Placebo Effect or Meaning Response?," 89–99.

[108] Henry K. Beecher, "The Powerful Placebo," *Journal of the American Medical Association* 159 (1955): 1602–6.

[109] Brody, "The Placebo Response: Recent Research," 650, and B. Colagiuri et al., "The Placebo Effect: From Concepts to Genes," *Neuroscience* 307 (2015): 171–90, at 177. In the experiment Colagiuri described, the subjects observed a demonstrator who reported pain relief when a placebo electrode was supposedly activated. When the subjects were put through pain simulation themselves, they also reported analgesia from the placebo electrode's "stimulation."

[110] Geers et al., "Placebo Expectations"; Arthur K. Shapiro and Elaine Shapiro, "The Placebo: Is It Much Ado about Nothing?" in *The Placebo Effect*, ed. Harrington, 12–36; and Morris, "Placebo, Pain, and Belief," 188.

from consideration certain illnesses and therapies on the basis that they are "magical" and not medical; a robust understanding of how healing and meaning intertwine puts various disease states and treatment modalities within the categories of pathologies and their remedies. Of course, this study's conclusions have applications far beyond that of early medieval England, although I have focused on those texts in particular. All early medieval medicine can be reevaluated in this light for what it can tell us about the interaction among embodied illness experiences, doctors, and medical culture in medieval Europe.

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