

Johannes Kepler's *Somnium* and the Witches' Night- Flight¹

Abstract

This article explores the uses of the witches' night-flight in Johannes Kepler's *Somnium* (1634). It situates Kepler's engagement with the motif in the broader context of debates on the reality of the night-flight among early modern witch theorists, including Kepler's contemporary and friend, Georg Gödelmann. It proposes that Kepler understood the night-flight as a phenomenon with a disputed reality status and, as such, an appropriate imaginative space through which to pursue the thought experiment of lunar travel. Consequently, it suggests that we ought not to dismiss Kepler's engagements with the figure of the witch as a vestigial medieval superstition (itself a problematic contention), but rather an interest characteristic of his age, and that we might find in the speculations of witch-theory the very beginnings of science fiction.

1. With thanks to the intellectual generosity of Dale Kedwards, and the anonymous reviewers of this article – needless to say, any errors that remain are my own.

Johannes Kepler's *Somnium* is a short thought experiment, originally conceived as a student dissertation at Tübingen in 1593, reworked with the addition of a narrative frame in 1609, with extensive notes added by 1630, and published posthumously by Kepler's son-in-law in 1634. It transports an observer to the moon from where the motions of the earth are visible to the inhabitants of this strange new world. A humorous demonstration of Copernicanism, the *Somnium* is presented by Kepler in his notes as in part a scholarly joke – to any observer, the world on which they stand appears to be the centre of the universe. The work is centred also on the impossibility of direct experiential proof of Copernicus's thesis (the astronomer, after all, does not live among the stars), and explores Copernican principles through a flight of the imagination. This is literalised through a frame which recounts the flight of a daemon from the earth to the moon.

Kepler's juxtaposition of the scientific and the d(a)emonic has sat curiously with twentieth and twenty-first-century commentators, and the *Somnium* has often been located in a broader narrative of scientific progress, a point of rupture with the pre-rational superstitions of pre-

modernity. In the introduction to his English translation of the *Somnium*, Edward Rosen locates Kepler in just such a transitional moment:

The *Dream* was not the only book in which Kepler covered his contributions to science with unconventional wrappings repulsive to many readers. But the greatest minds of the succeeding generations tore those wrappings apart and benefited from Kepler's discoveries. In those days acknowledgement of such indebtedness was not the universal practice. To track down the influence of Kepler's *Dream* on the soaring scientific advances of the later seventeenth century would throw added light on the tortuous process by which the modern mind came into being. (Rosen, *Kepler's Somnium* xxii; hereafter *Dream*)

Rosen's 'unconventional wrappings,' which obscure Kepler's contribution to, and yet are part of the painful formation of, 'the modern mind,' are the narrative frame of the *Somnium*. Kepler recounts his dream of an old book which tells the story of Duracotus, the son of the Icelandic witch, Fiolxhilde. In childhood, Duracotus is sold by his mother to a trader in a fit of rage, following his destruction of her magical herbs. Duracotus travels across Scandinavia and spends a time with Tycho Brahe at his observatory on Hven (like Kepler himself), prior to his return to Iceland and reunion with his mother. In Iceland Fiolxhilde tells Duracotus of her own travels with a daemon who can rapidly traverse great distances and take a human devotee anywhere on earth, and even as far as the moon. The two summon Fiolxhilde's daemon and an account of the lunar flight follows, preceding a description of the moon and the motions of the earth. In his notes Kepler clarifies the allegorical function of the work: that the daemon is to be interpreted as the spirit of astronomy and the twenty-one occult symbols by which Fiolxhilde summons him are "astronomia Copernicana" (Copernican astronomy) (Kepler, *Somnium* 36; *Dream* 51).

Although in subtler terms than those proposed by Rosen, discussion of the framing narrative of the *Somnium* has for the most part similarly situated the author at a historical interstice. The supernatural frame of the *Somnium* is often read in relation to its apparent tension with Kepler's use of scientific discourses more recognisable to modern eyes.² Most influentially, we might note Dean Swinford's study of Kepler's engagement with medieval supernatural elements (most notably, the Neoplatonic or mystical dream vision), which Swinford understands as a productive point of tension; a tool for thought

2. Lambert 66–105 (with a brief discussion of Kepler's folkloric engagements 79–80); Swinford, *Daemon's Gate*. The distinction made between Kepler's scientific and folkloric interests finds one of its earliest articulations in Nicolson, *Science and Imagination* 74, 77; Nicolson, *Voyages* 67–70.

3. Swinford, *Daemon's Gate* 105. See further, on the intellectual contexts of Kepler's work, including his engagement with Plutarch and Lucian, Christianson 79–90. Christianson's is notable as an account which situates Kepler's mother's trial in relation to the author's intellectual life without the distinction between science and superstition that we find elsewhere, although this account is not concerned with witch-theory as such.

4. The fullest discussion of the relationship between witchcraft and science in the long period 1450–1700 is in Clark, *Thinking with Demons* 151–311. See also Clark, "Scientific Status" 351–74.

5. Lambert. See further, Nicolson, *Voyages* 69–70, which notes that Kepler's *Somnium* was written in a different tradition than, for example, Frances Goodwin's *The Man in the Moone* (1638), in which the protagonist travels to the moon in a flying machine pulled by wild swans, and Francis's article in this issue.

6. The fullest account of the trial of Katharina Kepler in relation to Johannes Kepler's biographical and intellectual contexts is Rublack. For a brief assessment of Kepler's allusions to witchcraft in the *Somnium* see Rosen, "Kepler and Witchcraft Trials." While Rosen understands Kepler's engagement with witch-theory as minimal, my analysis suggests that this interest is a far more pervasive, indeed structuring, presence throughout the work.

and point of origin for the scientific *fabula*, that is, early science fiction.³ Yet Kepler's daemon and the narrative possibilities it traces appear to me to be the product of another discourse altogether – one which was by no means at odds with the scientific interests of Kepler's age. I refer to what Sydney Anglo calls "the literature of witchcraft", material which although it certainly has its precursors in medieval demonology and theology is not medieval *per se* (Anglo, 1–31, esp. 2). The age of the witch-theory (and witch hunting), after all, is situated most fully not in the medieval but in the early modern period.

The central conceit of Kepler's allegory rests on the witches' night-flight, a feature of early modern witch treatises, which attracted considerable attention in the late sixteenth and early seventeenth centuries from both witch-sceptics and proponents of orthodox witch-theory, both Protestant and Catholic. Discussion of witchcraft, as it related to the workings of demons, was situated within the study of natural philosophy as a mainstream component of early modern European intellectual culture.⁴ A surfeit of demonological and witch treatises were written, published, and circulated in Germany and the Empire in the period in which Kepler was active, and the following article does not aim to be exhaustive. Rather, it touches on those works and authors which are cited in the *Somnium*, were produced within Kepler's circle, or are known to have been particularly influential in early modern Europe. Sources and analogues proposed are for the most part intended as initial points of exploration. Although distinct from the flying machines that we find in other early modern imaginings of the lunar passage, such as those by Frances Goodwin or Cyrano de Bergerac, we might similarly understand Kepler's engagement with the witches' night-flight as the use of available analogies and metaphors that Ladina Bezzola Lambert has suggested were fundamental to early modern astronomical imaginings.⁵ Yet the *Somnium* rests not on a literary metaphor but on a live subject of debate in contemporary legal and theological culture, explicitly associated with the boundaries of fact and fiction.

Kepler's engagement with witch-material has been most fully treated on the biographical level. His explanation of his representation of Fiolxhilde in his notes is often read in relation to the charges faced by his mother Katharina Kepler, between 1615 and 1622, for *maleficium*.⁶ A quick-tempered woman, who appears to have made powerful enemies, and who, what is more, spent her childhood in the care of an aunt prosecuted for witchcraft, Katharina's case was a difficult one, and Kepler was heavily involved in her defence. He makes a num-

7. For this tension in relation to early science fiction see Suvin 103. Suvin aligns Kepler with a broader movement after Copernicus, by which science fiction, as we find throughout its history, was predicated on expulsion from "official" culture, specifically in terms of its interest in inter-planetary travel in an intellectual context which broadly rejected the full implications of Copernicanism. See further Swinford, "The Lunar Setting" 36; Evans 165–66.

ber of direct allusions to his mother's trial, and certainly appears to have understood his construction of Fiolxhilde to have influenced the charges met by Katharina. He writes that her case, and his thesis, set the barbershops of Tübingen (a notable site of gossip) alight with rumour (Kepler, *Somnium* 32; *Dream* 40). However, there is more of interest as regards Kepler's demonological engagements than biographical parity alone. This article explores the cultural meanings that underpin Kepler's representation of Fiolxhilde and her daemon, and the central role of the witches' night-flight in Kepler's imagining of the lunar passage. It suggests that if we seek to read Kepler in relation to the genre tropes and contexts of early science fiction, we find this most illuminatingly in his negotiation of official and unofficial cultures – not simply in relation to the Copernican controversy but the witch and her d(a)emon as they appear in contemporary witch-theory.⁷

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Although this approach runs the risk of writing a footnote to a footnote, it is within Kepler's own endnotes to his *Somnium* that analysis of his engagement with witch-theory must begin, for it is here that he makes explicit notice of his use of the witches' night-flight. In note 60 Kepler makes an overt reference to transvection, the demonic movement of a body or object from one place to another, as a feature of contemporary witchcraft cases, employed as an analogy for the flight to the moon with which the *Somnium* is concerned:

Si verum est, inquam, quod de Sagis tradunt pleraque tribunalia, quod illæ transportentur per aerem: erit forte & hoc possibile, vt corpus aliquod terris divulgum importetur in Lunam.

(If it is true, as most courts hold with regard to witches, that they are transported through the air, I say that maybe it will be possible, also, for some body to be violently removed from the earth and carried to the moon) (Kepler *Somnium* 40, early modern orthography retained; *Dream* 65)

The reality status of the night-flight occupies a prominent place in what Stuart Clark has termed the "methodological doubts" about the evidence mobilised in support of witch-prosecutions, which coloured the witch-scepticism that emerged with particular force in Germany in the late sixteenth century. The broad timeframe of Kepler's

work on the *Somnium* sits particularly interestingly in relation to this movement. The narrative frame of the project was added in 1609 when the influence of the sceptical work of Johann Weyer (*De Praestigiis Daemonon*, 1563) was still relatively strong; with notes added in the period of Weyer's waning influence, when sceptical authors were less concerned with the classification of witch-phenomena than the legality of the trials themselves.⁸ I suggest that throughout the development of his work Kepler was alert to the controversies surrounding the night-flight, in relation to which his caveat "si verum est" (if it is true), sits suggestively, as does his location of the phenomenon, and its uncertainty, in the broader context of the contemporary legal system.

As an analogue to his dream of lunar travel, and indeed, a conceptual aid to the reader, it need not necessarily have mattered for Kepler whether the phenomenon was understood to be real or imaginary: demonic transvection was part of the broader cultural vocabulary available to him for representing flight. Yet he may very well, I suggest, have been thinking with the controversy itself. Within Kepler's circle was the Protestant jurist Georg Gödelmann, who in the third book of his *Tractatus de Magis, Veneficis et Lamiis* (1601) situated the more apparently fantastical dealings of witches with demons beyond the purview of the law.⁹ Among this, he included the flight of the witch (the *lamia*). Critiquing the orthodox position concerning the reality of the witches' night-flight, he writes:

cum autem haec de corporali volatu & baiulatione Lamiarum in aere, & comessionibus cum suis Dæmonibus, nocturnisque tripudiis, nullis critiriis, sive normis certitudinum, notitiis videlicet communibus, universali experientia, Syllogismi bona consequutione, vel verbo Dei expresso [...] sint confirmata.

(‘Moreover, these [accounts] of bodily flight and carrying of witches through the air, and feasting with their demons and nocturnal dances, might be proven by no criteria, or standard of certainties, common notices, universal experience, honest investigation of syllogism, or plain word of God.’) (Gödelmann, *Tractatus* Lib. II, Cap. IV, § 14, early modern orthography retained)

For Gödelmann the reality of the night-flight is discredited by its association with classical precedents invoked elsewhere by orthodox witch-theorists, the fauns and nymphs of Virgil, and by its apparent

8. For an account of German scepticism during this period see Clark, *Thinking with Demons* 203–10; Clark, 'Glaube und Skepsis'.

9. For an account of Gödelmann's position, see Lorenz; further, Clark, "Protestant Demonology" 75.

affinities with medieval romance content, such as the flight of the serpentine fairy, Mélusine (Gödelmann, *Tractatus* Lib. II, Cap. IV, § 15, 17). Of those who believe in the reality of such encounters, Gödelmann writes, “eas in profundum somnum incidere, & a Diabolo forti quadam imaginatione phantasiis eiusmodi occupari” (they fall into a deep sleep, and by the power of the devil certain people are overcome by imagination and fantasy of this sort, Gödelmann, *Tractatus* Lib. II, Cap. IV, § 15). The delusions of old women deceived by demons, Gödelmann suggested that these cases might be a matter for medical treatment or religious counsel rather than legal prosecution.

Gödelmann was indebted to an influential vein of scepticism put forward in Weyer's *De Praestigiis*.¹⁰ The witches' night-flight is presented by Weyer as a prime example of a demonic trick practiced upon old women:

uti fere omnes illarum praeter naturam actiones, imaginariae saltem uidentur: & propterea questionibus adactae, flammisquae propinqua, sua aperte confitentur flagitia, per somnum uel simulachrum illis solummodo cognita. Idipsum confirmatur in Decretis, ad hunc modum. Quaedam mulierculae inseruientes satanae, daemorum illusionibus seductae, credunt se alia nefanda quoque agere, puta paruulos a lacte matris auellere, assare & comedere: domi per caminos seu fenestras intrare, & habitantes uarijs modis inquietare.

(Almost every one of those deeds contrary to nature seems to be imaginary, so that when questioned and close to the flames they openly confess faults they know only through dream or apparition. The same thing is confirmed by the Decretals. Certain weak foolish women, servants of Satan, seduced by the devil's illusions, think they can perform many other wicked acts, like tearing babies from their mother's breasts, roasting them and eating them; or entering houses by chimneys or windows in order to harass the inhabitants in various ways). (Weyer, *De Praestigiis Demonum* 219–20, early modern orthography retained; translation modified from Monter, *European Witchcraft* 44)

In his critique of the reality of the flight, Weyer draws on an important piece of medieval canon law: the *Canon Episcopi*, which denounces the belief of certain wicked women, seduced by the illusions of demons and by phantoms (“demonum illusionibus et fantasmatis seduc-

10. For a brief discussion of Gödelmann's debt to Weyer, see Clark, *Thinking with Demons* 203–04.

11. *Corpus Juris Canonici* 1030. My translation. See also, MacNeill and Gamer 331; Kors and Peters 189. The meaning of the second name given in the *Canon*, Herodias, remains obscure – it has been suggested, variously, that it is a reference to a Germanic deity, or the biblical wife of King Herod. See further, Peters, *The Magician* 71–78.

12. We find an early example of this combining in John of Salisbury's treatment of the *Canon Episcopi* in his *Policraticus*. This appears in the context of a warning against the political interpretation of dreams, and the *Canon Episcopi* is invoked as a demonstration of the foolhardiness of belief in their revelatory power. John of Salisbury, *Policraticus* 87. Although John of Salisbury's engagement with the potentially deceptive power of dreams has been discussed as a precedent for Kepler, as far as I am aware, the common engagement of both with material related to the *Canon Episcopi* has not been noted. For the former, see Swinford, *Daemon's Gate* 69–90.

13. Throughout this article, I refer to the primary author of the work as Institoris. For an overview of controversies, and evidence, concerning the work's authorship, see *Malleus* i, 103–21.

tae”), that they had ridden (or flown) by night on beasts in a hunt with Diana or Herodias, traversing great distances.¹¹ This first appears in Regino of Prüm's *Libri de synodalibus causis* (c. 906 CE), and in the twelfth century was integrated in Burchard of Worms's *Corrector*, and subsequently Gratian's *Decretum* – the standard textbook for canon law across medieval Europe. It is this body of canon law to which Weyer refers, “confirmatur in Decretis”. The *Canon* was influential among proponents of the sceptical position: Gödelmann quotes it similarly as a point of confirmation (*Tractatus* Lib. II, Cap. IV, § 26).

As is conventional across works of European witch-theory, Weyer's representation of the night-flight combines Diana's hunt with the violent domestic disruptions of the classical *strigae*.¹² This is in keeping with Weyer's immediate source (and named point of critique), the *Malleus Maleficarum* (1486), the witch-hunting manual of Heinrich Kramer, also known as Henricus Institoris (Heinrich the inquisitor), co-written with another Dominican inquisitor, Jacob Sprenger.¹³ Perhaps the single most influential codification of orthodox witch-theory, the *Malleus* represents an important vehicle for the concept of the night-flight in early modern Europe. Thirteen editions were published between 1487 and 1520, and sixteen between 1547 and 1669, and while the print runs were not large, editions circulated in the major cities of Germany, France, and Italy (Peters, “The Medieval Church” 238–41). Although the rampant misogyny of the work has been understood as the stuff of paranoid fantasy, the *Malleus* (although certainly representative of a paranoid antifeminism) was concerned with what its authors understood to be material realities. The worldview of the *Malleus* is rooted in the Thomist natural philosophy of its age, concerned with the limits of demonic causation within nature and the distinction between demonic illusions and demonic effects.

The challenge of the *Canon Episcopi* is pre-empted in the very first *quaestio* of the *Malleus* (written in scholastic form, the work details oppositions prior to constructing propositions). Of Diana's company, Institoris argues that “et quia sepe fantastice et imaginariae talia solummodo fiunt, ideo et illi errantes de omnibus aliis effectibus ita fieri iudicant” (adherents of the error think that because it is stated that such things happen only fantastically in the imagination, that is the case with all other effects) (*Malleus*, i, 219; ii, 45). Although the flight of the *Canon Episcopi* is a demonic imagining, this does not impugn the reality of the witches' night-flight. Within the worldview of the *Malleus* the night-flight is a material effect achieved through the activities of demons acting within the bounds of nature. Institoris poses

14. This phrasing is rooted in a scholastic adaptation of Aristotle's views on matter, where changes in category are referred to as 'motion'. As Makay notes, "This leads to the frequent use in the *Malleus* of the (now) odd-sounding expression 'move in location' (*movere localiter* or 'loco-motion') to specify change in the category of 'position.'" *Malleus* i, 30.

15. John Lear suggests that the *Somnium* "made amply clear [Kepler's] disbelief in the existence of witches". *Kepler's Dream* 36, n. 71. This perception, articulated in a footnote, is not borne out in Lear's analysis itself, and, as Lear notes, Kepler does not question the reality of the crime in his letters (Lear understands this to be a "politic" position). For a critique of Lear, see Rosen, "Kepler and Witchcraft Trials".

that the seemingly supernatural movement of objects is a result of the local application of the demon's powers with God's permission: "potest deo permittente res localiter mouere et ex rebus coniunctis dolerem vel aliquam qualitatem producere" (with God's permission he has the power to move objects in location or to bring about some quality) (*Malleus* i, 228; *Malleus* ii, 56).¹⁴ Demons act within natural laws but while they can extend them, they cannot break those laws. This rests on a familiar early modern distinction between *miracula*, which suspend natural laws, and *mira*, wonders which only appear to do so (Clark, *Thinking with Demons* 154). Demons can act on, or move, objects, but they cannot change their underlying composition: animal transformation, for example, is understood in the *Malleus* as a demonic illusion, conceptualised as the demonic movement of images in the imagination rather than material change (*Malleus*, i, 434–38; *Malleus*, ii, 282–88).

As Clark has observed, witch-belief and witch-scepticism were by no means two discrete intellectual positions: both were concerned with the question of what is, and is not, possible in terms of demonic effect within nature. Individual theorists engaged with a process of deliberation underpinned by a common rationale: the differentiation between demonic and non-demonic illusions, and demonic and non-demonic material effects. In the writings of different theorists, we encounter different limits – perhaps with the exception of Jean Bodin, who in his response to Weyer deemed that nothing is impossible for demons; and the sceptic, Reginald Scot, for whom everything was (Clark, *Thinking with Demons* 195–213). Indeed, Weyer's critique of the reality of the night-flight does not appear to be a critique of transvection in and of itself, but rather the mechanism of flight as represented in the *Malleus*: the application of an ointment made from unbaptised infants. Weyer notes that such a natural property cannot be sensibly ascribed to the flesh of dead children (*De Praestigiis Demonum* 219; an argument used by Gödelmann also, in *De Tractatus*). Notably, Kepler's understanding of transvection (although expressed in the conditional) depends on the same natural philosophy put forward in the *Malleus*: the witch does not achieve flight through her own powers but through the powers of a demon exercised within natural limits.

There is no evidence of Kepler's overt witch-scepticism in the *Somnium* or indeed elsewhere in his writings.¹⁵ Although in his earliest letter treating the accusations against his mother Kepler expresses the possibility that confessions concerning the demonic pact may be delusions produced under fear of torture, he does not appear to reject the phenomenon altogether; and (as far as I am aware) he leaves us no ac-

16. Like the night-flight the demonic pact of the witch was an object of scepticism for Weyer, who held it to be a material reality only in association with clerical, male, practitioners of magic, but otherwise, a demonic delusion. In his letters, Kepler suggests that the pact may be delusory in confessions made under the conditions of torture, but there is no evidence of his rejection of the construction as a whole. Weyer, *De Praestigiis Demonum* 219; Kepler, *Gesammelte Werke* xvii, 154.

count of his thoughts on the night-flight beyond the *Somnium*.¹⁶ However, Kepler did seem to be familiar with the controversy surrounding the night-flight and its association with dreams: of course, Kepler's use of the witches' night-flight, and the closely analogous lunar passage, is in the context of a dream. He writes of the preferences of Fiolxhilde's daemon in terms strikingly similar to Weyer's and Gödelmann's victims of demonic dreams (the success of the Weyerian position lives or dies depending on the profile of the witch as an elderly woman, a perception in keeping with the stereotypical witch of the *Malleus*):

inprimis nobis aptæ sunt vetulæ exsuccæ, quibus inde a pueritia trita est ratio, hircos nocturnos, aut furcas, aut trita pallia inequitandi, trajiciendique per immania terrarum spacia.

(We especially like dried-up old women, experienced from an early age in riding he-goats at night or forked sticks or threadbare cloaks, and in traversing immense expanses of the earth.) (Kepler, *Somnium* 5; *Dream* 15)

Although this description is largely conventional (indeed, so conventional by this period that we might understand it to be un-sourced), Kepler's description of the night-flight comes very close to that found in Gödelmann. In *De Tractatus* we read of a popular belief in the night-flight of witches on the Calends of May to the Blocksberg, also known as Hexberg (Witch Mountain), with demons in the form of goats and other animals:

lamias totius Germaniæ certis unguentis illitas, noctu Calendar Maii in montem Bructerorum, vulgo Blocksberg & Hexberg partim a familiaribus suis dæmonibus & amasiis qui præstigiosam formam hirci, porci, vituli & similis animalis induunt, brevissimo temporis spacio baiulari, partim furca, baculo, aliove instrumento vehi, & deinde noctem totam ludis, jocis, comestationibus & choreis, cum amasiis suis consumere.

(The witches of all Germany are anointed with a certain ointment, by night on the Calends of May on Mount Bructerorum, commonly called Blocksberg and Hexberg, some carried in the shortest space of time by their familiar demons and lovers who are magically disguised in the form of he-goats, pigs, calves and similar animals, others conveyed by fork, broomstick, or other tools, afterwards to spend all night with

17. This description also shares common features with one of Kepler's stated sources in the *Somnium*, Martín del Río, who – writing against Weyer, in defence of the reality of the witches' night-flight – included the he-goat and the pitchfork among the witches' means of flight, although del Río's list is more extensive than that of Kepler and Gödelmann. Maxwell-Stuart 92. Notably, del Río cites Gödelmann directly (as a point of refutation) throughout his work, and there may be a direct debt here. For one of a number of examples, see Maxwell-Stuart 16.

their lovers, with games, sports, revelry and dancing.) (Gödelmann, *Tractatus* Lib. II, Cap. IV, § 2)¹⁷

Kepler appears to have understood the connotations of his allusion to the night-flight in relation to the contexts of *maleficium* noted by Gödelmann, which centre on the witch's demonic pact. In his notes Kepler observes of this passage: “en Aulida, & foedus, quod Trojam perdidit. Mihi vero tantum jocari, erat animus; & jocosè argumentari” (here is Aulis and the covenant which ruined Troy. Yet it was my intention merely to joke and to reason jocularly) – an allusion to the later use of his engagement with witch-content by his mother's detractors (Kepler, *Somnium* 40; *Dream* 65). Kepler's classical reference to the covenant reads as wordplay, a recollection of the pact between the demon and witch of the hard-line witch-theorist – play that verges on humour, despite the personal anxieties this note betrays. Indeed, it is probably the omission of features like the sabbath, the demon-lover, and *maleficium* (when compared to Gödelmann's fuller account, if we take this as source or at least demonstrative of a source tradition) that allows Kepler to use the night-flight as a type of joke. Further, we might note that in the final instance the joke is not on the figure of the elderly witch but Kepler's tutor at Tübingen, Mästlin, whose bones, Kepler notes, were not as light as his mind (Kepler, *Dream* 64–65).

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Although Kepler's use of the night-flight in the context of a joke and a dream may suggest an engagement with the sceptical position, at certain points in the *Somnium* he is very clearly thinking with the (shifting) natural laws of the witch-theory (as indeed, were the sceptics themselves). His account of transvection and its perils, as set out by the daemon, may owe a debt to material of a type with James VI/I's *Daemonologie* (1597), a work which was written in explicit response to Weyer and Reginald Scot, and incorporates a defence of the reality of the night-flight (within certain limits). Kepler and James appear to have written in relation to the same broader conversation about witches, and Kepler was certainly familiar with *Daemonologie*: in a 1607 letter of introduction from the astronomer to James VI/I Kepler notes his surprise at James's account of the utility of water in detecting witches.¹⁸ Most immediately, for our purposes, James's text contains a suggestive association of the witch with astral phenomena. James writes of divinely aided flight, such as that of

18. Kepler, *Gesammelte Werke* xvi, 103–04. The letter is discussed by Rublack 244. The water ordeal was a particular and prevalent point of early scepticism concerning the procedures adopted in witch trials. See further, Clark, *Thinking with Demons* 204.

Habakkuk to Daniel in the lion's den, as a counterpart to the flight of the witch to the sabbath, through the power of the Devil:

the Deuill will be reddie to imitate God, as well in that as in other thinges: which is much more possible to him to doe, being a Spirite, then to a mighty winde, being but a naturall meteore, to transporte from one place to an other a solide bodie, as is commonlie and dailie seene in practise: But in this violent forme they [witches] cannot be carryed, but a shorte boundes, agreeing with the space that they may reteine their breath: for if it were longer, their breath could not remaine vnextinguished, their bodie being carryed in such a violent & forceable maner." (James VI/I *Daemonologie* 38–39)

This interest in Satan's flight is not surprising; alongside the flight of the prophet Elias (and Habakkuk), Satan's flight with Christ to the mountain was a common analogy for the transvection of the witch (Stephens, *Demon-Lovers* 149–54). However, the passage is notable for its meteorological interests – in the uses of wind in transvection – of a similar type to those that we find in Kepler's *Somnium* and its analogues (discussed further below).¹⁹ There is a common interest across this period in the mechanics of the witch's flight. There may also be an astronomical dimension to James's use of the word 'meteor'; in this period used not only in reference to weather phenomena, as we find from the first attested use of the term in English, c. 1500, but comets also; although the primary meaning here is meteorological.²⁰ Early-modern astronomy was not the only field in which analogies were sought for imagining flight, and James's analogical thought is essentially the reverse of Kepler's: the meteorological is an analogy for the demonic in *Daemonologie*, as the demonic is for the astronomical in *Somnium*.

Beyond this correspondence (and, I have suggested, a similar imaginative framework), we might note that like James, Kepler is concerned with the physical limits of d(a)emonic travel. He writes of the hazards of the lengthy journey to the moon: "prima quæque molitio durissima ipsi accidit. Nec enim aliter torquetur ac si pulvere Bombardico excusus, montes & maria tranaret" (in every instance the take-off hits him as a severe shock for he is hurled just as though he has been shot aloft by gun-powder to sail over mountains and seas). We read similarly of impediments to breathing on the journey, eased by the application of damp sponges (Kepler, *Somnium* 6; *Dream* 16). We might note that for James, transvection over a great distance, such as between countries, is a physical impossibility, and occurs as a movement in spirit only:

19. See below, p. 91.

20. We might note, for example, Shakespeare's use of the term in *Richard III* ii.iv.9: "And Meteors fright the fixed stares of heauen". The term "metheours" (plural) first appears in late Middle English translations of Aristotle's *Meteorologica* (c. 1500). It is a loanword into English from French, ultimately from Greek. Here it refers to a treatise on astral (including meteorological) phenomena, as we find into this slightly later period also, but it was subsequently used as a singular form to refer to an astral body. 'Metheours', in *Middle English Compendium* [accessed 13th February 2021]; 'Meteor(s)' in *Oxford English Dictionary* [accessed 13th February 2021].

and some sayeth, that their bodies lying stil as in an extasy, their spirits wil be rauished out of their bodies, & caried to such places [...] for this forme of journeing, they affirme to vse most, when they are transported from one Countrie to another. (James VI/I, *Daemonologie* 39–40)

Again, we see different degrees of scepticism in different works – and Kepler's notion of the witch's bodily flight to the moon would appear to be an engagement with the most extreme impression of transvection (beyond the mechanics of the night-flight as it is understood by James), although, of course, Kepler invokes it as analogy only.

Nonetheless, Kepler's witch analogy is so close that on occasion it collapses altogether. In his notes, Kepler explains the etymological inspiration of his conflation of astronomy with the figure of the daemon: “admonuit me huius allegoriæ vox Græca Dæmon, quæ a daiein deducitur, quod est Scire” (this allegory was suggested to me by the Greek word *Daemon*, which is derived from *daiein*, meaning “to know”) (Kepler, *Somnium* 35; *Dream* 50). The association between knowledge and the demonic is a prevalent feature of witch-theory throughout the long period 1450–1700, and we find a number of representations of the devil as a scientist roughly contemporary with Kepler. We might note, for example, the writings of the mid-sixteenth-century “angelographer” Otto Casmann, on the “sublime” knowledge of the devil as concerns “natural forms and the physical properties of things” (Clark, *Thinking with Demons* 162–63). The Greek etymology of the word *daemon*, as it related to knowledge, was a feature of orthodox witch-theory also. This appears, for example, in the (false) etymologies of the *Malleus* – although demonic knowledge is here, of course, suspect:

nominatur etiam ‘demon’, id est, ‘sapiens super sanguinem’ vel ‘sanguineus’, scilicet super peccata que sitit et procurat triplici scientia qua viget, scilicet subtilitate natur, experientia temporum et reuelatione bonorum spirituum.”

(He is also named “demon”, that is “knowledgeable about blood”, or “bloody”, namely with reference to the sins that he thirsts after and causes with the three sorts of knowledge in which he is proficient (the subtlety of his nature, his experience of different times and the revelation of good spirits.).) (*Malleus* i, 259; *Malleus* ii, 89)

Given this, Kepler necessarily assures his reader that even within the frame of the allegory, Fiolxhilde's spirit is a gentle daemon rather than an aid to *maleficium*:

“eoque non spiritus illi apostatae & nequam, quibus est cum Magis & Sagis commercium, qui suae crudelitatis & noxarum testimonium habent irrefutabile, a proprio suo patrono Porphyrio.”

(they are not those vile and apostate spirits who have dealings with magicians and witches, whose cruel crimes are irrefutably proved by their own defender, Porphyry). (Kepler, *Somnium* 35-36; modification of *Dream* 51)

It is presumably the clerical nature of the allusion (the reference to Porphyry) that prompted Rosen to translate 'sagae' as "wizards" (from which I depart in my translation above). The noun is, however, feminine and 'sagae' is the term Kepler uses for witches in his allusion to the evidential status of the witches' night-flight in note 60. The distinction between 'magi' and 'sagae' (between clerical necromancers and witches) is common throughout the period, although on occasion the clerical necromancer and the witch were collapsed within "a single system" (Anglo 4). Kepler's inclusion of (seemingly) magical symbols within the occult repertoire of Fiolxhilde may well owe a debt to the occasional association of the practices of the witch with those of the necromancer, as in *Daemonologie*, where we read of the uses of circle casting and charms by the learned and unlearned alike, the cumbersome business of which is in time superseded by the demonic pact:

Epi. Fra they bee come once vnto this perfection in euill, in hauing any knowledge (*whether learned or vnlearned*) of this black art: they then beginne to be wearie of the raising of their Maister, by conjured circkles; being both so difficile and perilous, and so commeth plainelie to a contract with him, wherein is speciallie contained formes and effectes. (James VI/I, *Daemonologie* 16, my italics)

Kepler's witch is in part a figure of learned culture. Kepler writes in his notes that the means by which Fiolxhilde summons her daemon is of a type with the occult theatre in which he dressed his astronomical practices for the entertainment of the Prague court (Kepler, *Somnium* 37; *Dream* 57-58). These ceremonies were regarded by Kepler as something of a joke, and certainly, Kepler draws a strong association throughout the

Somnium between magic and the ludic. In his note to Fiolxhilde's demand for silence with a raised palm, following her invocation of the daemon, Kepler observes that he engaged in similar "ludi" in his own public astronomical performances, which were received as such by those present (Kepler, *Somnium* 38; *Dream* 58).

Quasi or pseudo necromantic practices appear to have presented a key point of intersection between astronomy and witchcraft in Kepler's thinking, and indeed in early modern astronomical imaginings more broadly. We might compare the account of Cyrano de Bergerac's alter ego Dyrcona in *Les états et empires du Soleil*, who writes that following the publication of his adventures on the moon (recounted in de Bergerac's previous work, *L'Autre monde ou les états et empires de la Lune*), he is accused of being the greatest magician in Europe. *Les états* contains a direct allusion to the witches' night-flight: a pair of superstitious rustics, who grab Dyrcona's horse, fear "que c'est le Diable en personne qui t'emporte au Sabat" (this it is the devil in person carrying you away to a witches' sabbath) (Cyrano, *Les Oeuvres Libertines* i, 108). This fear is compounded when Dyrcona's pack falls open to reveal books of astronomy. As we find in Kepler, the circles of the astronomer are associated with those of the necromancer, and the flight of the space traveller with that of the witch. It may be that de Bergerac's work is in this respect a response to Kepler's *Somnium* – after all, Dyrcona's imaginary detractors accuse him of being deposited on the moon by the "démon de Socrate" (Cyrano, *Les Oeuvres Libertines* i, 102). A direct debt or not, the analogy between the lunar passage and the witches' night-flight appears to have been an obvious one – although for de Bergerac, it is less a tool for thought than an opportunity to deride a sphere of popular superstition, against which he writes elsewhere in his essays.²¹

21. For de Bergerac's rejection of witch-beliefs as a point of "undisguised class contempt for the rustic peasantry" see Monter 113; extract from de Bergerac's 1654 "Letter against Witches" printed 113–21, which rejects the night-flight as the delusion of credulous peasants (117).

22. For a discussion of the interaction and interpenetration of learned and popular attitudes towards magic and witchcraft see Kieckhefer, *European Witch Trials*. The most famous argument for the relationship of inquisitorial records to the world of popular belief is that of Ginzburg, who positioned the night-flight as a component of a long-enduring vein of trans-Eurasian shamanism, which informed the inquisitorial construction of witchcraft. This position is carefully and convincingly critiqued by Bailey 424–46. For an overview of Ginzburg's findings, see Ginzburg, "Deciphering the Sabbath".

3

Fundamental to Kepler's allegory is the association of the witch not simply with clerical necromancy or the necromantic trappings of astronomy, but with practices and beliefs within popular culture. It remains controversial to what extent the representation of the night-flight in witch-theory reflects genuinely popular or folkloric beliefs or elite constructions.²² It is difficult – if not indeed impossible – to insist on a sharp division between the learned and popular in pre-modern magical understanding and practice, which in many respects

cut across social strata. To this, we might add the particular difficulty of dealing with content in common with, and read in relation to, the night-flight of the *Canon Episcopi*: as Kieckhefer notes of earlier literary sources, authors that claim to communicate aspects of folklore often rework material from canon law (Kieckhefer, *European Witch Trials* 27). Yet the incorporation of ostensibly non-learned cultural beliefs or practices were a particular component of the ideological and philosophical strategies of witch-theorists, and for the sceptics the vulgar nature of testimonies of the flight provided grounds for disbelief. After all, from the *Canon Episcopi* onwards these were associated with the most unreliable class of reporters, women, and in witch-writings, old women. Yet common report was also fundamental to the earliest inquisitorial formulators of witch-orthodoxy (concerned with rooting out popular error), and it is invoked in the *Malleus Maleficarum* as proof of the materiality of witchcraft itself.

As Hans Peter Broedel has observed, Institoris draws on the “epistemological optimism” of Aquinas regarding sensory experience, and by extension understood common report of sensory experience “to be a reliable indicator of the state of the world”; an early argument for the reliability of “common sense” (Broedel 94–95; similarly, Anglo 25). This was particularly important in Institoris’s defence of the reality of the night-flight, vulnerable as it was to the charge of illusion. Evidence relevant to transvection is martialled in the second part of the *Malleus*, the third chapter of which is explicitly concerned with proof of the materiality of the flight, largely in the form of common report. After all, Institoris notes “cum hoc genus superstitionis non libris aut a doctis sed omnino ab imperitis practi-catur” (the present kind of superstition is not performed with books or by the learned but the altogether ignorant) (*Malleus* i, 387; *Malleus* ii, 225). Whether we understand popular content to be genuinely present in the common reports of the *Malleus* remains in many respects uncertain, although a case has been made for Institoris’s engagement with, and on occasion mis-readings of, pre-existing popular narrative types.²³ A number of these draw on the (imagined) details of village life, and potentially owe something to the fabliau – most notably, the much-discussed episode which appears in Part 2, Chapter 7 of the *Malleus*, which tells of a man who understands his penis to have been spirited away by a witch and discovers it in a nest in a tree with other *phalloi*, the largest of which belongs to the village priest (Stephens, “Witches Who Steal Penises;” Smith). A similar, although certainly less bawdy, imagining of village life appears in In-

23. Broedel 158. See further O’Neil.

stitoris's account of the diurnal flight of a witch of Waldshut, a *res gesta* (historical event):

res gesta de visibili et diurna transuentione in oppido Waltzhut super flumen Reni Constantiensis diocesis. Malefica quedam oppidanis cum esset plurimum odiosa et ad quasdam celebrandas nuptias non fuisset inuitata, cum tamen pene omnes oppidani illis interessent, ipsa indignata vindicare se estimans demonem aduocat et sue tristitie causam aperuit, et vt grandinem excitare vellet et cunctos de chorea dispergere petiit. Quo annuente ipsam subleuauit et per aera ad montem prope oppidum videntibus certis pastoribus transuexit...

(An event concerning visible transportation during the day took place in the town of Waldshut above the River Rhine in the diocese of Constance. A certain sorceress who was hated by the townsmen was not invited to the celebration of a wedding, but almost all the townsmen did attend. She was outraged, and thinking that she would avenge herself, she summoned a demon. She revealed the reason for her sadness and asked him to stir up a hail storm and to scatter everyone from the ring dance. When he agreed he lifted her up and transported her through the air to a mountain near the town, in the sight of certain shepherds...). (*Malleus* i, 409; *Malleus* ii, 251)

From the top of the mountain, the witch performs a weather spell, and her demon sends a violent hail storm upon the town, scattering the dancers. This narrative carries heavy evidential weight for Institoris: the flight occurs during the day (and so is visible), in the presence of a large company of witnesses, both in the town and on the mountain. Its evidential status is also, however, tied to the very familiarity of the tale type: the vengeful witch seeks demonic aid and punishes the townsfolk. The logic of the tale is social, concerned with social exclusion and socially disruptive *maleficium*. Institoris presents the quotidian nature of the narrative type as an answer to the challenge of the *Canon Episcopi*:

“et quia publica fama de huiusmodi transuentionibus etiam apud vulgares continue volat, non expedit plura ad hoc probandum de his hic inserere. Tantummodo hec sufficiant aduersus illos qui huiusmodi corporales transuentiones aut omnino negant aut quod solummodo imaginarie et fantastice fiant affirmare conantur.”

(Because general reports about transportations of this kind are constantly flying about among the common people, it would not be useful to insert more illustrations about them here to prove this. Let these alone suffice against those who either altogether deny bodily transportations of this kind or endeavour to assert that they happen only in the imagination or fantasy). (*Malleus* i, 409; *Malleus* ii, 251)

In a logic that goes beyond mere verbal play, the constant flight of the narrative type is presented as proof of the reality of demonic transvection. It might be noted, however, that although the anecdote appears to be clothed in the trappings of the popular, it comes very close to a work of earlier witch-theory – the *Errores Gaziorum* (c. 1437), which similarly associates the witch's flight with the ascent of a mountain and weather magic, causing hail.²⁴ Thus, we cannot rule out the possibility of historical textual influence on this example of common report.

24. For discussion of these features within early representations of the night-flight, as relates to the witches' sabbath, see Bailey 434.

We might similarly note Institoris's debt to Nider's *Formicarius* (c. 1436; printed 1475), an early work of witch-theory, passages of which are transplanted wholesale into the *Malleus*. In a passage lifted from Nider, Institoris writes of people transported through the air while sleeping (a bodily reformulation of the dream of the *Canon Episcopi*), understood vulgarly to be the work of a lesser order of demons. Notably, as we find in Kepler, this is associated explicitly with Scandinavia:

nam nonnullos eorum quos etiam paganos vulgus appellat, nos vero trollen (et habundant in regno Norweye) aut schretl, ita seductores et ioculatores esse manifestum est, vt certa queque loca, vias iugiter obsidentes, nequaquam tormentis pretereuntes ledere possunt, derisu tantummodo et illusionem contenti fatigare eos potius studeant quam nocere.

(For some of them, who the common people call *paganos* but we call trolls (these are plentiful in the kingdom of Norway) and fairies, are misleading tricksters with the restriction that while they constantly haunt certain places and roads, they cannot harm passers-by in any way. Instead they are content with derisions and deception and strive to harass rather than harm them). (*Malleus* i, 406; *Malleus* ii, 248)²⁵

25. Mackay notes that *paganos* is an error introduced by Nider – Nider's own immediate source, John Cassian, reads fauns.

26. For the most recent discussion of Kepler's construction of the supernatural north, including his debt to Olaus Magnus, see Donecker. For an account of the influence of Olaus Magnus on European perceptions of the far north see Willumsen 359–60. As Willumsen notes, Olaus Magnus wrote from a perspective outside the subjects described – he had never visited the far north and his sources were textual. I suggest that these may have included the *Malleus Maleficarum*. Olaus has been noted also for his engagement with companies of werewolves, an interest in human-animal metamorphosis which we find also in near-contemporary *maleficium* cases (although this is comparatively rare). See further, Ginzburg and Lincoln 34–37. Kepler does not appear to associate his witch material with human-animal metamorphosis, presumably because this is not a subject that attracted the same amount of attention as the night-flight in the sceptical debate, nor indeed was especially relevant to imaginings of flight. Even in the *Malleus*, human-animal metamorphosis is understood to be purely illusory, an issue distinct from transvection although both appear (and are rejected as illusory) in the *Canon Episcopi*. See further, *Malleus* i, 321–30; *Malleus* ii, 153–62. This is distinct from the illusion by which demons appear as animals, which does appear in Kepler. See above, p. 89.

27. Kepler notes the phenomenon of the polar nights directly in n. 13. Kepler, *Dream* 43.

28. Kepler's brief reference to Mount Hekla as a gateway to Purgatory is also very feasibly derived from Magnus. See Kepler, *Dream*, 48–49 n. 76.

29. Kepler, *Dream* 52 n. 85. For Kepler's discussion of the wind bags used by Icelandic pilots see Kepler, *Dream* 44 n. 15. This appears to be an activity in which Fiolxhilde herself is engaged, see Kepler, *Dream* 12. The notion of bottling a lighter property and using it to achieve flight is found also in Cyrano de Bergerac, where Dyrcona's journey to the moon is facilitated by bottles of dew that attract the heat of the sun and function as clouds propelling him upwards. *Les Oeuvres Libertines* i, 9. With thanks to the anonymous reviewer for noting this correspondence.

This passage retains from the *Canon* the matter of demonic deception, although the flight itself is still understood to take place in the realm of bodily experience. In Kepler's representation of Fiolxhilde's daemon, who is not only the subject of a joke but the maker of one, we might wonder whether we see something of the (reconstructed) folk demonology, the jesting demons and fairies, of a type with the *Malleus*, and indeed Gödelmann's account of the imagined festivities at Witch Mountain. While there is nothing to militate against Kepler's acquaintance with material of the type that may have reached Institoris (or Nider) a century previously, or perhaps the folkloric content known to Gödelmann, he may also have encountered this allusion textually.

The jesting demons of the night-flight appear in the Swedish scholar Olaus Magnus's *A Description of the Northern Peoples* (1555), a key source for Kepler's imagining of supernatural Iceland.²⁶ Olaus writes of the demons “in Septentrionalibus siue Aquilonaribus locis (vbi literali sensu sedes est Satanæ)” (in the regions under the Seven Stars, in other words the North (where in a quite literal sense the abode of Satan lies)) (Olaus Magnus, *Historia* Lib. III, Cap. 21; *Description* I, 182; early modern orthography retained) – who assume a variety of forms and injure the local inhabitants, destroy fields, kill cattle, and overturn houses. It is almost certainly Olaus Magnus of whom Kepler writes when he observes in his notes: “et Septentrionalibus populis magiam familiarem tradunt scriptores, & credibile est spiritus illos tenebrarum insidiari longis illis noctibus” (Writers say that magic is common among the people of the north, and it is credible that those spirits of darkness lie in wait for those long nights) (Kepler, *Somnium* 34–35; *Dream* 48–49). Both Olaus and Kepler are interested in the ways in which the conditions of the polar night are germane to spirits, and to flight.²⁷ Kepler directly refers to Olaus's work in his note on Fiolxhilde's admission regarding her daemon – “cuius ope non raro momento temporis in alias oras, quas ipsi dixero, transportor” (by its help, I am not infrequently whisked in an instant to other shores, whichever I mention to him) (Kepler, *Somnium* 4; *Dream* 14) – the note associates movement of this type with the transvection of the Finns and Lapps described by “Olaus & alii” (Kepler, *Somnium* 36; *Dream* 52).²⁸ This allusion has been read by Rosen as an oblique recollection of the legend Olaus Magnus repeats concerning the bottling of winds for rapid travel across the sea in his account of Finnish sorcerers, rendered deliberately vague as the correspondence is by no means precise (although this is an allusion Kepler does make elsewhere in his work, far more directly).²⁹ Kepler's observation here is most plausibly a reference to Olaus

Magnus's description of the northern night-flight, a subject that one might safely ascribe to multiple authorities ("& alii"). In his discussion of northern demons Olaus touches on the matter of fauns and satyrs, in a passage which concludes with a reworking of the *Canon Episcopi*:

hunc nocturnum monstrorum ludum vocant incolæ Chorem Eluarum: de quibus eam habent opinionem, quod animi eorum hominum qui se corporeis voluptatibus dedunt, earumque, quasi ministros præbent, impulsuque libidinum obediunt, ac diuina & humana iura violant, corporibus illapsi circum terram ipsam volutantur.

(This nocturnal play of supernatural beings the natives call 'the dance of the elves', and this is their belief about them: that the souls of people who devote themselves to bodily pleasures (becoming as it were their servants), giving way to the incitement of their lusts and profaning the laws of God and man, assume corporeal form and are whirled about the earth.) (Olaus Magnus, *Historia* Lib. III, Cap. X; *Description* 165)

In terms closely modelled on the *Canon*, we read of the rapid travel around the earth by night by the souls of humans who act as the servants of demons. The association of the flight with fauns and other orders of demons conceived by witch-theorists as broadly folkloric may find a precedent in Institoris's (and Nider's) treatment of the popular beliefs concerning the night-flights of Germany and the trolls of Norway. The lustful proclivities of the participants in the northern flight may also owe a debt to the particular interest in the relationship between the witches' night-flight and congress with incubi as formulated in the *Malleus*. Certainly, while Olaus Magnus's night-flight is presented as an ethnographical observation of northern folklore, and accommodates linguistically and culturally specific references (notably, the presence of elves), it bears the distinct influence of the *Malleus* or related works.

In his allusion to unnamed corroborating sources, Kepler very plausibly had in mind a direct citation of this passage in one of his other named sources, Martín del Río's *Disquisitiones Magicae*, an influential reworking of material from the *Malleus*, first published by its Dutch-Spanish author in Mainz in 1595 (Maxwell-Stuart, 8). Del Río writes of the ecstasies of *sagae* and *magi* who believe they travel far and wide in their sleep, deceived by Satan, as recounted by Olaus Magnus – implicitly, the witches of the far north (Maxwell-Stuart,

30. E.g. Jean Bodin's notice of the many witches of Norway, Livonia and the northern regions, as reported by 'Olaus le grand.' Bodin 90.

108). This correspondence sits suggestively in relation to Kepler's use of witch-themes in the construction of what Stefan Donecker has observed as two opposing conceptual and geographical zones: on the one hand, Iceland, held in association with popular modes of knowledge; and on the other, an educated southern sphere, Denmark and Germany (Donecker 113). This dichotomy is crucial to Kepler's schema, and he also appears to have drawn on a broader vein of European witch-writing, in large part influenced by Olaus Magnus.³⁰ We might, for example, compare Kepler's description of Iceland as "patria semibarbarus" ("a half savage country") to James VI/I's identification of the activities of incubi and succubi with "such wild partes of the worlde, as *Lap-land*, and *Fin-land* [...] where the Deuill findes greatest ignorance and barbaritie" (Kepler, *Somnium* 3; *Dream* 13; James VI/I, *Daemonologie* 69). Yet in order to write his witch of Iceland, Kepler – as indeed did Olaus Magnus – drew on the witch of *Malleus* and related traditions, by this period conceived as part of a pan-European witch-discourse.

4

Fiolxhilde is rooted in a familiar model of the witch, associated with conceptualisations of popular culture in early modern witch-theory. This appears to have been essential to Kepler's understanding of the allegorical function of Fiolxhilde, as articulated in his notes:

imperita experientia, seu medicorum vsu loquendi, Empirica exercitatione genitricis, nasci prolem Scientiam: atque illi non tutum esse, quamdiu superest inter homines mater Ignorantia, rerum causas occultissimas in vulgus propalare; quin potius parcendum verecundiæ antiquitatis, expectandam annorum maturitatem, qua veluti senio confecta Ignorantia, tandem emoriatur. Cum igitur Somnii mei scopus sit, argumentum pro motu Terræ, seu solutionem potius objectionum ab universali contradictione gentis humanæ desumptarum, moliri exemplo Lunæ: iam tunc extinctam satis arbitrabar exque; memoria ingeniosorum hominum eradicatam veterem hanc Ignorantiam; etsi quidem luctatur etiamnum Anima in nexu artuum tam multorum, tot sæculis firmissime coalito; superestque in Academiis annosa mater; sed ita vivit, vt mors ei vita felicior æstimanda videatur.

(untutored experience or, to use medical terminology, empirical practice is the mother who gives birth to Science as her offspring. For him it is not safe, so long as his mother, Ignorance, survives among men, to reveal to the public the deeply hidden causes of things. He must rather forebear to injure the venerable beldam, while waiting for the fullness of years which will finally bring about the death of Ignorance, decrepit with old age. The purpose of my *Dream* is to use the example of the moon to build up an argument in favour of motion of the earth, or rather to overcome objections taken from the universal opposition of mankind. This ancient Ignorance was then, I thought, already dead enough and erased from the memory of intelligent men. Yet the creature still struggles on in a tangle of so many knots tied tightly together through so many centuries. The aged mother continues to exist in the universities, but such is her existence that seemingly she ought to look upon death as more desirable than life.) (Kepler, *Somnium* 30–31; *Dream* 36)

This passage has been most fully discussed by previous scholars as an example of the “expulsion” (to use Darko’s term) from the mainstream of scientific and social ideas, which underscores the production of science fiction. Certainly, it has been read (as indeed Kepler invites us to read it) as presenting “the dangers of scientific enquiry in the face of religious persecution.”³¹ While this is certainly so, we must note the utility of the figure of the witch in Kepler’s presentation of outdated scientific orthodoxies, dressed as ignorance and superstition. In Kepler’s use of the witch as an object of ancient ignorance, we might remember the stereotype of the witch from the *Malleus* to Weyer: old and foolish in both, although the extent of her delusion is of course greater in the latter.

The fundamental joke of the *Somnium* is that experiential proof of Copernicus’s thesis is an impossibility. It is as impossible as a flight to the moon, and, in Weyerian logic, as impossible as the witches’ night-flight. Interestingly, Kepler’s terminology concerning the credulity of *vulgus* (the public, with all its implications of the unlearned) is in keeping with the denunciations of *vulgares* belief in the night-flight in Weyer, who draws on the common report of the *Canon Episcopi*. This very commonality was also used by Institoris and subsequent orthodox witch theorists to endorse the reality of the night-flight as a standard of proof (for Institoris “imperita experientia”

31. Evans 165–66; similarly, Parrett 44–45.

might have evidential value), a type of vulgar empiricism that Kepler here rejects. Although, given that we are lacking a fuller treatment of the subject by Kepler, and that he clearly accepted the plausibility of some aspects of witch-theory (at least, its demonology), we might wonder whether for Kepler (or at least, the Kepler who penned his extensive notes in 1630), orthodox witch-theory – embodied in the figure of the witch – represents empiricism at its worst. It is perhaps no coincidence that the “*imperita experientia*” Kepler locates in the figure of the witch is the same term that he applies elsewhere in his notes to the accusers of his mother, motivated by “*imperitia & superstitione*” (ignorance and superstition).³²

32. Kepler, *Somnium* 32; *Dream* 40; Caspar and Von Dyke, *Johannes Kepler*, XVII 207. *Superstitio* carries a greater charge in its early modern context than its modern one, suggestive not just of credulity but impiety.

However, as Clark has observed, although the historian often breathes a sigh of relief when encountering signs of doubt within early modern engagements with witch-belief, we might remember that scepticism can be understood by degrees (Clark, *Thinking with Demons* 182–83). A fundamental recognition of the workings of demons within the natural order was an intellectual mainstay of the period. Like his contemporaries, and however we might orient him in relation to witch-scepticism, I suggest that Kepler was aware of the renegotiation of the plausible and the implausible at the centre of contemporary and long-standing witch-debates, which crystallised around the night-flight. Lest we be tempted to impose the triumph of rationality over magic (and indeed, to ignore the “specific rationality” of the latter), we must remain aware that witch-theory and d(a)emons were vital conceptual tools for Kepler.³³ The wider cultural uncertainty surrounding the night-flight appears to have been the basis of its utility in the *Somnium*, not least in terms of its place within competing notions of the plausible, the implausible, and the porous boundary between the two. For Kepler, it presented a space in which the boundaries of knowledge might be destabilised, and imaginatively expanded, as a site of intellectual play.

33. This caution is taken from Kieckhefer, “The Specific Rationality of Medieval Magic.”

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