Instruments of Wonder — Wondrous Instruments

Optical Devices in the Poetics of the Marvelous of Fontenelle, Rist, Breitinger, and Hoffmann

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Abstract:

This paper argues that many poetics of the marvelous from the late-seventeenth to the early-nineteenth century foreground optical devices, thereby drawing attention both to their mediality and to the mediality of the literature that follows their lead. In light of writings by Fontenelle and Rist that cast the marvelous in optical terms, the paper unfolds, first, the discourse concerning the wondrous nature of the instrument itself, then the aesthetics of spectacle to which it gives rise; finally, via Breitinger's shift of focus from the object observed to the observing subject, the paper demonstrates the ensuing aporias of self-reflection in a crucial text on the marvelous by E.T.A. Hoffmann.

In his *Critische Dichtkunst* (1740) Johann Jakob Breitinger enthuses: "Mit was für Ergetzen vernehmen wir die seltsamen Zeitungen, welche uns die Sternseher und übrigen Schüler der Natur von den entferntesten himmlischen und andern Cörpern […] und von des Schöpfers weisen Absichten mit denselben, gebracht haben!" (110). Likewise, he is fascinated by "wie viele vormahls verborgene Schönheiten das Auge, mit einem Vergrösserungs-Glase bewaffnet, uns in der Welt der kleinen Dinge entdecket hat" (122). Large or small: telescopes and microscopes enabled Breitinger and his contemporaries to peer into unknown worlds — or more, precisely: into worlds that seemed to be known but now, for the technologically equipped eye, took on an entirely different aspect. The spell that such worlds cast on Breitinger was nothing unusual for enlightenment thinkers. On the contrary, his fascination was as typical as it was topical, for example in his many physico-theological references to wise, providential design. On this score, Breitinger participated in a discourse that, following Blumenberg's reflections on the telescope has received a great deal of attention from historians of science and art in recent years[1]. Literary scholars have also taken an interest in the role that optical devices play in literature[2]. Building on this research and taking up an issue that has remained largely

Translation: Erik Butler.

[1] Cf. Blumenberg. For further reading, see e.g. Stafford and Terpak; Weigl; Böhme..

[2] For representative works see e.g. Stadler (*Der technisierte Blick*); Köhnen; Gess; Bergengrün; Kosenina; Neumann ("Fernrohr, Mikroskop, Luftballon").

unexplored, I argue that optical instruments play a central role in the poetical discourse on the marvelous — *le merveilleux*, *das Wunderbare* — which was so important for Breitinger and eighteenth century's poetics in general.

The fulcrum of Breitinger's theory is that poetry must not only be "auf die Wahrheit gegründet" but also, and at the same time, aim for "Neuheit," which is the "Mutter des Wunderbaren" (110). Only in this way is it possible to provoke wonderment [*Verwunderung*] in the observer (or reader) — that is, both an affective stirring and the impulse to satisfy intellectual curiosity — and thereby afford pleasure. In seeking a model for such a combination, Breitinger reaches for optical devices. I suggest that he understands the telescope and microscope as instruments establishing the desired connections between the true and the marvelous by illuminating the world in the new light of science — a premise corresponding to the popular science of the day.[3]

For Breitinger, then, truth and wonder coincide through a medium that defamiliarizes what, it seems, has been long known but now appears marvelous; and at the same time, by way of such defamiliarization, the medium makes evident what is 'really true': In other words, it is not a matter of defamiliarization so much as secular revelation[4]. The marvelous is supposed to provoke astonishment; in turn, astonishment yields intellectual curiosity; finally, desire for understanding culminates in the insight that what seems familiar is, in fact, an illusion — whereas what would appear to be marvelous represents natural-scientific truth. This is also the point of Breitinger's enigmatic phrase "Schein der Falschheit" (141), i.e. an illusion that must be penetrated to uncover the truth it contains.

As Breitinger conceived it, the visual medium does not effect a qualitative change then; it simply enlarges and makes visible, by way of magnification, what has always been there but remained hidden to the naked eye. And yet, as I would like to show, in many poetic theories of the marvelous from the seventeenth to the early-nineteenth centuries — including Breitinger's, if on a subliminal level — optical instruments push to the fore. Doing so, I argue, they draw attention both to their own mediality and to the mediality of the literature that follows their lead. Thereby these theories also point to the artificiality of the marvelous this literature exhibits, no matter whether *miracula* or *mirabilia* stand at issue, or whether what is marvelous is produced by the subject (that is, by a personal state of unknowing) or represents an 'objective' phenomenon. Ultimately, I argue, the artificiality, the crafted condition of the marvelous, is (co-)responsible for producing the wonderment the poetic theories call for. In light of writings

[3] Cf. Adamowsky, who explores how popular science of the day makes use of a rhetoric of the marvelous
[4] Brockes speaks, albeit in a religious context, of a „dritte[n Offenbarung durch] Vergrößrungsgläser[…] [und] Telescopii[…]" (438).

by Fontenelle and Rist that cast the marvelous in optical terms, the following pages demonstrate the consequences my observation holds. My attention falls, first, on the wondrous instrument itself, then on the aesthetics of spectacle to which it gives rise. Finally, via Breitinger's shift of focus from the object observed to the observing subject, my argument takes up the aporias of self-reflection in a significant text on the marvelous by Hoffmann, which, standing at the relative end of a long tradition of poetical discourse on the marvelous, adopts important aspects of the literary discussion of optical instruments, such as questions of perspective and framing, and at the same time uses these for an elaboration of the drama of modern subjectivity and its strange [*wunderlich*] features.

I. A Wondrous Instrument (Fontenelle)

Bernard le Bovier de Fontenelle, influential member of three of the academies of the *Institute de France*, is known as the enemy of the mythical variant of the marvelous; in this capacity, he exercised great influence on German poetic theory of the early eighteenth century. But he must also be recognized as the founder of a new conception of natural scientific — and especially astronomical — wonder, which Breitinger propagated in turn. Fontenelle's *Préface sur l'utilité des mathématiques et de la physique* (1702), which stands in the context of his work as editor of the *Histoire de l'Académie royale des sciences*, declares that investigating outer space represents one of the most important tasks for the natural sciences; in his eyes, it correlates directly with the wonders to be experienced in the modern world. Still, the correlation is not as neat as the two, standard ways of understanding modernity might lead one to suppose. Since the Enlightenment, at the latest, modernity has commonly been viewed as a history of progress or loss: the age of wonder is supposed to be over, and this state is either welcomed or deplored. For Fontenelle, in contrast, the natural marvelous assumes the position formerly occupied by metaphysical wonder. The quotient of wonder *increases* with scientific advances — "This great work [the universe] proves more and more marvelous, the more it becomes known" (Fontenelle, "Préface" 56). This new conception prompted Fontenelle to engage critically with the category of *vraisemblance*. After all, neither scientific discoveries nor the bold theories about the universe they entail adhered to general opinion — which, as a rule, contemporary poetological writings understood in terms of *vraisemblance*, that is, as a limit imposed on imagination and wonder. As Gipper has shown, Fontenelle replaced this notion of probability — which he regarded as a matter of prejudice more than anything else — with the idea of the not-impossible,

which stands closer to the truth (Gipper, 131-2).[5] In the preface to his famous, most frequently published and widely translated *Conversations on the Plurality of Worlds (Les Entretiens sur la pluralité des mondes,* 1686*)* Fontenelle announces:

> I have fancy'd nothing concerning the Inhabitants of the many Worlds, which must have been wholly Fabulous and Chimerical; I have said all that can be reasonably thought of them, and the Visions which I have added, have some real foundation (Fontenelle, *Conversations*, xi).

This "not-impossible-with-a-true-basis" is unmistakably marked as "marvelous." For one, it comes out in the affective states that grip the author and his interlocutor, the Marquise, when contemplating the heavens: astonishment and admiration. Equally, it is evident inasmuch as the cosmos is declared "very much [to resemble] an *Opera*" (Fontenelle, *Conversations*, 8) – in other words, the art form that counted as *the* terrain of the marvelous *par excellence* in the seventeenth century. Unlike Gipper, I do not believe that qualifying the heliocentric cosmos and the worlds within it as marvelous contradicts Fontenelle's critique of the *merveilleux*; nor is it a strategy of vulgarization trying to make the unusual appetizing to the public by offering a parallel to a familiar kind of enchantment (Gipper, 128). Instead, it represents an essential step for setting up a new conception of scientific wonder. Here, opera does not enter the equation as a stand-in for mythical wonder; rather, and as we will see in short order, it represents the new conception of the marvelous, too.

To come to light, the new species of the marvelous that Fontenelle founds requires an optical instrument — in the case of astronomy, a telescope. The *Conversations* note as much — say, when speech turns to learned parties who "travel" to the moon "every Day with their Tubes and Telescopes." (Fontenelle, *Conversations*, 52). Yet the matter hardly comes up in thematic terms. For instance, when discussion turns to the limitations of the human eye, the standard reference to the telescope, which compensates for such inadequacy, does not occur; instead, the matter is brought to bear on scientific speculation: the "true Philosopher will *not* believe what he does see, and is always *conjecturing* at what he doth *not*" (Fontenelle, *Conversations*, 8; emphasis added). On the whole, Fontenelle does not distinguish between facts and speculation — mental and imaginary power — nearly as strictly as his critique of mythical wonder would seem to imply. Instead, the *Conversations* feature the imagination in a

[5] Gipper also provides a useful overview of research on Fontenelle's *Entretiens*, especially with regard to the matter of vulgarization (pp. 121–6).

key role: the faculty necessary for the thought-experiments that shape the work itself, just as they open new possibilities for scientific insight[6].

That said, the marginal status Fontenelle seems to grant to optical instruments in the *Conversations* warrants further discussion. The opera-comparison calls the matter into question inasmuch as the instrument assumes dimensions exceeding the purely instrumental here; indeed, as the *exemplum* of the new conception of the marvelous, it constitutes the center of attention. Fontenelle's lively interest in *tragédie merveilleuse* is confirmed by his work as a librettist — first, in collaboration with his uncle Corneille on *Psyché* (1678) and *Bellérophon* (1679), and, later, when writing the librettos for *Thétis et Pélée* (1689) and *Ennée et Lavinie* (1690). At first glance, such enthusiasm seems paradoxical: after all, these works' plots are based on the mythically wondrous — which is precisely what Fontenelle vehemently criticizes. Accordingly, the parallel made to opera has often been understood simply as a strategy pursued to popularizing ends. In my opinion, however, Fontenelle's fascination for this art form does not derive from its stereotypical plots so much as from the consequences they hold for staging. Here, Fontenelle finds a further example for his new understanding of the marvelous: the theater of machines. The opera-comparison is made to precisely this end in the *Conversations.* The spectacular events onstage do not motivate the parallel; rather, it is prompted by the mechanical instruments that stand behind them ("Wheels and Springs", Fontenelle *Conversations* 9) and which evoke astonishment and admiration[7]. Fontenelle displays enthusiasm for the machinery of staging and its ingenious construction — just as he does for optical devices[8]. His turn away from the illusions of the stage corresponds to turning away from the visual sense, which remains trapped in this deceptive world. Shifting focus to stage machinery represents the correlate of shifting focus to the optical instrument, which has the power to make concealed mechanics visible. Fontenelle's enthusiasm for the heliocentric world-picture represents the corollary of discounting the sense of sight, which had occurred from the time of Galileo on[9]. The natural philosopher must "not believe what he… see[s]," if he means to get behind the workings of nature. The same holds for the opera-visitor who wishes to figure out the machinery, whose "Wheels and Springs" are "out of sight" (Fontenelle, *Conversations* 9). When this principle is observed, the eyes yield to "a new [and celebrated, NG] organ of sight." (Fontenelle, "Préface" 57). Although the principle does not find mention in the *Conversations*, it is clearly articulated in the "Préface". Here, the magnifying device, just like the stage machinery, affords the prime

[6] For discussion in full, see Gipper, 144-148.
[7] On the machine as an object of astonishment, see Lazardzig.
[8] On the connection between theatrical machinery and optical devices inasmuch as both are meant to "discover new worlds", see Nelle.
[9] On this disqualification, cf. Blumenberg; on the topos of mistrusting the eye see also Böhme.

example for modern wonder. Nothing, Fontenelle writes, is more "marvelous" (Fontenelle, "Préface" 49). Or, as he also puts it:

> Gather together all the different employments for mathematics one hundred years ago; nothing compares to the glasses [*lunettes*] they have provided us since then, which are a new organ of sight one would not have dared expect from the hands of art (Fontenelle, "Préface" 57).

Stage machinery or optical device: in either case, the mediated nature of the spectacle — and therefore the medium itself — occupies the center of attention[10]. The focus shifts: what now qualifies as marvelous is not just insight into the order of nature, but also the instrument enabling such insight: the telescope and the science that employs it, which enlists the power of imagination, too.

II. The Spectacle of the Marvelous (Rist)

Fontenelle's work for the Baroque stage and his fascination with optical devices may also be read as signs that an earlier paradigm of knowledge is still operative in his thinking, if in subterranean fashion. In this paradigm, speculative imagination has not yet been separated from analytical thought: science and spectacle, rational insight and visual curiosity do not yet belong to separate spheres; indeed, the pleasure in the spectacle outweighs the search for insight[11]. In the German-speaking world, the dialogue *Die Aller-Edelste Zeit-Verkürtzung der ganzen Welt* (1703) by Johann Rist, a baroque poet and pastor who was interested also in mathematics, botany, chemistry and medicine, may serve to illustrate this earlier paradigm.[12] On the surface, Rist's book exhibits similarities with Fontenelle's *Conversations* inasmuch as it belongs to the popular genre of fictive dialogues. A short frame story contains an exchange between scholars; it seeks to mediate between artful conversation and assorted fields of knowledge; at the same time, it means to offer edification along the lines of Christian morality. Optical instruments play an important role both in the frame story and in the dialogue. As Ingen has shown, Rist was versed in *magia naturalis*. The related parts of the exchange and the embedded narratives have an icono-narratological point of departure in the visit, which occurs in the frame story, to the library and study of the host (*der Rüstige*, who repesents Rist). His

[10] On the displacement of fascination away from what is observed to the means of observation itself, see Nelle (72), as well as Gipper (162).
[11] On the role of spectacle in the transmission of knowledge, cf. Stafford, 1-71.
[12] On these interests cf. Trepp and Ingen, who primarily examines the March-dialogue (1664) on astrology, *perpetuum mobile,* flying machines, magnets, and the philosopher's stone.

Wunderkammer offers for show an abundance of optical devices and images, in addition to various wonders of nature, art, and technology. If the frame story accentuates the curiosity provoked by the objects on display, the framed narratives and commentary in the dialogue make it plain that the fascination exercised by the instruments does not derive from the potential expansion of insight so much as from the pleasure the spectacle affords.

Although the interlocutors declare their intention not to take up matters of superstition, but rather "natural things," the distinction between a false sense of wonder and a bearing devoted to insight — as Fontenelle later understood it — already holds. That said, the work also features a framed narrative that, in conjunction with what follows, revels in precisely such optical superstition. Consequently, any and all realistic measure is exploded. The tale concerns the effects of a small, round glass filled with metals that had been placed in a warm prayer room during the winter:

> wie ich nun [...] nach ein paar Stunden aber wieder hinein gieng / siehe / da fand ich die Stube voller blauer und Goldfarber Flammen oder Strahlen / welche das Amalgama in dem runden Glase / das nunmehr schon auffzusteigen und wegen der allzu grossen Hitze / etwas zu starck zu wachsen begunte / hatte verursachet. Bald sahe ich durch die Fenster hinauß / und befand / daß der gantze Hof / Schnee / [...] wie auch die umbher schwebende Lufft lauter gelbe und blaue Flammen / oder vielmehr Stralen von sich schossen / welches zum Theil lustig / zum Theil auch erschrecklich war anzusehen. Ich rieff meine Leute zu mir in die Stube / daß sie das Spectackel nebenst mir ansehen solten (191-2)

The autobiographic cast of the report authenticates what is said. Accordingly, the narrator and his auditor also deem the events described to be of natural origin. All the same, they qualify them as marvelous — thus, their comments speak of "wonder-works" [*Wunderwerk*], "marvelous sights" [*wunderliches Ansehen*] and "wonder-fire" [*Wunderfeuer*] with a "marvelous fragrance" [*wunderbarem Geruch*]" (191-2).

Framed narratives like this hint at a sense of scientific wonder; however, it is still tied to religious motifs (the prayer room, superstition, and, of course, meditation on one's own death — which the book presents as the noblest of noble pastimes: all wonders of the world derive their value from this source). At the same time, suspicion marks the marvels of science: time and again, the interlocutors discuss whether the optical devices might not, in fact, represent instances of charlatanry. In terms of the history of science, such suspicion is hardly

unwarranted. As Stafford has shown, knowledge-transfer in the age of Enlightenment occurred through the same optical tricks that mountebanks and hucksters employed to produce entertaining illusions.[13] Moreover, as Blumenberg and many others have pointed out, it was known that optical instruments are subject to error — the possibility of sensory deception, misinterpretations, and tricks of the mind was always given[14]. To a certain extent, then, Rist's work features what Fontenelle and Breitinger suppressed for strategic reasons: the fact that the optical medium does not make visible something that exists independently — something that was always already there — so much as it co-creates what emerges in conjunction with the instrument-user's own interpretive efforts.

By Daston's account, the presentation of wondrous objects in the sixteenth and seventeenth centuries aimed to provoke astonishment; this was meant to fan curiosity, which in turn encouraged attention and, ultimately, led to investigating the object concerned.[15] That said, the thesis applies to Rist's text only in part. Although the narration of optical effects clearly seeks to produce astonishment, the ensuing thirst for knowledge, which is foiled, leads back, in circular fashion, to astonishment — astonishment at both the visual spectacle and the unattainability of knowledge. The text is neither able, nor does it intend, to convey positive, acquired knowledge about what has been witnessed. Instead, whatever insight may exist counts as hermetic; it is surrounded by an aura of mystery that ultimately has a religious and theological foundation impenetrable to interlocutors and narrator alike. Accordingly, the speaker in the framed narrative declares: "seithero habe ich dem Dinge besser nachgedacht / und befunden / daß hierunter ein grosses Geheimnisse verborgen / welches gleichwol einem jedweden nicht zu offenbahren" (192). This position stands diametrically opposed to that of Breitinger, for whom the marvelous is precisely a matter of the mysteries of nature revealed by science.

Because Rist's text aims, above all, at generating pleasurable wonderment by narrative means — one of the auditors interjects that he whitnessed the spectacle "mit grosser Lust […]" (192) – it is not magnifying instruments (such as telescopes or microscopes) that occupy the center of interest so much as devices that distort and project (e.g. prisms, distorting mirrors). Indeed, no categorical distinction is made between these two kinds of instrument, even though the former are supposed to enable an analytical view of things, whereas the latter hamper precisely such a perspective. The fact that the distinction plays no role at all — and that the latter receive more attention than the former — may, of course, be understood as sober insight into the fact that magnifying devices are prone to error. But at the same time, this circumstance

[13] Cf. Stafford.
[14] On this possibility and the fear or it: cf. Stafford; Blumenberg.
[15] Cf. Daston.

indicates, yet again, that optical devices and the effects they produce belong to an aesthetics of spectacle: it is less a matter of gaining knowledge than generating perspectives that are as unusual and surprising as possible, which in turn lead to pleasurable astonishment in the observer.

The same orientation holds for the *Aller-Edelste Zeit-Verkürtzung* as a whole. The passages I have examined admit a reading as poetological reflections based on the principle of multilayered textual design: the framed narratives tell of optical effects that trigger astonishment and admiration for those who witness them; in turn, by way of rhetorical exaggeration and amplification, the account of such effects produces a marked impression on the auditors within the text; finally, the work already expresses enthusiasm about the spectacles offered in *Wunderkammern*; in this way — through the scenes described and their hyperbolic presentation — it aims to generate astonishment in the auditors outside the text. In other words, Rist — whose work seeks to *far stupir*, in keeping with Baroque poetics — does not merely intend to share proto-scientific experiments with his readers. Instead, the optical spectacle — as already occurred when Emanuele Tesauro reformulated the poetic art of metaphor as "the Aristotelian telescope" — provides the model for an authentically literary spectacle, which the *Aller-Edelste Zeit-Verkürtzung*, in recommending literature as the noblest pastime of all, should itself be.

In sum, it is not just the optical device — which proves so fascinating because of its wondrous effects — that moves to center stage here. Concurrently, literature — which is what presents the instrument in the first place, and with utmost artistry — provides the focus of interest. Thereby, it stages the marvelous as a spectacle of mediality and displays its crafted condition. What seems to come up merely as a matter of narrative ornament in fact puts the mediated operations of literature itself as well as its artificiality on display; if this disturbs the narrative illusion, it still induces astonishment and admiration on the part of the audience.

III. The Truth of the Imagination (Breitinger)

As I noted at the outset, Breitinger held that literature, duty-bound to combine wonder and truth, should enlist the insights of natural science and pass them along to readers. Hereby, "der poetische Pinsel" takes over for the optical device in order to make visible — and just as faithfully — the marvelous discoveries of natural philosophers:

> Da nun der poetische Pinsel das Vermögen hat, dem Gemüthe diese Schönheiten des Kleinen so wohl als des Grossen, die dem blossen Auge unbekannt sind, recht lebhaft

> vorzumahlen, so ist daraus offenbar [...], daß die poetischen Schildereyen dem Verstande auch in sichtbaren Dingen solche verwundersame Schönheiten vor Augen legen können, die dem sinnlichen Auge ganz verschlossen sind (122-3).

But at the same time, the parallel between the optical instrument and the painter's brush makes it clear that the former does not simply show, on a large scale and in detail, what is already out there. Rather — and like the painter's brush, or, more still, the poet's words — it intervenes in a reconstructive capacity: the optical instrument produces *images,* which require linguistic description and interpretation. This holds especially for an age when — as Böhme and others have stressed — the views afforded by microscopes and telescopes not only were notoriously unreliable and in need of interpretation, but also had to be copied in order to last[16]. Ultimately, Breitinger's hesitant insight into the dependency of vision on framing media (and thus into the artificiality of the scientific marvelous) — which, just six years later, counted as a self-evident reason for skepticism in *Zedlers Universallexikon*[17] — led him to acknowledge that literature not only transmits knowledge, but produces knowledge of its own:

> [...] folglich muß der Poet sich nicht alleine die Wercke der Natur, die durch die Kraft der Schöpfung ihre Würcklichkeit erlanget haben, bekannt machen, sondern auch, was in ihren Kräften annoch verborgen lieget, fleissig studieren, um so viel mehr, da dieses letztere, nemlich die Nachahmung der Natur in dem Möglichen, das eigene und Haupt-Werck der Poesie ist (57).

With a conception of mimesis stretched almost to the point of bursting, Breitinger would have the poetic brush paint *possible* worlds — that is, ones that emerge from the imagination (still conceived primarily in terms of reproduction). Thus, the marvelous no longer occurs as the defamiliarization of something supposedly known; it represents something genuinely new — not in the sense of a "fulfillment of the range of possible phenomena" but as another way of ordering them (Sommadossi, 53). The optical instrument itself cannot afford a view of such newness; this can occur only through literature, the sole means for what otherwise exists only in the poet's mind to materialize.

Such thinking in terms of probability still stands in the tradition of Fontenelle, who put the imagination in the service of gaining scientific insight. However, in founding the notion

[16] Cf. Böhme (29–32); Nelle (71); Stadler ("Von Brillen, Lorgnetten, Fernrohren", 95–100, *Der technisierte Blick*, 23–34).
[17] Cf. Kosenina, who talks about this notion in Zedler, 65.

that imagination has its own truth — which he then uses to justify the marvelous, too — Breitinger also goes beyond his predecessor:

> Man muß also das Wahre des Verstandes und das Wahre der Einbildung wohl unterscheiden; es kan dem Verstand etwas falsch zu seyn düncken, das die Einbildung für wahr annimmt: Hingegen kan der Verstand etwas für wahr erkennen, welches der Phantasie als ungläublich vorkömmt; und darum ist gewiß, daß das Falsche bisweilen wahrscheinlicher ist, als das Wahre. Das Wahre des Verstandes gehöret für die Weltweißheit, hingegen eignet der Poet sich das Wahre der Einbildung zu (138-9).

As Sommadossi has shown, the notion that a truth of imagination exists does not merely amount to making the public's faculty of judgment the point of orientation (cf. Sommadossi, 62). More still, it means that the literary craft opts for imagination — or, alternately, sensory perception — over understanding when there is a conflict between them. Breitinger provides concrete examples for this state of affairs — for instance, when he declares that violent passions make one perceive the world differently than one does in a sober state; the poet, he continues, must orient himself on this excited condition, in keeping with the truth of sensory nature. Likewise, Breitinger observes that many people, even if their understanding tells them better, believe in the explanations of the world that myths and legends afford; accordingly, the poet, who measures things in terms of imagination, must incorporate them into his works (cf. Breitinger, 299). Here, Breitinger takes a position opposite to Fontenelle's polemic against the mythically wondrous. As Wetterer has demonstrated, whatever is evident to the senses is also aesthetically justified in Breitinger's eyes.

And so, in elaborating the concept of a truth of the imagination, Breitinger developed an alternative to the poetological model derived from the optical instrument, which aimed to produce wonder through a "Schein der Falschheit" loyal to natural-scientific truth. In his alternative model, this same "Schein der Falschheit" serves the senses or the imagination. Not natural science, but psychology ultimately counts as the terrain of wonder — whereby the marvelous, now as then, refers to what seems impossible or incomprehensible beyond this sphere, yet proves altogether probable within it.[18] Applied to the discussion of optical devices, this means that what formerly instilled doubt about instruments' capacity to afford insight now counts as psychologically 'true.' In other words, the focus is no longer statements concerning

[18] In this regard, Breitinger is already concerned with what scholarship has ascribed to Martin Wieland: psychologizing the poetological principle of the appearance of falsehood, which characters must then penetrate (cf. Preisendanz).

the object, but ones concerning the (ap)perceiving subject, which produces an item of wonder that possesses its own truth. This shift, I argue, stands at the center of Romanticism's Copernican turn from mimesis to production, and more specifically at the center of Hoffmann's poetology of the marvelous — which enlists and deploys optical instruments more intensively than any other.[19] In conclusion, I would like to demonstrate as much by examining "Das öde Haus" from the *Nachtstücke* (1817). Instead of reiterating that optical instruments in Hoffmann's works stand for poetic imagination and the danger of losing touch with reality,[20] I would like to explore how Hoffmann calls (self-) reflection into question.

IV. Mirror Images (Hoffmann)

The frame story to "Das öde Haus" foregrounds the poetological discussion of the marvelous. In brief, the marvelous (*das Wunderbare*) — which involves events that seem impossible and supernatural — is distinguished from the strange or bizarre (*das Wunderliche*), which concerns behavior without rational justification that can be understood in emotional terms; to complete the picture, it is affirmed that the strange always emerges from the marvelous[21]. Theodor, the main protagonist and autodiegetic narrator of the story, talks of the abandoned house in order to illustrate this "mix"; here, optical instruments — opera glasses, a mirror, and a magic lantern — play a central role[22].

Gerhard Neumann has argued that Hoffmann's texts make the workings of optical anamorphosis their own: an initial disfiguration switches back into reconfiguration. He sees the process both in themes of optical instruments and in an overall, narrative pattern of a "progressive[n] Exploration des verdunkelten Faktischen, des verborgenen Triebgeschehens und des noch unentdeckten Zusammenhangs der Dinge" (Neumann, "Anamorphose", 404). At first glance, "Das öde Haus" — which Neumann does not discuss — confirms this approach. The peculiar dwelling that attracts the interest of Theodor is clearly distorted**.** On the one hand, it is stuck between two other houses and therefore too narrow; at the same time, it is squat and

[19] Hence my move from Breitinger directly to Hoffmann. Needless to say, a great deal occurs in the interim and at the same time; for example, one could examine poetological reflection on the optical instrument in Jean Paul (cf. Bergengruen), Kleist (cf. Müller-Tamm), Brentano or Eichendorff (cf. Gess)

[20] As taken up e.g. in Stadler (*Der technisierte Blick*, 169). As prior research has shown, optical devices in Hoffmann's works provide metaphors for the workings of the imagination, particularly the danger of yielding to what it produces in uncritical fashion — which makes the enterprise of the aspiring poet fail. Typically, such workings occur in two, complementary forms: animation and transference, which Hoffmann identifies both as foundational principles of his narrative art (cf. Segebrecht); see also Miller for the entrapment of the Romantik artist in his own imagination.

[21] Hoffman, "Das öde Haus" 164–5. In contrast to the innumerable discussions of "Der Sandmann", a related work in terms of structure and content, scholarship on "Das öde Haus" is easy enough to survey. Recent efforts of note include Sittig and Lieb, whose work is discussed below.

[22] On discourse concerning optical devices in Hoffmann and their relation to the history of science, cf. e.g. Stadler, "Von Brillen, Lorgnetten, Fernrohren".

compressed insofar as what should be the ground floor harbors two levels; moreover, it lacks the apertures houses otherwise have: the windows have been bricked or boarded up; there is no bell, lock, or latch; indeed, the building lacks all complexion: its walls are "farblos" (Hoffmann, 166). Theodor, wandering down the street and letting his gaze drift from one structure to the next, is struck by the house right away because of its "wunderlich seltsame" (166) deviation from the norm, which seems to harbor a mystery. This mystery is made plain as soon as he makes use of an optical device — *nota bene,* not the dioptric (refracting) medium that Neumann discusses, but a mirror. As occurs in catoptric (reflecting) anamorphoses, the mirror serves to provide a more precise view of the image; in this fashion, the scene turns into the picture of a young girl looking at the beholder (177-8). The process of reconfiguring what has been disfigured becomes even clearer later on, when Theodor has to breathe on the mirror — that is, obscure it — in order to be able to discern the girl's image (180). The same thing happens again when, driven by yearning to see the girl once more, he makes his way into the mysterious house and sees, "aus dem Nebel eine hohe jugendliche Gestalt in reichen Kleidern hervorleuchte[n]"; as it turns out, this sight is a reversible figure: depending on how far away he stands, it presents a "von Alter und Wahnsinn gräßlich verzerrtes Antlitz" or, alternately, the "Züge jenes holden Spiegelbildes" (188-9). Theodor's dogged investigation into the mystery of the deserted house begins by gazing into the looking glass, and, finally, it ends with an explanation that he, too, has had a part in bringing about the solution: under the supervision of a caretaker, an old countess inhabits the building; she went mad and now is locked up for her own protection — and other people's, as well; she commands magnetic powers and by this means bound Theodor to the image of her earlier, youthful appearance before he managed to free himself from the spell (192-8). In this light, the tale may certainly be understood as "progressive Exploration des verdunkelten Faktischen", as Neumann puts it, i.e. "romantic" facts, where irrational motivations and riddling magnetism play a role. The experts depicted in the tale declare precisely these factors to represent the royal road leading to the secrets of the human mind. Thus, in terms of the distinction that precedes the narrative proper, one might indeed speak of the progressive resolution of "das Wunderbare" (the marvelous) into "das Wunderliche" (the strange, bizarre).

However, this interpretation is as inconsistent as it is tidy. At the end, the tale offers multiple indications that anything but a resolution of the mysterious events has occurred. First and foremost, nothing is said to explain how the mirror works: Theodor simply stops worrying about it: "wie aber der Spiegel – das tolle Zauberwesen überhaupt – doch weiter – weiter!" (Hoffmann, 190). He breaks off. In turn, the doctor deems it "überflüssig" to draw his patient's

attention to the "tiefern Zusammenhang aller dieser seltsamen Dinge", and Theodor readily concedes that it is "ganz unnütz, mich [...] darüber etwa zu verbreiten" (189-90). Second — and here, at the latest, it is clear that such obfuscation does not serve to transform the merely strange into the marvelous, as Claus Sittig has claimed — this "Auflösung" crams, onto the narrow space of four pages, such a wild array of fairytale motifs (an evil witch, two sisters — one good, the other bad) together with so many matters of pathological and criminal sensation (kidnapping, adultery, fits of madness) that it seems less like an answer to the mystery than a caricature of any possible explanation.[23] Moreover, the wish for elucidation is satisfied much too abruptly, and by a narrator (the doctor) who is neither particularly inventive nor stylistically assured. In consequence, if one wishes to believe the explanation, one would do well to follow Theodor's example and not dig any deeper. After all, here the speaker is not Theodor himself, but his doctor. It is wholly conceivable that the latter has simply made up the whole account in order to pacify his patient. If so, then the anamorphic reconfiguration that Neumann proposes does indeed occur — but in the process, the text marks it as a matter of calculated (self-)deception.

The actual problem commanding the whole tale's orbit — which also cannot be resolved at the end — does not concern the mystery of the deserted house, but rather its observer. Even though Theodor starts out as a detective investigating the house, he becomes the detective of his own self; and he can only fail in this task, for it plunges him into the infinite whirl of self-reflection. The decisive reason underlying this state of affairs is the fact that — in contrast to many other tales by Hoffmann — it is not a dioptric, but a catoptric medium featured in the tale. Its narrative function demands our attention. Gazing into the mirror repeats a childhood trauma Theodor had repressed:

> wenn ich mich […] gelüsten ließ, Abends vor dem großen Spiegel in meines Vaters Zimmer stehen zu bleiben und hinein zu gucken [, dann sagte die Ammenfrau,] wenn Kinder Nachts in den Spiegel blickten, gucke ein fremdes, garstiges Gesicht heraus, und der Kinder Augen blieben dann erstarrt stehen. [...] Einmal glaubt' ich ein paar gräßliche glühende Augen aus dem Spiegel fürchterlich herausfunkeln zu sehen, ich schrie auf und stürzte dann ohnmächtig nieder. (177-8)

Instead of (mistakenly) identifying with the mirror image (in the sense of Lacanian *méconnaissance*) and thereby developing a conscious sense of self, the child — under the

[23] On this "madcap *tour de force*," cf. also Lieb, 63.

influence of a nursery tale[24] — sees an uncanny stranger in the looking glass. Accordingly, the mirror does not enable the jubilatory assumption of an integral body; instead, only partial objects are visible: first the stranger's eyes, and then, later, the girl's face — or her arm and hand. When Theodor looks into the foggy mirror, he never sees his own likeness. Instead, he either falls in love with the alien image or recoils from it in horror. This is the role played by the reversible image discussed above, which appears veiled in mist; as Theodor says, "da war es mir, als sei das scheußliche Gesicht nur eine Maske von dünnem Flor, durch den die Züge jenes holden Spiegelbildes durchblickten" (189). In this light, all the events involving the deserted house represent projected reflections that stem from Theodor himself. This also explains why the house looks so funny. It resembles nothing so much as a gigantic magic lantern: basically, a closed box that intermittently emits light, casting images outward. The house also has a mysterious pipe poking out, from which smoke billows, as it did out of magic lanterns. Significantly, the images cast by magic lanterns were often called *Nebelbilder* — literally, "fog-pictures" — because they lacked definition. Needless to say, Theodor faces fog-pictures, too. To this extent, then, one may still hold that the mirror functions as an optical instrument in the service of progressive elucidation: it confronts Theodor with repressed memories and experiences that chafe at his sense of self and self-certainty, prompting him to engage in introspection.

But far from being an "erlösende[r] Akt", as von Matt (von Matt, 466) contends, which saves Theodor from the fate of Nathanael in the closely-related "Sandmann" (1817), it is precisely such introspection that stands at the origin of all his woes. Both Theodor's childhood trauma and his later experiences with the mirror represent the problem of self-reflection; mirroring cannot resolve them — it only amplifies them *ad infinitum*[25]. Theodor's encounters with the mirror concern, above all else, the phenomenon of doubling that yields a visible and reflected world, the latter one seeming to be mad. Theodor cannot handle the phenomenon of doubling. He splits his mirror image off from himself; like Freud catching sight of his uncanny Doppelganger on the train (Freud, 162), Theodor encounters this foreign presence as a matter of profound ambivalence[26].

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[24] Cf. Lieb (61 and 70), who points to the nursery tale as the origin of the trauma; reference to Lacan is made on (Lieb, 69).

[25] On this problem see: Menninghaus: He shows how Schlegel and Novalis argue against the grain of identity-philosophy by pointing to the duality within unity. It might be said that Hoffmann puts this philosophical critique on display in literature. However, in Hoffmann the primordial duplicity has an ambivalent charge, for the splitting of the images at their origin leads to madness.

[26] The Doppelganger-theme plays an important role in Hoffmann's works, e.g., *Elixiere des Teufels* (1815/16), *Abenteuer der Silvesternacht* (1815), *Prinzessin Brambilla* (1821). See Lachmann.

Nor does just *one* instance of splitting occur. As the goings-on in and around the deserted house make plain, the narration itself gets carried away by the whirl of doubles.[27] At the outset, the building seems to be uninhabited. But gazing into the looking glass fills the house with more and more residents: the girl, whom Theodor calls "mein Spiegelbild" over and over; her mother, whose double is her sister — the mad countess — who, moreover, claims to have a daughter of her own; the gypsy woman, who would appear to be the same person as the countess at the end of the tale; the old caretaker, whose glowing eyes identify him as the reincarnated stranger from Theodor's childhood; Count S. and a certain colonel, both of whom fall victim to a love-spell and set off on a journey to Pisa. The physician, who is versed in the magnetic arts, is doubly present, too. Only Theodor has no discernible Doppelganger at the ready. As the example of the girl illustrates, all the doublings lack a living original: the mirror does not reflect an actual young woman, just an image. Nor is it clear whether it shows the girl, her mother, or her sister — all of whom are just older or younger copies of the others. The image has always already been there, before any of these figures takes the stage; it is a reflection that emerged in the first place by splitting off from the mirror.

In structural terms, the tale follows the principle of *mise-en-abyme*. A frame story recounted by an extradiegetic narrator describes Theodor as a notorious spirit-seer; this is where the account of the deserted house told by a man who has just been qualified as unreliable is situated; in turn, Theodor's story contains two more narratives, which double each other on many points — especially the final account, from the doctor, which supposedly solves the mystery. Just as Theodor cannot handle all the doublings, the narration seems ill-equipped to manage the *mise-en-abyme* structure. Just as Theodor suddenly breaks off his process of introspection, the three embedded narratives end abruptly when each speaker refuses to say anything more: first, in twenty short lines, the doctor declares that nothing more need be said about the innermost tale; then, Theodor declares it useless to go on with the tale in the middle; finally, the frame narrative just breaks off — the reader learns *that* the friends still discussed "noch Manches" about Theodor's adventure, but not *what* this involved (Hoffmann, 197-8). And so, the mirror does not represent only the aporias of self-reflection. It also stands for the aporias of self-reflective literature. Here, by way of the optical instrument, literature does not just engage in self-reflection — already an established practice in the poetics of the marvelous — so much as it presents the problems that such self-reflection in literature entails.

At the same time, the marvelous is evoked whenever the narratives break off. Theodor does so when he speaks of the "tollen Zauberwesen" (190). The doctor does the same when he

[27] Cf. also Lieb, who speaks of a semiotic diffusion of identity.

mentions the "tiefern Zusammenhang" between "seltsamen Dinge" and belatedly confesses his own horror at the alien image peering from the mirror. Finally, Theodor does so again by playing the oracle and carrying on about the "dämonische[n] Spiel" of "mystische[r] Wechselwirkungen" (198). In this light, the marvelous becomes legible as the neutralization of self-reflection; it fills in the gap that would otherwise result when reflection and the account(s) it generates break off. In other words, when the frame story brings up something that *seems* supernatural, and therefore marvelous (164-5), one may take this statement to mean that the marvelous, *das Wunderbare,* is being consciously deployed as a matter of appearance in order to interrupt the whirl of self-reflection. In contrast, the strange — *das Wunderliche* — stands for the aporias of such self-reflection, the doublings and splittings that drive Theodor mad. Thus, the definition that Theodor provides in the frame story — that "the strange" is always rooted in "the wondrous" — turns out to be the continuation of the same defense strategy that prompts him to break off his tale. Fittingly, when reading from the thesaurus (namely, *Eberhards Synonymwörterbuch*) to support his definition,[28] he omits the very passage that attributes *das Wunderliche* to a particular, affective structure and an unstable sense of propriety — that is, the very passage that would expose *him* as the epitome of the bizarre (164-165). Yet again, narration breaks off and the resulting gap is filled with the concept and mysterious aura of the marvelous — the affirmation that here lie the roots of the strange or bizarre.

V. Conclusion

Whereas, for Rist, the optical instrument is associated with the promise of wonder in the spectacle of mediality and artificiality that is also — and especially — to be performed by literature, in Fontenelle's works, the device is marvelous in its own right for affording insight into new, and therefore utterly astonishing, domains, which literature is charged with transmitting. Breitinger takes up this thought to affirm a literary connection between truth and wonder; but in so doing, he discovers that the literary marvelous also constitutes the field where newfound interest in subjective contingency – including insight achieved by instrumental means – can be played out for the purpose of understanding subjective knowledge / a knowledge of the subject. Reacting to this turn, in Hoffmann, the optical device represents the aporias of this same self-reflection — from which literature offers no escape, either. Turning the spyglass into a defamiliarizing looking glass generates psychic and textual disturbances that replace marvelous [*wunderbares*] knowledge about the foreign with an experience of the self, which now has grown strange [*wunderlich*]. Henceforth, recourse to the notion and aura of the

[28] Cf. Sittig (241), who, however, simply finds confirmation for the familiar symptom-thesis here.

marvelous only conceals the inevitability, in the modern world, of mental and textual *mise-en-abyme*-logics.

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