

Rafael Mirami's *Specularia* (1582) A Jewish Skeptical Source?

ALBERTO CASTALDINI

BETWEEN THE late sixteenth and early seventeenth centuries the mirror, as a tool of knowledge both in “natural” and “divine” philosophy and in astrology,¹ becomes a significant *topos* of skepticism. In the prominent Venetian rabbi Simone Luzzatto’s work *Socrate, ovvero dell’humano sapere* (Venice, 1651), the mirror demonstrates, despite the optimism of its manufacturer² (whose certainties are refuted by the skeptical arguments of the philosopher), the weakness of human senses and every dogmatic vision, because it is a creation of man living in his own time, made by his sensitive organs. The human senses are described by Luzzatto as “those curved and irregular mirrors which distort the images and appearances of objects, because nature is pleased to joke with men, showing non-existent things, and so we have fun to build such mirrors to deceive the sight of gullibles and simpletons” (“*quelli specchi curvi, et irregolari che stravolgono l’immagini et apparenze di oggetti, havendosi così compiaciuto la natura scherzare con li homini, con farli travedere, siccome noi ci pigliamo diletto di formare tali specchi per defrodare la vista de più creduli e semplici*”).³ The same representation of the world is in this way invalidated by false images, because—as Luzzatto writes—“mirrors produce for us a clear mutation of appearances. Despite being made of the same material, they diversify a lot the reflected images through the small diversity in their structure” (“*evidente disquisamento di apparenza ci arrecano li specchi, che, sebbene della istessa materia costrutti siano, un poco di varietà che nella loro figura accade diversificano non poco l’immagini da essi riflesse*”).⁴

In this philosophical and epistemological context we can place one of the most significant treatises on catoptrics from the end of the sixteenth century: the *Compendiosa Introduktione alla Prima Parte della Specularia, cioè della Scienza de gli Specchi. Opera nova, nella quale brevemente, e con facil modo si discorre intorno agli Specchi, e si rende la cagione, di tutti i loro miracolosi effetti* (Ferrara, 1582), written by the Ferrarese Jew Rafael Mirami, “Fisico, e Matematico,” dedicated to Antonio Montecatini, secretary of State of Alfonso II d’Este, duke of Ferrara. Montecatini was a prominent professor of natural philosophy at the University of Ferrara (founded in 1391), where he taught for almost four decades. In the same year 1582 Mirami was also the author of an appendix.⁵ Unfortunately we haven’t sufficient biographical information about him. The orientalist Giovanni Battista De Rossi mentioned Mirami in his *Dizionario storico degli Autori Ebrei e delle loro opere* (Parma, 1802), and so did Friedrich Murhard in his work *Litteratur [sic] der mechanischen und optischen Wissenschaften* (Lipsiae, 1805). Mirami’s competence was also mentioned by some Italian essayists of the nineteenth century: Gianfrancesco Rambelli, *Intorno a*

invenzioni e scoperte italiane (Modena, 1844) and Giuseppe Jaré, *Abramo Colorni, ingegnere di Alfonso II d'Este* (Ferrara, 1891).⁶ We have some informations about his family thanks to the census of the Ghetto of Ferrara in 1692. The ghetto was created (1627) after the passage of the town to the papal domain (1598). The census records the presence of Moisé Israel Miram [sic], his wife Allegra and their sons Emanuel, Isaia, Serena, Angelo and finally Raffael Vita. It's therefore very probable, in the light of his first name, that the last one was a nephew of Rafael Mirami, *Specularia*'s author. This family had most likely Sephardic (or "Italic") origins, like a large part of the local Jewish community at that time.⁷ Furthermore, as Mirami declares in the dedication of his book, he was a disciple of the Ferrarese physician and philosopher Antonio Maria Parolini, author of a *Treatise on the Plague* (Ferrara, 1630) and ducal doctor by decision of Alfonso II.⁸ Parolini introduced Mirami to the study of mathematics and science, "even if it remains unclear whether the Jewish student actually received a doctorate in Ferrara."⁹

The Jewish community of Ferrara, in which Mirami lived, had a significant role in the world of letters and sciences during the sixteenth century. In 1573 a rabbinical society was organized for the education of rabbis and teachers. The orientalist and Bible translator Immanuel Tremellius, born in Ferrara in 1510, studied at Padua and was professor at the local university. Then he converted first to Catholicism, went to Strasbourg, and subsequently embraced Protestantism. Abraham Gallo also held a professorship in Hebrew language at the University of Ferrara. The well-known Marano Amatus Lusitanus, physician and polyglot, became professor of botany and anatomy, emerging as a prominent physician of his time. Rabbi and philosopher Isaac Abravanel's sons lived at Ferrara under the mild rule of the Estes. Also the Jewish poet Samuel Usque, author of the *Consolação às Tribulações de Israel* (1553) lived in the capital of the duchy. The physician and scholar Azariah dei Rossi, author of *Me'or 'Enayim* (*Light of the Eyes*: 1573-75), a work in which he adopted critical methods to test the literal truth of the *Haggadah*, likewise spent his days at Ferrara. In 1570 an earthquake made about 150 victims in Ferrara. Azariah dei Rossi and his family survived. His report of the calamity was entitled *Kol Elohim* (*The Voice of God*), because he regarded the earthquake as a visitation of God and not as a mere natural disaster.¹⁰

The *Specularia* (*Science of the mirrors*) is characterized by a mix of theoretical research and visionary components which marked Western thought in the delicate transition from the late Renaissance to the Modern Age, as explained by the same Mirami to his readers: "This science of the mirrors must be held in high regard, because it is the cause of so many appearances that can be seen in the mirrors, because of which people are often very much amazed" ("*Degnissima certo de essere havuta in gran pregio, si debbe estimar questa scienza de gli specchi, poi ch'ella ne rende la cagione di tante belle apparenze, che ne gli specchi si veggiono, per le quali sovente gli uomini sono pieni di maraviglia*").¹¹ Mirami's work is an authentic treatise, divided into twenty-five chapters. Cristina Cándito indicates that it "goes into several aspects of reflection thoroughly. Besides its practical applications, Mirami dealt with the technique of mirrors construction and the issue of images which may be true or deceptive in their deformations. There are descriptions of the columnar and pyramidal mirrors, the burning mirrors and the multiplication of images. In the second part of the work, Mirami mentioned the curious application of

mirrors to create sundials in shaded zones, anticipating the catoptrics sundials by Athanasius Kircher and Emmanuel Maignan.¹²

We have to note that Mirami doesn't lack references to the Jewish tradition and to moral values. His reference to *Numbers* 12:6¹³ is significant: only Moses could have the vision of God, and this theophany happened mysteriously as if through a mirror. The mirror was indeed considered a symbol of prudence and a concentrate of wisdom, because it creates the image of God reflecting the image of man (*Genesis* 1:26). A mirror is wonder, producing the same feeling which animates every creative act, that of man as that of God. It is described, also by the Jew Mirami, as an instrument of human vocation. This includes the vocation of Moses, who overcomes his skepticism by the help of faith without finally seeing the land given by God. The mirror is certainly an instrument, a research key, but with Mirami it becomes an applied metaphor in loving the only truth that comes from God, source of the eternal light.¹⁴

This concept is also reported by the rabbinic literature. Using a concave and a convex mirror, Rabbi Meir (2nd century B.C.) showed to an incredulous Samaritan that if the human face can change shape when reflected in them, in any other way it was possible for God to show himself to Moses.¹⁵ So, if on the one hand the mirror is a symbol of the appearances produced in the intellect by the weakness of human sensations, on the other it is the instrument of an indirect vision of divine reality. In the appendix to his work, Mirami shows how to construct a sundial in a shady place, by using some reflectors.¹⁶ Mirami's technical expertise doesn't seem to ignore the limits of knowledge, but at the same time he accepts the challenge in investigating the infinite possibilities offered by reality (which comes from God). Mathematical calculation and visual deception remain the basis of the observation of a world that must be interpreted in its truth and in its fiction, within the awareness of human limitations. Francisco Sanches (1551-1623), a Portuguese physician, philosopher, mathematician of Jewish origin, son of *christiani novi*, described (*Quod Nihil Scitur*, Lugduni 1581) the fallacy of the human senses as an imperfection that God wanted to leave in mankind, preventing an authentic knowledge of the substance of things.¹⁷ Therefore Jewish skepticism developed its own questions in the presence of God. After all, skepticism is *not synonymous with atheism*.

Rafael Mirami, physician, mathematician, theorist of mirrors, occupies a prominent place in *La Piazza universale di tutte le professioni del mondo* (1st edition: Venice, 1585), an encyclopedic work of the Italian canon Tomaso Garzoni, dedicated to Alfonso II d'Este. Garzoni speaks extensively about Mirami in discourse CXLV entitled "De' speculari, et specchiari" (but he was mentioned also in discourse LXXX: "De' maestri d'orologi"), with detailed references to the sources, like the exhortations of Socrates (from Diogenes Laertius) about the mirror as a tool when reflecting on life and on the transience of human opinions, including virtuous behavior. Garzoni celebrates Mirami's knowledge and competence, warning in a skeptical spirit the "specchiari" (mirrors' manufacturers) not to brag too much, because their works are fragile like "glass," and so honor and glory are only apparent "like the things in a perspectival view [. . .] because art is nothing else than fallacy and deception, too clear and obvious to each of us" [*come sono le cose di prospettiva [. . .] essendo che tutta l'arte non è altro che fallacia et inganno troppo chiaro a ciascuno, e troppo evidente*].¹⁸

Mirami, Garzoni and seventeenth-century authors like the Jesuits Athanasius Kircher and Kaspar Schott, or Marin Mersenne, Jean-François Nicéron, Niccolò Zucchi, demonstrate how the mirror, in the philosophical and theological representations of the time, possesses a revelatory function that was deeply ambiguous and fallacious. It reveals to the observer *a reality*, but at the same time deceives him through its illusions. The mirror becomes a “research key” and simultaneously a “fictional symbol” that doesn’t lead to the truth. On a metaphysical level, in an age marked by a deep religious crisis and rigid confessional conflicts, the mirror becomes however a shared metaphor of divine vision. Jurgis Baltrušaitis (who declared that Mirami in a certain way wrote his own book *Le miroir* considering his *Specularia* a source of inspiration¹⁹) writes that through the “optical illusion,” the mirror soon became the “symbol of reason which discovers God” revealing the *apparent similarity* of what man already has some knowledge of.²⁰ While it seems to compensate the senses’ limitation (primarily sight’s fallacy), at the same time the mirror compels man to understand that what he sees (or he believes to see) is subjected to a sensitive and mental filter, and therefore conditioned by a possible deception, whose manifestation, however, urges us not to stop in searching and measuring knowledge, suggesting new “disposizioni” (attitudes) in the way towards the truth, as suggested by Rabbi Simone Luzzatto,²¹ aware that “if sight is the source of error, this is caused by its relation with the intellect, the main author of these illusions” [*se la vista ci rapporta alcuna falacia, ciò sia causato dal commercio che tiene con l’intelletto, di tali illusioni principale autore*].²² In this way the theory of mirrors and the optical experimentation between the sixteenth and seventeenth centuries incite the philosophers to revise certainties, common values, visual and existential perspectives, freeing thought from a reality that binds it to the objective fact.²³

Since Antiquity, reality and dream had worked conjointly, just like vanity and prudence.²⁴ Baltrušaitis evokes the mirror as the image of the “hieroglyphic,” a metaphor inspired by the same Mirami, when in *Specularia* he writes that mirrors “in somebody’s opinion were hieroglyph of truth, because they reveal everything put in front of them, since it is typical of the truth not to be hidden. According to the opinion of others, mirrors were a symbol of falsity, because almost always they show the reality differently from what it really is” [*appresso alcuni furono Hieroglifico della verità imperò che scoprono ogni cosa, che s’appresenta loro inanzi, come è costume della verità che non può stare occulta. Altri in contrario, presero gli specchi per Simbolo della falsità, poi che l più delle volte ci mostrano le cose altrimenti di quel che sono*].²⁵ In the first case, therefore, mirrors reveal everything that is reflected; in the second one they show things differently than they really are.²⁶ In Jewish culture the use of mirrors was also at the center of precise prescriptions. During the Sabbath it was not allowed to look into a mirror unless it was mounted on a wall (TB *Shabbath* 149a), even if the members of a rabbi’s family were allowed because they were considered *close to the government*. A lot of superstitions, all over Jewish Europe, were related to mirrors: “Mirrors are covered when a person dies. The angel of death will be seen if one looks into a mirror at such a time. If a mirror is broken, seven years of poverty will result; this is a general superstition, and not confined to Jews. In Galicia it is supposed that if one puts a mirror in front of a sleeping man with a candle

between them, the sleeper will follow a person whither the latter wills. If the sleeper strikes one under these circumstances, the person stricken will not live more than a year.²⁷

At the end of seventeenth century the mirror becomes a paradigm of philosophical reflection and a primary vehicle of skepticism: the marvel that it seems to manifest, compensates (also on a fideistic and magical level) the still narrow limits of experimental science. As Umberto Eco wrote, the mirror “*is what it’s not*,” because “it is not a bearer of signs”: it *represents* reality, fixes and frees up imagination, bends our senses.²⁸ In the mirror human subjectivity is particularly emerging, which prevents objective knowledge, and, not without delusion, opens the senses on what is reflected. The mirror so *feeds the skepticism* without resolving it at all.²⁹ As noted by Sabine Melchior-Bonnet, in the late Renaissance “the mirror reflects the disturbances of the soul and supports or verifies the deductions of the thought,”³⁰ but its truth remains ultimately a *truth on nothingness*. In fact, if the soul contemplates itself in the mirror, the essence of the human being is not reflected in it. The same happens to exterior beauty: the mirror captures features, appearances, perhaps conceals imagination, but it replies to man’s questions with other questions. So, the psychic and religious soul remains hidden, and real beauty (which is not an apparent virtue) discriminated, as in the seventeenth-century story of the Jewish Venetian woman of letters Sarah Copio Sullam.³¹ In this way, in the mirror “everything is guesswork and subjectivity.” At the same time, however, the awareness of its illusory nature highlights the emerging importance of doubt, and leads every man to renounce his own centrality for a broader philosophical perspective, open to otherness, where man “doubts his gaze, he suspends judgment and stands listening to his own emotions.”³² Thanks to the catoptrics, such vision marks, between the sixteenth and seventeenth centuries, a new “psychology of discontinuity,” done by unstable, conflicting, individualistic categories, strongly influenced by the senses.³³ In fact, catoptrics develops the anamorphic techniques, and the symmetry of the forms is replaced by irregularity, disproportion, as a sort of *visual heresy*. In a first instance the reason seems to be weakened by this visual experiment, but finally it will be refined by the skeptical filter.

If the mirror’s use in the observation of the sky, as Mirami intends to do with his calculations, widens the knowledge about the world,³⁴ it can have various methods and uses. Mirami—wrote Eileen Reeves—seems to be interested also “in the literary preexistence of the sorts of mirrors whose form and function he described in the *Compendious Introduction*: he frequently cited, in the course of his theoretical arguments, illustrative verses of Horace, Dante, and Petrarch, and proudly compared, in an analogy made more plausible by the weird story of Giovanni Mercurio, Archimedes’ burning mirror to a magician’s polished shield in Lodovico Ariosto’s romance epic *Orlando Furioso*.”³⁵

So, the mirror’s function becomes the antithesis of every dogmatism, and the “exact mirror exists only in the imagination,” because the world is reflected by it in an “ungraspable space,”³⁶ as unreliable as it is attractive. Furthermore the mirror materializes the dream, and Mirami’s *Specularia*, based also on a rigorous empirical study,³⁷ calls into question the categories of interpretation of reality as well as the sensorial principles themselves, opening new conceptual horizons. For this reason, Mirami seems *animated by skeptical desires*, like other contemporary colleagues. In the first half of the seventeenth century, the optical studies of the Jesuit Athanasius Kircher (*Ars Magna Lucis et Umbrae*, Romae

1646) and those of his confrere Kaspar Schott laid the foundations for perspectivism, which feeds itself by deception and wonder (since that moment, the divine order of creation appears far away), producing new optical machines and especially *new metaphors* for a reality whose boundaries have been expanded, also thanks to technological innovations.³⁸ In Kircher's works, mirrors maintain a didactic and catechetical function: they reflect the rays of God's wisdom. So the light of reason and the human senses can only turn out broken,³⁹ but at the same time Kircher's *Arsa Magna* (III, 4: "Metamorphosis and catoptrical transformations") represents "a treatise on the technique of imagination."⁴⁰ Concettism, in the same years, develops the iconographic representation of ideas, which, as explained by the mannerist painter Federico Zuccari, are reflected "as a mirror" in our minds,⁴¹ fueling the passion for metaphors and symbols that founded the construction of an illusory but possible world.⁴² Therefore, the mirror evokes or reveals concepts as alternative worlds. So, in an age of transition, it seems to dissolve the same image of the world as had been seen so far. This is also the invitation that Mirami addresses to his readers: "I hope that what happened to me will happen to many people, while I was daydreaming with others in the mirrors, looking to the images represented, I was seized by wonder for the amazing appearances that arose to my sight . . ." [*spero, ch' à molti accaderà, quel ch'avenne a me, che mentre vaneggiava con altri negli Specchi, guardando l'imagini rappresentate, fui sopraaggiunto dalla maraviglia delle apparenze miracolose, che mi si fecero inanzi . . .*].⁴³

The deception of the senses, searched but not entirely refuted by the *Specularia*, draws that sensualism initially based on reason and then overcoming it: the stimulation and strengthening of senses through the science of mirrors determine a double observation, where every opinion on reality is postponed and the criterion of truth is questioned. René Descartes, for example, frequented between 1622 and 1629 the Convent of the Minims in Paris, an important center of optical experiments (we remember the "constructive skepticism" of the Minim friar Marin Mersenne, in contact with Descartes).⁴⁴ According to Baltrušaitis this experience served to Descartes to prove the deception of the phenomenal world and of "sensory perception." For this reason the theory of mirrors reconfirms the gap, from Plato to Descartes, between "reality" and "judgment" and invites us to be cautious in regard to the senses (cf. Descartes, *Meditatio prima*, 1641), primarily the sight.⁴⁵ The mirror—as Rabbi Simone Luzzatto writes on the basis of the catoptrics treatises that he consulted (Kircher and probably Mirami like others), and as Sextus Empiricus explained with a similar metaphor centuries earlier (*Pyrrhoneae hypotyposes*, Tropo I)—shows to us how every opinion believed true is rather relative. The mirror, despite the development of manufacturing techniques,⁴⁶ remains a source of deception, or at least "of appearing relativism," and seems to indicate that there isn't any really observable ultimate truth.⁴⁷ Hence the *abstention from judgment* on all that appears to our eyes.

In conclusion, during the late Renaissance, the mirror confirms itself as an "allegory of the exact vision," of "the deep thought and work of the spirit that closely examines the data of a problem." It symbolizes the skeptical *reflectere* after having called into question the grounds for knowledge set by Scholastic philosophy.⁴⁸

A Brief Anthology of Mirami's *Specularia*

I. *Compendiosa Introduzzione alla Prima Parte della Specularia* (1582)

God as first Mirror

“. . . di tutte le sopradette pratiche, io voleva fare un lungo Trattato, per sodisfare ad alcuni miei Signori, che desiano d'averne piena cognitione, ma perché non è mai stato mio costume di trattare la Pratica, senza i fondamenti della Theorica, però m'è piaciuto di dare in luce prima questa introduzzione, perché debbia facilitar la strada alla pratica, la quale son solito di mostrare a chi n'ha desiderio; che forse un giorno daremo in luce, se ci sarà concesso il divino aiuto. Accettate dunque volentieri la presente mia *Specularia*, ne v'incresca con le maniere, & avvertimenti di lei specchiarvi alcune volte: perché conoscendo voi medesmi alziate la mente, non pur a quelle *Speculationi*, ch'io spero di darvi, ma etiandio a quelle, che vi scorgano al Primo, e lucidissimo Specchio, nel quale mirando si vede il tutto.” (Foreword: *Ai benigni e giudiciosi Lettori*)

Mirrors and the Bible

“Oltra che molti visioni apparse à gli eletti d'Iddio sono chiamate nella lingua hebraica, non senza grandissimo misterio con nome equivoco à gli specchi, come si vede in quel verso nel 12° de' Numeri che dice: *Si quis erit inter vos propheta Domini in visione apparebo ei*, che nella lingua hebrea quella parola, che da' Latini, è, stata tradotta visione, significa specchio. Et come questo vi sono molti luoghi nella Sacra Scrittura, à cui questa scienza apre non poco la strada della loro intelligenza.” (p. 3)

Mirrors and magic

“. . . col mezo di quella (the science of mirrors) ci possiamo guardar da gl'inganni delle donne prestigiatrici, le quali, ò con gli specchi, ò co' vetri, ò simili ne fanno veder imagini per aria, e di cose occulte, e così danno à credere alle genti, che quelle imagini siano demonij dell'inferno, ò spiriti, come dicono elle, famigliari, venuti in quel christallo per rispondere, à quei simplici miserelli, che con gran danno, e maggior peccato loro prestano fede à simili donnuciole, il cui errore hebbe già luogo, ancora nei passati tempi, quando la superstitione de gl'idoli fioriva, onde fra le molte specie della magica, vi era la Catoptomantia, che'l suo primo fondamento erano gli specchi, e le imagini loro, e la *specularia* ne assicura da tali inganni insegnandoci la cagione di tale apparenza esser naturale, e non dependere, ne da' spiriti, ne da' demonij.” (p. 3)

On the light essence

“. . . la qual diremo ch'è una Divina natura che tengono in se stessi alcuni corpi d'illuminare, e risplendere, come fanno le stelle, il fuoco, e alcuni corpi, ne i quali, è insita questa rara virtù d'illuminare. . .” (p. 7)

The real meaning of the images in the mirror

“Però è da sapersi, che tutte le apparenze delle quali si ricerca la cagione nella Specularia, oltra à quella del foco che si vede esser prodotto, da certi specchi esposti al Sole consistono in quell’obietto visibile, che vien rappresentato all’occhio nostro, all’hora che tenemo il guardo fiso nello specchio, il qual’obietto clamaremo sempre imagine [. . .] perché altro non sono le dette apparenze, che le differenze, e varietà, che si cognoscano tra l’imagine, che si vede nello specchio, e l’obietto, che ne viene rappresentato fuora. Et per queste varietà consistono, in tutte quelle cose, che particolarmente veggiamo, nell’imagine; però mai non potremo perfettamente cognoscer tutte le dette varietà, se prima non sappiamo tutte le cose particolari, che si veggiono distintamente nell’imagine. Onde convien prima far mentione, e dare à cognoscere tutte le cose, che nell’immagine, si scernono, e poi discorrere intorno all’ differenze, e varietà, che si veggiono tra essa, e il vero obietto.” (pp. 22-23)

What is human sight

“Dico dunque, che il vedere è un atto dell’anima nostra, col quale apprende, e cognosce le cose visibili, e ne da quel giuditio, che debbe. Et dico, ch’è un atto dell’anima nostra, per che sì come nella filosofia naturale si mostra, non può veramente dirsi, che l’occhio per se stesso cognosca gli obietti, veggia, ò visibili, mà l’anima è quella, che li vede, e li comprende, e l’occhio è solamente un mezzo, e uno istromento a questo atto. Et al veder, e cognoscere le cose visibili incorre l’anima, non solamente con la sua facoltà sensitiva, e con la sua parte visiva, ma etiandio con alcune altre di quelle, che si domandano principi, come è la cogitativa, la distintiva, la discorsiva, la memoria, e l’altre.” (p. 26)

On visual rays

“Perche, si come mirando nello specchio, veggiamo le cose da lui remote; così parimente, l’anima guardando nell’occhio cognosce le cose, che son fuora di lui. Et i raggi visivi si potrebbero chiamare nuntij, e messaggieri dell’animo; poi che si partono prima da lei per andare à spiare gli obietti, e poi si tosto come l’hanno trovati, ritornano alla loro padrona, e le riferiscono le condizioni di quelli. Hora facendosi à questo modo l’atto del vedere dell’anima nostra, possiamo facilmente sapere, come sieno da lei cognosciute tutte l’intentioni visibili, e quali siano le cose, che possiamo vedere, e quali nò.” (p. 27)

Image and deception

“Ragionandosi, della figura dell’imagine all’hor che ella si vede differente dal vero obietto, ci conviene avvertire, che alle volte suole farsi uno inganno à color che si specchiano per cui pare à loro di vedersi trasformati in altri; e perche questa apparenza dipende solo da una illusione, però ci basterà manifestare l’inganno, il quale è questo.” (p. 52)

II. *Tavole della Prima Parte della Specularia* (1582)

Secret meaning of the mirrors

“Non sono mancati ingegnosi scrittori, c’hanno dottamente ragionato di ciò che possono significare gli Specchi nelle imprese. Onde per non lasciare questa parte ancor, che non molto necessaria sotto oscuro silenzio: Dico che eglino appresso alcuni furono Hieroglifico della verità imperò che scoprono ogni cosa, che s’ap-presenta loro innanzi, come è costume della verità, che non può stare occulta. Altri in contrario presero gli specchi, per Simbolo della falsità, poi che’l più delle volte ci mostrano le cose altrimenti di quel che sono, come quando rappresentano, il grande picciolo, e il picciolo grande, l’alto basso, e il basso alto. Appresso gli Hebrei, considerato il commune loro uso, furono significato, prima della Bellezza, del corpo, e secondariamente della lascivia, che’l più delle volte ha origine da quella, e però quando il Gran Profeta Moise fabricò nel deserto il tabernacolo del SIGNOR IDDIO, le Donne, che si diedero a lavorare i pavimenti che vi si facevano portarono ad offerire i suoi specchi, per segno, che con essi offerivano la Bellezza, e la vita loro, la quale abbadonando il lusso e il piacere consacravano tutta alla DIVINA MAESTÀ. Si potrebbe anco prendere lo specchio, per l’incostanza d’alcune persone, quali sono gli adulatori, i parassiti, e le Meretrici; nel cui animo, si come tosto pare che s’imprimi l’Amore altrui, così presto ancora si risolve, e annulla: à questa guisa, che nello specchio facilmente si rapresenta ogni imagine, e facilmente ancor sparisce, non credo ancora, ch’errasse chiunque dicesse, lo specchio essere un ritratto dell’ostentatione: avvenga che sia costume de i vantatori arrogarsi le lodi e i fatti egregi de gli altri; onde mostrano d’havere quel, che non hanno, come fanno gli specchi, i quali tutto, che non habbiano in se colore, ne figura alcuna, nondimeno mostrano i colori, e le imagini, delle cose estrinsice, come à punto le havessero. Molto leggiadramente, si potrebbe dire, che lo specchio significhi l’imitatione, per che si come guardando in quello, veggiamo le cose, che sono da lui lontane: così mirando l’imitatore, si veggiono l’imagini, degl’imitati, e si come vi sono alcuni specchi che rappresentano le cose più belle, e altri, che le mostrano più brutte; così ancora, vi sono miseri imitatori dei vitij, che non mostrano se non idoli monstuosi, e per il contrario ancora si trovano, felicissimi emuli, de gli uomini preclari, e dell’opere Eccelse, ch’accrescono splendore a gl’imitati, e in questo Senso metaforico si prende lo specchio quando lodandosi alcuno, si dice, ch’egli è uno specchio ò di virtù, o di Nobiltà ò d’altro, ciò è imitator dell’opere nobili, e virtuose. Si potrebbero ancora per avventura trovare altri significati, ma hora ne lasceremo l’impresa ad altri più curiosi, contentandoci di quanto habbiam detto in questa materia.”



Notes

1. See Jurgis Baltrušaitis, *Le miroir: révélations, science-fiction et fallacies. Essai sur une légende scientifique*, Paris: A. Elmayan-Le Seuil, 1978 (it. ed. Milan: Adelphi, 1981).
2. Renaissance mirrors were not flat but generally convex and hence the reflected image was not faithful. In 1507 the method for making clear the glass mirrors was discovered in Venice, but only at the beginning of seventeenth century cheaper crystal mirrors became widespread in Europe. See Debora Shuger, *The "I" of the Beholder. Renaissance Mirrors and the Reflexive Mind*, in Patricia Fumerton, Simon Hunt (eds.), *Renaissance Culture and Everyday*, Philadelphia: University of Pennsylvania Press, 1999, p. 21. See furthermore Sara J. Schechner, *Between Knowing and Doing: Mirrors and their Imperfections in the Renaissance*, "Early Science and Medicine," X, 2005, pp. 137-162.
3. Simone Luzzato, *Scritti politici e filosofici di un ebreo scettico nella Venezia del Seicento*, ed. by G. Veltri, Milan: Bompiani, 2013, p. 180.
4. *Ibid.*, p. 198.
5. Rafael Mirami, *Tavole della Prima Parte della Specularia, cioè della Scienza de gli Specchi*, Ferrara: Heredi Tortorino & Rossi, 1582.
6. Abramo Colorni (1544-1599) was a famous engineer among the Jews of Mantua. In his works and inventions he applied mathematics and hydraulic notions. Colorni built fortifications, invented weapons, but became a renowned charlatan after some disastrous experiences. He was also an alchemist and served at the courts of Mantua, Ferrara, Prague and Stuttgart. See Ariel Toaff, *Il prestigiatore di Dio. Avventure e miracoli di un alchimista ebreo nelle corti del Rinascimento*, Milan: Rizzoli, 2010. Mirami, introducing his work *ai benigni e giudiciosi Lettori*, acknowledges Colorni's importance: "misurare con la vista, le profondità e le distanze, come ampiamente ne discorre in un suo trattato M. Abramo Colorni Hebreo, ingegnossissimo ingegnere del Serenis. Duca di Ferrara."
7. Laura Graziani Secchieri, "In casa d'Amadio Sacerdoti Mondovì: lui medesimo d'anni 3." *Il censimento del ghetto di Ferrara del 1692*, in Id. (ed.), *Ebrei a Ferrara Ebrei di Ferrara. Aspetti culturali, economici e sociali della presenza ebraica a Ferrara (secc. XIII-XX)*, *Atti del Convegno internazionale di studi organizzato dal Museo Nazionale dell'Ebraismo italiano e della Shoah in collaborazione con l'Archivio di Stato di Ferrara, 3-4 ottobre 2013*, Florence: Giuntina 2014, p. 122. The lack of documentation about Mirami's life has also suggested that his name may be a pseudonym. Significant at the end of the work is his dedication of a sonnet to the "bellissima e gentilissima signora Perla A.," almost certainly a Jewish woman (as the name indicates) whose identity we ignore.
8. Concerning A. M. Parolini see Antonio Libanori, *Ferrara d'oro imbrunito*, Ferrara: Stampa Camerale, 1674, p. III, pp. 47-48.
9. Daniel Jütte, *The Age of Secrecy. Jews, Christians, and the Economy of Secrets, 1400-1800*, New Haven-London: Yale University Press, 2015, p. 122.
10. Ferrara in those years was an important place of encounters between Jews and Christians. See Giulio Busi, *Officina ebraica ferrarese*, in Id., *Il succo dei favi: studi sull'umanesimo ebraico*, Bologna: Fattoadarte, 1992, pp. 65-93.
11. R. Mirami, *Compendiosa Introduzzione alla Prima Parte della Specularia*, Ferrara: Appresso gli Heredi di Francesco Rossi & Paolo Tortorino, Compagni, 1582, p. 2.
12. Cristina Cándito, *Drawing and Light. Bases and Methods, History and New Application of Shadows and Reflections in Representation*, Florence: Alinea, 2010, p. 159.
13. Mirami, *Compendiosa Introduzzione*, p. 3.

14. The same divine light described and celebrated by Mirami: “[...] il Primo Sole (*the First Sun*) che ne fillustri coi suoi santissimi raggi (*holiest rays*), à cui rendiamo tutte le possibili grazie, che possiamo, tanto per gli altri innumerabili doni (*innumerable gifts*) ricevuti dall’infinita sua bontà (*infinite God’s bounty*), quanto per haversi già scorti al fine del nostro camino, nella Scienza delli Specchi” (*ibid.*, p. 70).
15. Baltrušaitis, *Le miroir*, p. 71 (it. ed.).
16. Mirami, *Tavole della Prima Parte della Specularia* [*Come si possano col mezo de gli Specchi fare Horalogi Solari in luoghi ombrosi*].
17. Richard H. Popkin, *The History of Scepticism from Erasmus to Spinoza*, Berkeley: University of California Press, 1979 (ed. it. Milan: Bruno Mondadori, 2000, p. 55).
18. Tomaso Garzoni, *La piazza universale di tutte le professioni del mondo*, Venice: Serravalle, 1605, p. 888.
19. J. Baltrušaitis, *Le trame dello “specchio,”* in B. V. Bandini, D. Baroncelli (eds.), “*Fallit imago*”: *meccanismi, fascinazioni e inganni dello specchio*, Ravenna: Longo, 1984, p. 10.
20. Id., *Le miroir*, p. 49 ss (it. ed.).
21. Michela Torbidoni, *Il metodo del dubbio nel Socrate*, in G. Veltri (ed.), *Filosofo e Rabbino nella Venezia del Seicento. Studi su Simone Luzzatto. Con documenti inediti dall’Archivio di Stato di Venezia*, Rome: Aracne, 2015, pp. 201-203.
22. Simone Luzzato, *Scritti politici e filosofici*, p. 153.
23. See Agnès Minazzoli, *La Première ombre. Réflexion sur le miroir et la pensée*, Paris: Les Editions de minuit, 1990,
24. See Gérard Simon, *Le regard, l’être et l’apparence dans l’Optique de l’Antiquité*, Paris: Seuil, 1988.
25. Mirami, *Tavole della Prima Parte della Specularia* [*Del significato secreto de gli specchi*].
26. See: Edward Peter Nolan, *Glass Darkly: Specular Images of Being and Knowing from Virgil to Chaucer*, Ann Arbor: Michigan University Press, 1990; Stuart Clark, *Vanities of the Eye: Vision in Early Modern European Culture*, Oxford: Oxford University Press, 2007.
27. *Jewish Encyclopaedia*, vol. VIII, 1904, p. 609.
28. Umberto Eco, *Sugli specchi e altri saggi*, Milan: Bompiani, 1985, pp. 10-18.
29. *Ibid.*, pp. 21-22.
30. Sabine Melchior-Bonnet, *Histoire du miroir*, Paris: Imago, 1994 (ed. it. Bari: Dedalo, 2002), p. 183.
31. G. Veltri, *Body of Conversion and Immortality of the Soul: Sara Copio Sullam, the “Beautiful Jewess,”* in Id., *Renaissance Philosophy in Jewish Garb. Foundations and Challenges in Judaism on the Eve of Modernity*, Leiden-Boston: Brill, 2009, pp. 226-247.
32. S. Melchior-Bonnet, *op. cit.*, p. 276 (it. ed.).
33. See Louis Van Delft, *Le Moraliste classique. Essai de définition et de typologie*, Geneva: Droz, 1982.
34. See Eileen Reeves, *Galileo’s Glassworks: The Telescope and the Mirror*, Cambridge, MA: Harvard University Press, 2008. Reeves describes as “otherwise unknown, and perhaps pseudonymous” the author of *Specularia* (*ibid.*, p. 36). But we know the existence of a Miram [sic] family in the ghetto of Ferrara.
35. *Ibid.*, p. 37.
36. J. Baltrušaitis, *Le trame dello “specchio,”* p. 12.
37. Cándito, *op. cit.*, p. 159.
38. See on the topic: Eugenio Battisti, *L’Antirinascimento*, Milan: Feltrinelli, 1962; Id., *Intorno all’architettura. Scritti dal 1958 al 1989*, ed. by M. Sestito, Milano: Jaca Book, 2009; Luciana Cassanelli, *Macchine ottiche, costruzioni delle immagini e percezione visiva in Kircher*, in M. Casciato,

- M. G. Ianniello, M. Vitale (eds.), *Enciclopedismo in Roma Barocca. Athanasius Kircher e il Museo del Collegio Romano tra Wunderkammer e museo scientifico*, Venice: Marsilio, 1986, pp. 236-246; Paolo Rossi, *I filosofi e le macchine, 1400-1700*, Milan: Feltrinelli, 2002.
39. Cf. Angela Deutsch, *Iconographia kircheriana*, in E. Lo Sardo (ed.), *Athanasius Kircher. Il museo del mondo*, Rome: De Luca, 2001.
40. Valerio Rivosecchi, *Il simbolismo della luce*, in M. Casciato, M. G. Ianniello, M. Vitale (eds.), *Enciclopedismo in Roma Barocca*, p. 217.
41. Gustav René Hocke, *Die Welt als Labyrinth. Manier und Manie in der europäischen Kunst*, Reinbek: Rowohlt, 1977 (ed. it. Rome-Naples: Theoria, 1989), p. 66.
42. See on the topic: Slavko Kacunko, *Spiegel. Medium. Kunst. Zur Geschichte des Spiegels im Zeitalter des Bildes*, Paderborn: Fink, 2010.
43. Mirami, *Compendiosa Introduzione alla Prima Parte della Specularia*, (*Ai benigni e giudiciosi Lettori*).
44. See on this topic: R. H. Popkin, *The History of Scepticism*, cit., p. 199 ss.; Giulia Belgioioso, Jean-Robert Armogathe (eds.), *René Descartes, Isaac Beeckman, Marin Mersenne. Lettere 1619-1648*, Milan: Bompiani, 2015
45. J. Baltrušaitis, *Anamorphoses ou Thaumaturgus opticus*, Paris: Flammarion, 1984 (ed. it. Milan: Adelphi, 1978), pp. 83-86.
46. See George McClure, *The Culture of Profession in Late Renaissance Italy*, Toronto-Buffalo-London-Toronto: University Press, 2004,
47. M. Torbidoni, *op. cit.*, pp. 196-197.
48. Baltrušaitis, *Le miroir*, p. 9 (it. ed.).

Abstract

Rafael Mirami's *Specularia* (1582): A Jewish Skeptical Source?

Rafael Mirami, Jewish physician and mathematician from Ferrara, a town in northern Italy between Bologna and Padua, was the author of the *Compendiosa Introduzione alla Prima Parte della Specularia* (1582), an important catoptric study that aroused admiration in his contemporaries as well as in scholars of the present time. The Lithuanian art historian Jurgis Baltrušaitis admitted that Mirami inspired his famous study on mirrors in art, imagination and thought. The article puts forward the hypothesis that Mirami's work may have provided also elements of reflection on the skeptical thought which developed starting from the end of the sixteenth century. In fact, the mirror became a remarkable *topos* of skepticism.

Keywords

mirror, vision, catoptrics, skepticism, concettism, Jewish thought

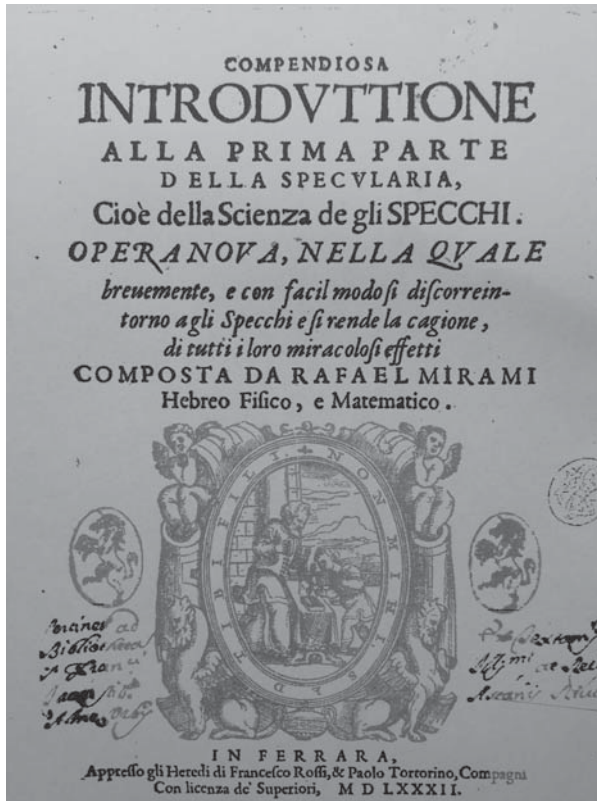


FIG.1: Frontispiece of Mirami's *Specularia* (1582).

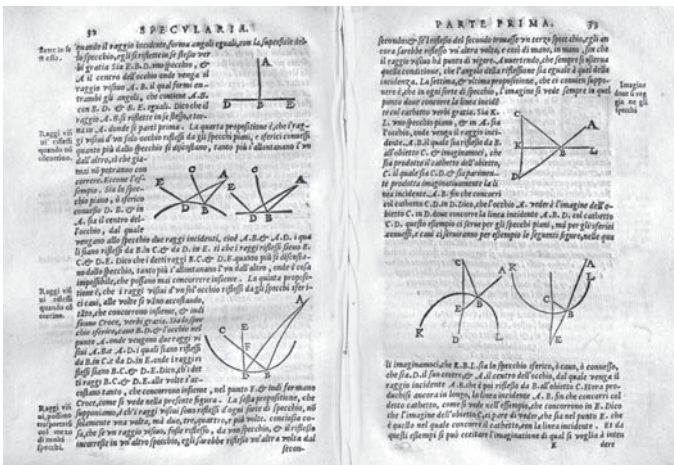


FIG.2: Two inside pages of *Specularia*.



FIG.3: The page preceding the frontispiece of Athanasius Kircher's *Ars Magna Lucis et Umbrae* (1646).

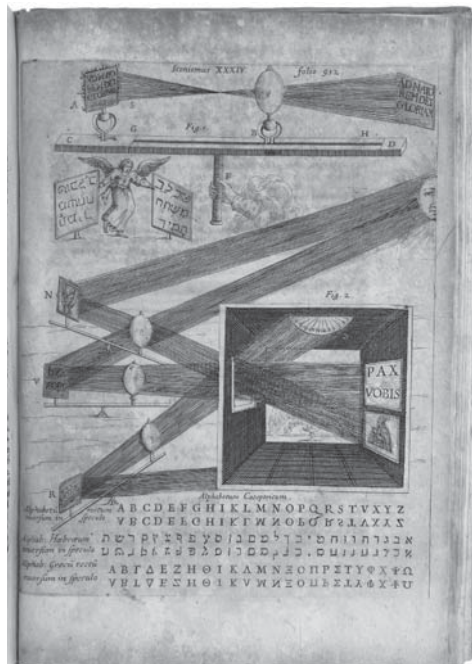


FIG.4: Illustration of Kircher's stenographic mirror in *Ars Magna Lucis et Umbrae*.



FIG.5: *Ape with a mirror* (Johann Theodor de Bry, *Emblemata saecularia*, Francoforti, 1596).