Aesthetic Illusion

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Theoretical and Historical Approaches

Edited by
Frederick Burwick
and Walter Pape

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Foreword

The publication of Gombrich's *Art and Illusion* (1960) stimulated renewed inquiry into the problem of illusion, and a number of conflicting interpretations have appeared in subsequent years. Many of these, however, have been limited to applications in the Fine Arts, or they have confined the inquiry to phenomenological-hermeneutic approaches — for example, the two volumes in the series *Poetik und Hermeneutik: Nachahmung und Illusion* (1964) and *Funktion des Fiktiven* (1983); also the volume *Ästhetischer Schein* (1982) in the series *Kolloquium Kunst und Philosophie*. Murray Krieger's *Poetic Presence and Illusion* (1979) remains the major effort in English to provide theoretical and methodological direction to the analysis of illusion in literature.

The purpose of the present volume is to discuss theoretical and historical approaches to aesthetic illusion and to address questions of illusion and ideology in terms of social and cultural concepts of reality in relation to the illusory presumptions of literature and the nature of reader/audience response. It is divided into four sections. The first section examines illusion as a fundamental issue in the social as well as the cognitive sciences; the essays in this section will address illusion as an attribute of perception shaped by external as well as internal factors. The second section will address the problem of illusion in language theory, semiotics, rhetoric, and aesthetics; the essays are addressed to the constituency of the art object or literary work (such topics as semiotic duality and disparity, affective and suasory strategies in rhetoric and in narrative development) as well as to the nature of the aesthetic experience (vicarious, sympathic or empathic response; modes of identification and alienation; game or play involvement; degrees or levels of illusion — fantasizing, erotic indulgence, enthusiasm, delusion). The third section will provide critical examination of the formal conditions, expectations, and manifestations of illusion as developed within different genres. The fourth section surveys historical permutations in the literary uses of illusions; changes are documented with representative studies in major periods (Renaissance, Baroque, Enlightenment, Romantic, Modern). — The volume concludes with a bibliography (that also includes some major reference works on illusion etc. not cited in the individual articles) and an index; the bibliography contains the full data of all titles cited by the contributors, the footnotes give only short-titles.

This volume is the proceedings of a Humanities Research Institute Conference on Aesthetic Illusion, held at the University of California, Los Angeles, March 2–5, 1989. The conference brought together scholars from the United States, Great Britain, Switzerland, and Germany to discuss different approaches to aesthetic illusion. The intention was to provide a forum for discussion, to engender a collaborative interaction among participants, and to produce this volume. The editors want to thank everybody who helped to complete it: the University of California Humanities Research Institute and the UCLA College of Letters and Science for financial support of the conference; the Deutsche Forschungsgemeinschaft, which provided the travel costs for the German participants; the publisher Walter de Gruyter, especially Professor Dr. Heinz Wenzel, who made it possible that this volume could be published without any subvention for the printing costs. In checking the bibliography and the index, stud. phil. Daniel Fulda, Cologne, provided valuable assistance.

Los Angeles, June 1990 — Frederick Burwick

Köln, June 1990 — Walter Pape

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> Art treats *appearance as appearance* and thus does *not* want to be an illusion, but is *true*.
>
> [...] truths are illusions which we are oblivious of their being illusions [...].
>
> Friedrich Nietzsche[1]

WALTER PAPE/FREDERICK BURWICK

Aesthetic Illusion

Illusion, fiction, mimesis, imitation

"All our tales are *experiences* of men. They are *true*. What was handed down by our wise forefathers, is not careless discourse or lie. When people of our times consider many events untrue, this is only because they are of thinner juice of life than the forbearers, to whom we owe the tales."[2] These sentences from an Greenland aborigine remind us that story-telling in oral societies was regarded as a kind of ritual and thus part of reality. Though our juices seem to have been progressively thinned by contemporary modes of fiction, we still rely on those Platonic and Aristotelian concepts which were based on conventions originally observed in oral traditions. Although a recent translation of Plato will use such terms as *fiction*, *illusion*, *imitation*, these words now bear the burden of a long aesthetic discourse, and we easily neglect to consider the historical change. Nevertheless, *fiction*, *mimesis* (usually translated as 'imitation'), and *illusion* have become the crucial terms in defining the nature of art and/or aesthetic experience. Among these words, only *mimesis* had been used in antiquity as an aesthetic concept. In Roman rhetoric, *fictio* and *illusio* denoted hypothesis and irony. In English, *fiction* in the sense of 'imitating', 'feigning', 'inventing imaginary incidents', 'invention as opposed to facts', and even as a poetic term has been used since the sixteenth century and earlier[3]; in German *Fiktion* was first used

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1 Nietzsche: "Nachgelassene Fragmente" (1873). *Sämtliche Werke* vol. 7, p. 632; "Über Wahrheit und Lüge im aussermoralischen Sinne". Ibid. vol. 1, pp. 880–881.

2 Quoted from Röhrich: *Märchen und Wirklichkeit*, p. 162.

3 See *Oxford English Dictionary* vol. 5, p. 872.

in the seventeenth century, mostly in the context of criticizing novels as opposed to truth.[4] K. Ludwig Pfeiffer in the present volume has outlined the 'fate of this concept between philosophy and literary theory'. *Illusion* on the other hand was always more connected with cognitive experience than just being the opposite of truth or reality. As an aesthetic concept the word came into use no earlier than the eighteenth century. And then no other aspect of aesthetic experience received more attention.[5] Du Bos, Diderot, Hutcheson, Lord Kames, Lessing, Mendelssohn, and Schiller all endeavored to explain the phenomena of aesthetic illusion. A new concept of reality and verity emerged in the age of enlightenment, a new social function of literature arose: literature was meant to regulate human and social development, to be part of the new age of education. Literature, operating through emotion, consequently had to give an illusion of that better world, proceeding from the imitation of real life. The spectator in a theatre audience, or the solitary reader, was supposed to lose consciousness of himself and become oblivious to the act of watching or reading[6]. In this century the central concept of *mimesis* has gained a new meaning, even as it has blurred the meaning of *illusion*[7]. Many a scholar thus succeeds today in making Aristotle a philosopher of the eighteenth century[8]. What seems to be a venerable aesthetic commonplace at closer investigation turns out to be the product of misinterpretation. Almost eighty years ago Jane Ellen Harrison had warned: "we translate mimesis by 'imitation', and do very wrongly"[9]. Periods in the history of art during which artists or poets strove for an 'exact imitation' of reality are much shorter than is usually presumed. Aesthetic illusion, consciously engaged, is older than aesthetic theory might suggest. Coleridge's famous definition of illusion as "willing suspension of disbelief for the moment"[10] is preceded by Gorgias who stressed the awareness of experiencing illusion: For him tragedy was a "deception [...] in which the deceiver is more justly esteemed than the nondeceiver and the deceived is wiser than the undeceived."[11] Gorgias was also quoted by a French theoretician of the seventeenth century, who emphasized the willing disposition of the spectator.[12]

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[4] Cf. Sauder: "Argumente der Fiktionskritik 1680–1730 und 1960–1970".

[5] Cf. Hobson: *The Object of Art. The Theory of Illusion in Eighteenth-Century France.*

[6] According to Friedrich von Blanckenburg, cf. Voßkamp: *Romantheorie in Deutschland*, p. 173.

[7] Tarot: "Mimesis und Imitation" suggests to separate *mimesis* ("dargestellte Wirklichkeit") strictly from *imitation* ("fingierte Wirklichkeitsaussage").

[8] Bien: "Bemerkungen zu Genesis ursprünglicher Funktion des Theorems von der Kunst als Nachahmung der Natur", p. 27.

[9] Harrison: *Ancient Art and Ritual*, p. 47.

[10] Coleridge: *Biographia Literaria* vol. 2, p. 6.

[11] *Fragment 23* – Sprague (ed.): *The Older Sophists*, p. 65. See also Nestle: *Vom Mythos zum Logos*, p. 320 and p. 324.

[12] Georges de Scudéry in his *Apologie du théâtre* (1639) – quoted from Bürger: *Die frühen Komödien Pierre Corneilles*, pp. 41–42.

The function of art, poetry, and illusion

Contributors to the present volume demonstrate that we cannot approach literature on ontological terms of fiction, because the very perception and cognition of art and reality reveal the limits of sensory response, the influence of social, cultural, and psychological conditioning. For the arts this is explicitly demonstrated by Barbara Stafford in her study on the development of technical and optical devices that enhance illusion in painting, as well as by Elinor Shaffer in her article on the "parergon, the merely ornamental, concealing the true subject" in painting.

The concept of illusion – in spite of the presumed constraints of subjectivity – has proved itself a crucial and unavoidable issue in literature and the arts. From the time of Mendelssohn's popular philosophical and psychological exploration of audience response through Adorno's effort to redeem aesthetic illusion from that twentieth-century attack which saw all illusory strategies in art as fundamentally propagandistic[13], illusion ceased to be discussed merely as imitation of reality – and thus was linked again with the original aesthetic discussion in ancient Greece.

Greek poetry and drama had a social function that differs totally from the modern. It actively participated in "the ritualistic and symbolic world of oral discourse"[14]. Actors and spectators were not yet separated as in modern theater[15]. The audience watched four performances a day, starting in the morning and lasting much of the day: "These daylong marathons were also political events."[16] The modern understanding of *mimesis* as imitation of 'nature' or 'reality' and modern interpretations of Aristotle's *Poetics* as a poetics of imitation has its origin in Plato's pejorative use of *mimesis* (in the tenth book of his *Republic*) as copying reality which itself is only an image of the idea. Plato's rational philosophy had to grapple against the elder sensuous or emotional means of preserving knowledge and social identity.[17] The poet, not the philosopher had his "central position as a link to the past, storer of knowledge, and educator of the youth".[18] Only in the context of this campaign *against* poetry and *for* his conception of ideas did he devaluate the *mimesis* of poetry from the original sense of "enactment of deeds and experiences, whether human

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[13] Cf. Sauder: "Argumente der Fiktionskritik 1680–1730 und 1960–1970".

[14] Definition from Stock: *The Implications of Literacy,* p. 526.

[15] Ruth Padel: "Making Space Speak". *Nothing to Do with Dionysos? Athenian Drama in Its Social Context*, pp. 336–365, here p. 338–339.

[16] "Introduction" ibid., p. 5.

[17] Oddone Longo: "The Theater of the *Polis*". Ibid. pp. 12–19, here p. 16.

[18] Sörbom: *Mimesis and Art,* p. 146. – See also Pfeiffer's remarks on this subject in the present volume p. 94.

or divine" to mere "copying the appearances of" something[19]. Greek poetry never attempted to produce illusion by actually imitating reality, giving a copy deceptive in its verisimilitude (an eighteenth century notion). In Greek tragedy the language (both of the words and of the body) "points out to a world outside which is truly haunted by furies, where gods journey over oceans, mad people wander over continents, prophecies flit around above a murderer's head; where ships sail towards us, away from us, ram each other and sink."[20] Theater did not attempt to procure scenic or stage illusion, poetry in general did not strive for an 'imitation' of reality, but for an enactment, presentation, or symbolization of human character and feeling. Ancient drama and epos are inconceivable without music, and all music was regarded "as representative and imitative" (*Laws*, Book 2, 668a)[21]. Lukács would agree. Although he insists on using his crucial term, "Widerspiegelung der Wirklichkeit" (reflection of reality), he includes also abstract forms like rhythm and ornaments in his concept. In his analysis of the 'general problems of *mimesis*' only Lukács's term is misleading.[22]

Not only "the basic character of works of art", but the "psychological explanation of the way in which we experience and react to works of art" is connoted in the concept of *mimesis*[23]. Even if we distinguish between *mimesis* (enactment, presentation) and *imitation* (of 'reality', 'nature'), both may have the same striking effect in the listener's or spectator's mind: *illusion*. Gorgias called this effect ἀπάτη, and Plato in the tenth Book of the *Republic* described the *mimema* (imitations) "as apprehended by a spectator or a listener" as an εἴδωλον, φάντασμα, or φαινόμενον"[24]. In discussing optical illusions, which he calls πλάνη (error), and other delusions like magic (γοητεία), Plato suggests that the power of calculation and measuring and weighing can serve as a remedy against these illusions, which actually are delusions (*Republic* 10, 602c/d): Plato certainly was full of fear of the 'magic' effect of *mimesis*[25]. When Hugo von Hofmannsthal tried to revive in his *Jedermann* (*Everyman*, 1911) the old magic and ritual functions of the pre-illusionistic morality play, he pointed out the non-illusionistic possibilities of aesthetic illusion by quoting Immermann's

[19] Keuls: *Plato and Greek Painting*, p. 24; Eva Keuls summarizes and slightly modifies the argument of Koller: *Die Mimesis in der Antike*. Now also Feldmann: *Mimesis und Wirklichkeit*, pp. 11–12.

[20] Ruth Padel: "Making Space Speak". *Nothing to Do with Dionysos?*, pp. 336–365, here p. 364.

[21] See also in Hellmut Thomke's essay, p. 253.

[22] Lukács: *Die Eigenart des Ästhetischen*, pp. 253–351: "Abstract forms of aesthetic reflection of reality", pp. 353–377: "General problems of Mimesis".

[23] Cf. Sörbom: *Mimesis and Art*, p. 11.

[24] Ibid. p. 145.

[25] Koller: *Die Mimesis in der Antike*, p. 57.

observations on the old english stage: "The false-illusionistic has been totally abandoned, whereas the only really illuding device, the spiritual-poetical, is sustained all the more."[26] The "mental experience" of Greek tragedy[27] is comparable to what Werner Habicht demonstrates in his essay about Shakespeare's illusions in the air.

It is because *mimesis* and fiction are overcharged with meaning, because they almost became myths in Roland Barthes' sense (*mimesis* became shallow as mere imitation of reality, fiction often seems to be reduced to philosophical and phenomenological-hermeneutic conceptions[28]), that the editors chose to focus on the concept of illusion, aesthetic as well as theatrical, including stage and scenic illusion (see, for example, the essay below by Reginald A. Foakes). By the end of the eighteenth century critical theory had added to the deliberation of aesthetic illusion the possibilities of referential illusion[29], in which art was to evoke, not a substitute reality, but a conscious awareness of illusion as illusion. As various essays in this volume show (e.g. Habicht, Brown, Pape), the practice long preceded the theory and is abundantly evident in pre-eighteenth-century art and literature.

Pragmatic and aesthetic reception

Brecht's effort to rid the theater of illusionism, a problem addressed in Philip Brady's contribution in this volume, continues to stir controversy. Peter Handke is right when he argues: "I looked upon Brecht's disillusioning always demanding illusion for disillusion only as a whole bag of tricks [dt.: fauler Zauber = idle magic]; again reality was feigned where there was only fiction." But Handke is on the wrong track when he continues: "In my first plays I therefore confined the theatrical action to the words themselves, their contradictory meaning impeding an action and an individual story."[30] Since Paul Verlaine, Arthur Rimbaud, Stéphane Mallarmé, and the subsequent Dada movement, it has been the poet's dream to free words from their reference to reality, to create a world out of words, but words always refer quite pragmatically to the 'given' world. Every text,

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[26] Hofmannsthal: "Das Spiel vor der Menge". *Gesammelte Werke:* [vol. 3] *Dramen III*, p. 105. — On the function of liturgy and costum in popular theater see Bausinger: *Formen der "Volkspoesie"*, pp. 238—260.

[27] Ruth Padel: "Making Space Speak". *Nothing to Do with Dionysos?*, pp. 336—365, here p. 340.

[28] See also Pfeiffer: "Schwierigkeiten mit der Fiktion" (Review of *Funktionen des Fiktiven*, ed. Henrich and Iser, 1983; *Ästhetischer Schein*, ed. Oelmüller, 1982; Assmann: *Die Legitimität der Fiktion*, 1980).

[29] See Stierle: "Was heißt Rezeption bei fiktionalen Texten", esp. pp. 362—367; while this book was going to press Gottfried Willems' comprehensive study *Anschaulichkeit* (1989) was published; the German term "Anschaulichkeit" is very close in meaning to "aesthetic illusion", but has the disadvantage of having no proper English equivalent.

[30] Handke: "Ich bin ein Bewohner des Elfenbeinturms" (1967). Handke: *Ich bin ein Bewohner des Elfenbeinturms*, pp. 19—28. here p. 27.

every word, referentially conjures some sort of *illusion* of reality. Karlheinz Stierle, in his informative study "Was heißt Rezeption bei fiktionalen Texten", differentiates between pragmatic and referential reception and tries to solve the crucial problem of language's nature: both kinds of texts, pragmatic as well as fictional, are primarily comprehended pragmatically, that is they create an illusion referring to reality.[31] Only by a *second reading* is the reader led from the initial illusory reading to a reading which comprehends the text as *fiction*[32] – of course, this is only valid in the context of modern aesthetic autonomy which has alienated literature from direct social function. Ergo: Even if the function of literature actually would be only its lack of function, the illusory effect of literature is inescapable, as most essays in this volume, directly or indirectly, acknowledge. Stierle in his theory of the second reading in a way modifies Mendelssohn's theory of aesthetic illusion, where a constant interchange between emotional illusion and rational illusion (referential reading/seeing) is supposed.

The quandary over the relation of language to reality, of signifier to signified, has been discussed since Plato, as Murray Krieger shows in his contribution. Schiller in his *Kallias oder über die Schönheit* pondered the dilemma that language shows a tendency towards the general and thus competes with poetry that wants imagination (*Anschauung*). Nietzsche introduced fundamental critique of language: he maintained that language offers no adequate expression of all realities[33]. For Nietzsche and his recent followers, man constructs in language a world of its own beside the 'other' world.[34] Constructivists, like Watzlawick in his opening essay, also question the 'other' world. But Nietzsche and his devotees ignore the different functions of language. Fritz Mauthner, founder of the modern critique of language, clearly differentiates between language as a tool of cognition or philosophy and language as a means of literature and poetry. Though he calls – following Nietzsche – philosophy delusion (*Täuschung*), poetry for him, giving only images of images of images, and consequently remaining inside the realm of language[35], has a certain power to evoke emotion, and thus the poet's language can

[31] Stierle: "Was heißt Rezeption bei fiktionalen Texten", pp. 347–348; see also Iser: *Der Akt des Lesens*, esp. pp. 175–256: "Die Erfassungsakte des Textes"; and from a more linguistic view Kern: "Wie baut sich im Leser eine fiktive Wirklichkeit auf?" Cf. also Rainer Warning: "Rezeptionsästhetik als literaturwissenschaftliche Pragmatik". *Rezeptionsästhetik*, pp. 9–41, here p. 32.

[32] Stierle: "Was heißt Rezeption bei fiktionalen Texten", pp. 367–368.

[33] Nietzsche: "Über Wahrheit und Lüge im aussermoralischen Sinne". *Sämtliche Werke* vol. 1, p. 880.

[34] Nietzsche: "Menschliches, Allzumenschliches". Ibid. vol. 2, p. 30.

[35] Cf. the basic study of Kühn: *Gescheiterte Sprachkritik*, pp. 69–73 (philosophy), pp. 58–64 (poetry).

overcome the split between language and reality — we could add: through aesthetic illusion.

The non-illusionistic, aesthetic force of poetry can be illustrated with Lewis Carroll. Humpty Dumpty in *Through the Looking-Glass* says to Alice: "There's glory for you!" Alice does not understand.

> "I don't know what you mean by 'glory' ", Alice said.
>
> Humpty Dumpty smiled contemptuously. "Of course you don't — till I tell you. I meant 'there's a nice knock-down argument for you!' "
>
> "But 'glory' doesn't mean 'a nice knock-down argument'," Alice objected.
>
> "When *I* use a word," Humpty Dumpty said, in a rather scornful tone, "it means just what I choose it to mean — neither more nor less."
>
> "The question is," said Alice, "whether you *can* make words mean so many different things."
>
> "The question is," said Humpty Dumpty, "which is to be master — that's all."[36]

Of course, poetry cannot radically push meaning beyond a word's range of connotations. Humpty Dumpty is like those modern writers, as Werner Wolf describes them in his study on "Illusion and Breaking Illusion in Twentieth Century Fiction", who desire to go beyond aesthetic illusion. Carroll also gives us a perfect example for the power of language over reality. Passing through a wood "where things have no names", Alice meets a fawn; not until they leave the magic forest does the fawn recognize the 'real' relations: " 'I'm a Fawn!' it cried out in a voice of delight. 'And, dear me! you're a human child!' A sudden look of alarm came into his beautiful brown eyes, and in another moment it had darted away at full speed."[37] Carroll shows that we are captured in the prison of language, and that aesthetic illusion of literature can function to make this prison visible.

Though many of the contributors focus on the eighteenth and nineteenth centuries as the main periods of theoretical discussion of aesthetic illusion, one central issue could not be discussed at length: the question whether social change and social status, of a reader and text or spectator and theater, involve different types of illusion. In spite of their various approaches, studies in literary reception rely on the same more or less differentiated categories of attitudes towards literature, following the distinction between aesthetic and practical norms like Jan Mukařovský[38]. Georg Jäger, following him, distinguishes three kinds of non-aesthetic reception: (1) the edifying, (2) the didactic, and (3) the trivial-sentimental concretisation of a text. In all of these, he argues,

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[36] Carroll: *The Annotated Alice*, p. 269.

[37] Ibid. pp. 225—227.

[38] Mukařovský: *Kapitel aus der Ästhetik*, pp. 64—71 on the relation between the aesthetic and other norms p. 65).

an extra-aesthetic (*außerästhetische*) norm dominates[39]. This distinction, inspired by the aesthetics of autonomy, is problematic, especially if pragmatic reception is regarded as a lower type of reception. Wulf Koepke and Volker Neuhaus both argue, below, that pragmatic reception often is *aesthetically* intended to heighten the effect; both also demonstrate that illusion in narrative is evoked quite differently *and* has quite a different function than in theater. Narration can use devices that have the same structure, that are written or told with the same words as in historical documents. Nor are these devices peculiar only to popular fiction.[40]

If the development of narrative is seen historically from the medieval through the early modern period, the *exemplum* must certainly be recognized as a prototype of narration. Yet it was not regarded as fictitious, but rather as a test of truth[41]. And truth, of course, did not refer to the facts of reality, but to the eternal truth of God's creation. Eugene Cunnar in the present volume discusses the related problem of illusion perceptible through the physical eye and vision with John Donne. There is certain evidence that this conception of the 'reality' of fiction's truth being *altera natura* (Scaliger) opened a field of a self-determined reality of its own for poetry which was no longer bound to the world of experience[42]. But for a long time there were no aesthetic signals: the conventions of narrative were the same in history and in fiction. Popular fiction, not only that which was based on the Bible, was understood pragmatically, even if the fictionality was not utterly disregarded.[43] The desire for pragmatic verification and illusion was shared during the Enlightenment by readers of both serious literature and popular fiction.[44] Popular (or lower) reception cannot be equated with non-aesthetic reception[45]. Certainly different genres involve different modes of illusion; two examples may illustrate this. In the middle of the last century a so-called "Volksbuch" was published

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[39] Jäger: "Werther und Wertherwirkung", p. 394.

[40] Cf. Müller-Salget: *Erzählungen für das Volk*, pp. 133, 295–297. — See also nineteenth-century statements on the relation of novel and reality in Steinecke (ed.): *Romantheorie und Romankritik in Deutschland* vol. 2, and Steinecke's comment ibid. vol. 1, p. 46–52: "Roman und Wirklichkeit".

[41] Cf. Kleinschmidt: "Die Wirklichkeit der Literatur. Fiktionsbewußtsein und das Problem der ästhetischen Realität in der Frühen Neuzeit", pp. 174–175.

[42] Ibid. pp. 183, 176.

[43] Cf. e.g. Moser: "Veritas und fictio als Problem volkstümlicher Bibeldichtung", esp. p. 187. — See also Hans Peter Neureuter: "Faktizität". *Enzyklopädie des Märchens* vol. 4, cc. 802–806 and Natascha Würzbach: "Fiktionalität". Ibid. cc. 1105–1111.

[44] Cf. Hillebrand: *Theorie des Romans*, p. 123.

[45] Anderegg: "Fiktionalität, Schematismus und Sprache der Wirklichkeit" differentiates between the higher estimated "Fiktivkommunikation" and the "schematische Kommunikation", that does not ask for interpretation or engagement; according to him the adventure novel, the crime novel, and a good deal of comic (obviously both in comedy

through many editions: *Ferdinand und Louise oder Liebe, Betrug und Mord*[46]. The anonymous story-teller intends to uncover and assemble the story which formed the basis of Schiller's *Kabale und Liebe*, and to hand it over to the public as a useful chap-book. To give the readers the illusion of an actual event, all missing motivations are supplied, and it is thoroughly explained why the *dramatis personae* act or think just as they do. By contrast, in *Liebe und Krawall*, a popular adaption of Schiller's drama dating from the end of last century, Schiller's prose was transformed into verses, according to the common people's desire for elevated expression[47]. Either the uneducated public at large also looks for certain aesthetic values in literature, or popular theater has to be regarded as preserving theater's the pre-illusionistic devices. That illusion may have quite a different character and function in the major genres is a subject further explored in the articles of Krieger, Foakes, Pape, Thomke, Koepke, Neuhaus and Wolf.

Phenomenological hermeneutic critique of aesthetic illusion

The problems of aesthetic illusion have prompted some critics to dismiss or deny the experience altogether. Illusion, it is said, is merely subjective; subjectivism disrupts and invalidates critical exposition. Gadamer, for example, repeats this argument in an uncompromising attack on illusion: "All such ideas as imitation, appearance, irreality, illusion, magic, dream, assume a relationship to something from which the aesthetic experience is different." Because it is a mistake "to conceive the mode of aesthetic being in terms of the experience of reality and as a modification of it", it becomes necessary to reject all critical approaches which assume subjective constructs.[48] Gadamer's prejudice against subjective grounds, although it stubbornly persists in much contemporary thought, is remarkably old-fashioned.

At the beginning of the nineteenth century, Goethe proudly insisted upon his "objective thinking" ("gegenständliches Denken") and took as an insult Schopenhauer's declaration that all the color phenomena described in the *Farbenlehre* were subjective. To be sure, late in his career Goethe was persuaded by Jan Purkinje that subjective phenomena could be scrutinized with scientific

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and novel) belong to this alleged lower kind of reception. — Cf. also Schenda's critique of the various kinds of hermeneutic aesthetics of reception, Schenda: "Die Konsumenten populärer Lesestoffe. Zur Theorie und Technik ihrer Erforschung". Schenda: *Die Lesestoffe der kleinen Leute*, pp. 30—41, esp. p. 37, and Schenda: *Volk ohne Buch*, passim.

[46] *Ferdinand und Louise* is a sort of pendant to the *Volksbuch-Werther* of the same publisher. — For the following see Pape: "Ein merkwürdiges Beispiel productiver Kritik", pp. 201—204.

[47] Haberlandt: "Volkstümliche Schauspiele in Krimml", p. 65; text of *Liebe und Krawall*: pp. 67—117.

[48] Gadamer: *Wahrheit und Methode*, p. 79; *Truth and Method*, p. 75.

objectivity.[49] It is curious that today, after two centuries of scientific experimentation in the subjective realms of sensory perception and neurophysiology, the term subjective should still prompt connotations of irrational or idiosyncratic. When administrators recently circulated among the faculty at a major university a questionnaire on the procedures for examinations and evaluations, the implication seemed to be that subjective examinations were unreliable. By subjective they did not seem to mean true-false and multiple choice questions which might well be answered with a high rate of success by guessing; nor by objective did they seem to understand the logical exposition of an analytical argument in essay form.

In positing an ontology of play as the ground for his hermeneutic in *Truth and Method*, Gadamer intended to escape the bonds of subjectivism. Kant's doctrine of a pure and intellectual aesthetic judgment he considered fatal to the aesthetic experience. In Schiller's aesthetics, play still occurs in the Kantian playground of subjectivism: one plays with one's own sensual and intellectual drives. Gadamer's concept of play involves the game strategy predicated by the work of art: instead of looking *at* the work as an object, one looks *through* it. Like Alice through the looking-glass, the player enters into the fictive world and engages its conditions. The player knows that he is only playing, but he takes the game seriously. The player is not the subject, the game itself is. It is a subject discovered only through playing. Gadamer insists on the primacy of playing as opposed to the consciousness of the player. Play has regulated order and movement: its purposeless purpose is achieved in the performance. It may require great effort, but it is not work, for we do not labor at, but take pleasure in, its creative movement. Its arbitrary rules challenge rather than inhibit performance.[50]

Because he wants to establish an ontological ground free from all taint of subjectivism, Gadamer endeavors to liberate the concept of play from possible connotations of illusionistic play-acting.

> I select as my starting-point a notion that has played a major role in aesthetics: the concept of play. I wish to free this concept from the subjective meaning which it has in Kant and Schiller and which dominates the whole of modern aesthetics and philosophy of man.[51]

The necessity of an ontological ground in traditional hermeneutic endeavor is, of course, the great argument of Gadamer's mentor — Heidegger. In *Being and Time*, Heidegger gives us three designations of *being*: *Sein*, *das Seiende*, and *Dasein*. His central term, *das Seiende*, refers to the entity, the being in being.

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[49] Cf. Burwick: *The Damnation of Newton: Goethe's Color Theory and Romantic Perception*, pp. 68–70, 73–77.

[50] Gadamer: *Wahrheit und Methode*, pp. 41–49, 97–105.

[51] Ibid. pp. 96, 99; Gadamer: *Truth and Method*, pp. 91, 93.

Our immediate experience of the world derives from our being in being. Our knowledge consists in sorting out and categorizing *das Seiende*, which brings forth questions about essence and existence, that is, about *Sein* and *Dasein*. The essentialist questions are transcendental and theological. The existentialist ones are historical and ontological. Human existence is constituted in history. The constitution of *Dasein* as being *and* time, is *ontic*; the hermeneutic method of interpreting the meaning of being is ontological.[52]

As an endeavor to reveal the truth of being, the ontological method entails three tasks: reduction (to ascertain ontic ground by setting aside transcendental concerns), construction (to give structure to our sense of what is "always already there" in our phenomenological experience of the world), and destruction (to dismantle critically those received concepts which were necessary to our construction, and to determine the source from which they were drawn). "Only through destruction", Heidegger declares, "can the ontology determine phenomenologically the authenticity of its concepts."[53]

Turning his phenomenological hermeneutic to literature, Heidegger must deal specifically with the possibility of creative expression in and through the determining historical *Dasein* of language. The historical apriority of language and the personal experience of language are brought together, Heidegger states, in the act of play. He takes, as a case study, the poetry of Hölderlin. In the context of Hölderlin's account of poetry as "the most innocent of all occupations" and language as "the most dangerous of all goods",[54] Heidegger seeks the ontic place of Hölderlin's play in language:

> Creative writing appears in the modest form of play. Unconstrained it engenders its world of images and remains day-dreaming in the realm of the imaginary. This play thereby takes itself away from the seriousness of decisions, which each time, in one way or another, make themselves culpable. For this reason, writing is fully harmless. And at the same it is ineffective, for it remains mere saying or talking. It has nothing of the deed, which reaches directly into reality and changes it. Poetry is like a dream, but no reality; a play with words, but no seriousness of action.[55]

The play is innocent, but the plaything is dangerous. Danger occurs whenever *das Seiende* threatens *Sein*. That threat always lurks in language,

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52 Heidegger: *Sein und Zeit*, pp. 3–4, pp. 8–15; *Being and Time*, pp. 28–49.

53 Heidegger: *Sein und Zeit*, pp. 5–6, pp. 15–27; Heidegger: *Die Grundprobleme der Phänomenologie*, pp. 26–32.

54 Letter No.173, January 1799 to his mother – Hölderlin: *Sämtliche Werke* vol. 6, 1, p. 311: "diß unschuldigste aller Geschäffte"; Fragment 37: *Im Walde*: vol. 2, 1, p. 325: "der Güter Gefährlichstes, die Sprache".

55 Heidegger: "Hölderlin und das Wesen der Dichtung" (1936). Heidegger: *Erläuterungen zu Hölderlins Dichtung*, pp. 32–33.

because its *signs* are readily taken for, but never are, the things *signified.* Language "as *Seiendes* [...] oppresses and inspires, and as *Nichtseiendes* causes illusion and disillusion".

> Language first produces the manifest places threatening being and causing confusion and thus the possible loss of being, that is – danger. But language is not only the danger of dangers, it also conceals in itself, necessary for itself, a continuing danger. To language is given the task of making *das Seiende* as such manifest and preserving it. In language, the purest and most secret as well as the most confused and common can come to word. Indeed, the essential word, in order to be understood and thus become for everyone a common possession, must make itself common.[56]

Play imitates the serious issues of life. In make-believe games, the child mimics, and is initiated into, the social conditions of maturity. Play, then, is also a language of signs that conjure, yet are not, the things signified. Thus poetry may look like play, yet not be. Play, as play, brings people together, but in such a way that everyone forgets himself in playing. In poetry, however, man is assembled upon the ground of his *Dasein* with all his energies alert. Although it involves a play with illusion, poetry, as poetry, consciously overcomes illusion:

> Poetry arouses the illusion [Schein] of the unreal and of the dream, as opposed to tangible and open reality, in which we think ourselves at home. And yet on the other hand what the poet says and conveys to be is the real.[57]

At this juncture, Heidegger's ontic place seems about to fall into subject-object dualism and become two places. Because danger and play remain co-present elements, poetry may seem to waver between illusion and reality. "Thus the nature of poetry seems to totter in its own illusion of externality", Heidegger acknowledges, "and yet it stands fast". Poetry stands fast because its is doubly grounded as expression and as communication: it establishes its "ground of being" ("Stiftung des Seins") in the coincidence of idea and poem and in the coincidence of poem and public.

Gadamer retrieves play from the implication of dream-like irreality. Elaborating Heidegger's criticism of modern subjectivism,[58] he argues that aesthetic consciousness is not abstract vision. To be sure, "the mode of being of what is observed 'aesthetically' is not presence-at-hand". The observer knows that, of course, and therefore deals with the experience conditionally – it is an "as-if" mode of being. The work of art, whether poetry or painting, possesses an inherent multistability that challenges

[56] Ibid. pp. 34–35.

[57] Ibid. p. 42.

[58] Gadamer: *Wahrheit und Methode*, p. 94; *Truth and Method*, p. 89.

differentiation. Gadamer likens it to the bafflement we experience with trick pictures:

> Only if we recognize what is represented are we able to "read" a picture, in fact that is what makes it, fundamentally, a picture. Seeing means differentiation. While we are still trying various ways of dividing up what we see or hesitate between versions, as with certain trick pictures, we don't yet see what is there. The trick picture is, as it were, the artificial perpetuation of this hesitation, the "agony" of seeing. The same is true of the literary work. Only when we understand a text – that is, at least be in command of its language – can it be for us a work of literary art.[59]

Because of the multistability and conditionality of the work of art, Gadamer proposes play as the key to ontological explanation. He seeks to keep the concept of play free of subjective implications by separating play from player. Play is a performance independent of the consciousness of a person who plays.

Gadamer's subtle separation of player from play is not only arbitrary, it is practically impossible. As William Butler Yeats queried, "How can we know the dancer from the dance?"[60] To account for player as well as play, dancer as well as dance, in aesthetic experience inevitably involves the complexity of subject-object dialectics. The mind may shift, of course, from subjective indulgence to objective scrutiny. Thus theories of aesthetic illusion grapple with a number of distinctions which pertain to making and breaking illusion. Whereas critics of the eighteenth-century tended to consider the experience of illusion as a dream-like spell to which one succumbed passively and involuntarily, most current theorists hold that the experience is active and voluntary.

Illusion, illusionism, delusion

This does not mean that the contributors to this volume agree in their definition of illusion; they often have to argue, as has been shown in the first part of this introduction, within their specific historic and generic context. Part of the problem is that, in spite of the efforts to distinguish illusion from delusion, the two words tend to be confounded. Although he endorses a definition of illusion as "aesthetic appearance and product of a creative imagination", Hellmut Thomke points out that illusion, for many people, still implies "a perfect imitation of reality" or "deception, self-deception and delusion". The question remains, if the artist should succeed in creating "a perfect imitation of reality", whether art is still art

[59] Gadamer: *Wahrheit und Methode,* p. 86; *Truth and Method,* p. 82.

[60] Yeats: "Among School Children". *The Poems,* pp. 215–217, here 217.

if we cannot recognize it as such. Precisely because it succeeds as "deception" and "delusion", a "perfect imitation" renders itself invisible as art.

Paul Watzlawick, in his essay on "The Illusion of 'Illusion' ", notes that in psychology illusion refers to "the incorrect, distorted interpretation of objective perception". He does not, however, build a case against illusion by affirming objective reality. Reality, he claims, "is *created* by him who believes to be *observing* it". From his constructivist perspective, Watzlawick holds that the tenable beliefs are the ones that work. If we want to label the ones that fail illusion — in the pejorative sense —, we should remember that even the working models are only mental constructs. Watzlawick's conclusion, that "there is no illusion, because there is only illusion", provides a fitting point of departure for the subsequent essays. But even in granting to Watzlawick his contention that reality and fiction are not opposites, it seems obvious that we perceive and respond to fiction and reality in different ways. Watzlawick — as well as Lawrence E. Marks —, it should be noted, deals with illusion as a cognitive phenomena. He cites his literary texts — Shakespeare, Kafka, Hesse, Fowles, Musil — as documentary sources. He doesn't ask how we experience literary characters and their actions.

In the nine theses with which he opens his essay, W. J. Thomas Mitchell contrasts "illusion" with "illusionism". The former draws from the natural perceptual and cognitive processes; the latter is developed as self-conscious, yet culturally determined artistic play with the conditions of the former. What is important to Mitchell is the capacity to shift attention from "illusion" to "illusionism". Although they vary in their terminology, all of our contributors presume a fundamental duality in aesthetic experience: illusion is somehow defined by the co-presence of its contrary. Apparently aspects of this duality have contributed historically to arguments whether aesthetic illusion is perceived with conscious awareness, whether it is a sustained or an off-again, on-again experience — now accepted, now rejected.

Murray Krieger explains that the dual response is not merely an attribute of mind, it is inherent in the nature of language. Like Hölderlin and Heidegger, Krieger confronts the "innocence" and "danger" of reference. In *Poetic Presence and Illusion*, he discusses the ways in which reference between signifier and signified shifts from metaphorical immediacy to metonymic disjuncture. Aesthetic illusion depends upon the sense of immediacy — words conjure things. Such illusion, he says, is accompanied by an "awareness of make-believe". Metaphor creates an "as-if reality, which is not to be confounded with the factual reality to which we may tend to relate it". Metaphor, in other words, is always attended by metonymy. Metonymy transforms visionary epiphany into aloof detachment or irony.[61]

[61] Krieger: *Poetic Presence and Illusion*, pp. xi–xiii, 182–187, 192–194.

In his present essay on "Representation in Words and In Drama: The Illusion of the Natural Sign", Krieger observes that drama reinforces the illusion of metaphorical presence because of the elaborate semiotics of performance and production. But even in the drama, awareness of the very paradox of referentiality, inherent in all semiotic constructs, liberates the audience from the bugaboo of delusion. Yes, the aesthetic experience depends upon a "semiotic desire for the natural sign", but it also derives a sophisticated pleasure "consciousness of illusion *as* illusion". Participating in illusion does not mean succumbing to delusion. An educated "self-awareness and self-wariness" can transform the sensory experience of dramatic art into an occasion of intellectual discovery.

Illusion and the Cognitive Sciences

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The Illusion of 'Illusion'

This first panel of our conference is entitled 'Illusion and the Cognitive Sciences' and thus deals with *illusion* as a fundamental issue. I hope that my competence will allow me to make a useful contribution at least to this basic aspect of our topic.

In my field the term *illusion* refers to the incorrect, distorted interpretation of objective perception. This definition separates illusions from hallucinations and delusions, i.e. pseudo-perceptions of objectively nonexisting objects, a subject specifically dealt with by Frederick Burwick.

What to me is of basic importance is that both concepts, illusion as well as delusion, would be meaningless, unless contrasted by the assumption of a reality that exists objectively and independently of a perceiver or observer. The assumption of the existence of such a reality is the basis of *objectivism*.

From this assumption numerous deceptively simple and cogent conclusions seem to follow. For instance: The goal of science is the discovery of the way things really are, i.e. of truth. In the clinical field we talk about a person's 'reality adaptation' as the measure of that person's mental health or illness. Normal people (and especially psychotherapists) see the world as it 'really' is, while mentally or emotionally disturbed people have a distorted view of reality.

At first glance nothing could be more obvious than this belief in an objectively existing reality. But this is all it is: a *belief*. Neither time nor the theme of this conference permit me to do more than just hint at the negative, inhuman consequences of this belief: The event whose 200th anniversary we shall celebrate in just 134 days from today, the French Revolution, is a prime example. Its philosophy of enlightenment is of a seductive simplicity, contained in three sweeping suppositions:

1) The world is governed by rational principles;
2) The human spirit is capable of grasping these principles;
3) The human will is capable of acting according to these principles.

Yet, instead of leading humanity to final rationality, it brought about the invention of the guillotine as an indeed rational, time-saving device for the murder of over 40.000 human beings, and eventually dispatched itself by the re-introduction of yet another monarchy.

In total opposition to objectivism there exists another view of reality (and, again, that is all it is: another *view*) according to which reality is not discovered, but invented, *constructed*. For the philosophers present at this conference, this is old hat. The first references to constructivism can be found in the fragments of the Pre-Socratics; clear, unequivocal propositions, according to which of the 'real' reality we can only have an image, an interpretation, can be found in the writings af Kant, Hume, Schopenhauer and others. According to Kant, for instance, every error consists in taking the way we determine, divide or deduce concepts for qualities of the things in and of themselves. And Schopenhauer, in *The Will in Nature*, writes:

> This is the meaning of Kant's great doctrine, that teleology is brought into nature by the intellect, which thus marvels at a miracle that is has created itself in the first place. It is [...] the same as if the intellect were astonished at finding that all multiples of nine again yield nine when their single figures are added together, or else to a number whose single figures again add up to nine; and yet it has itself prepared this miracle in the decimal system.[1]

Especially this quotation raises more than eyebrows, as it threatens the supposedly sacrosanct nature of mathematical truth. But even in the crystal-clear halls of the mathematical Olympus, controversy has long been raging regarding the question whether mathematical laws are discovered or invented. This how the mathematician Gabriel Stolzenberg summarizes this dilemma: "Once a mathematician has seen that his perception of the 'self-evident correctness' of the law [...] is nothing more than the linguistic equivalent of an optical illusion, neither his practice of mathematics nor his understanding of it can ever be the same."[2]

But mathematicians are not the only supposedly totally objective discoverers infected by the virus of the relativity of all scientific thought — the physicists are, if anything, even more outspoken. In his book *Mind and Matter* Schrödinger states: "Every man's world picture is and always remains a construct of his mind and cannot be proved to have any other existence."[3] — And Heisenberg on the same subject:

> The reality that we can talk about is never the 'a priori' reality, but a known reality shaped by us. If with regards to this latter formulation it is objected that, after all, there is an objective world, independent from us and our thinking, which functions, or can function, without our doing, and which is that which we actually mean when doing research, this objection, so convincing at first blush, must be countered by pointing out that even the expression

[1] Schopenhauer: "Über den Willen in der Natur". *Sämtliche Werke* vol. 3, p. 346.

[2] Stolzenberg: "Can an Enquiry into the Foundations of Mathematics Tell Us Anything Interesting about Mind?" *The Invented Reality*, pp. 300—310, here p. 308.

[3] Schrödinger: *Mind and Matter*, p. 44.

> 'there is' originates in human language and cannot, therefore, mean something that is unrelated to our comprehension. For us 'there is' only the world in which the expression 'there is' has meaning.[4]

Heinz von Foerster is one of the scientists who insists on the inseparability of observer and observed and thus goes beyond Heisenberg's warning of the effect of any observation on the object of observation:

> We are now in the possession of the the truism that a description (of the universe) implies one who describes (observes) it. What we need now is the description of the 'describer' or, in other words, we need a theory of the observer. Since it is only living organisms which would qualify as being observers, it appears that this task falls to the biologist. But he himself is a living being, which means that in his theory he has not only to account for himself, but also for his writing this theory.[5]

And even more radical (in the original sense of 'going to the roots') the Chilean biologist Francisco Varela in his *Calculus for Self-Reference*:

> The starting point of this calculus [...] is the act of indication. In this primordial act we separate forms which appear to us as the world itself. From this starting point, we thus assert the primacy of the role of the observer who draws distinctions wherever he pleases. Thus the distinctions made which engender our world reveal precisely that: the distinctions we make – and these distinctions pertain more to a revelation of where the observer stands than to an intrinsic constitution of the world which appears, by this very mechanism of separation between observer and observed, always elusive. In finding the world as we do, we forget all we did to find it as such, and when we are reminded of it in retracing our steps back to indication, we find little more than a mirror-to-mirror image of ourselves and the world. In contrast with what is commonly assumed, a description, when carefully inspected, reveals the properties of the observer. We, observers, distinguish ourselves precisely by distinguishing what we apparently are not, the world.[6]

The modern constructivist thinkers have an important forerunner in the person of the German philosopher Hans Vaihinger. In 1911 Vaihinger published his main work, *Die Philosophie des Als Ob* (*The Philosophy of As-If*) which had an enormous impact on his contemporaries, including Alfred Adler and Sigmund Freud. On a mere 800 pages and on the basis of countless practical examples he develops the thesis that, always and inevitably, we work with purely fictitious assumptions which, however, can lead to practical results, after which the fiction 'drops out'. One of his examples is the judge who uses the fiction of free will in order to arrive at a sentence: "The premise, whether man is really free, is not examined by

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[4] Heisenberg: *Gesammelte Werke* vol. 1, p. 236.

[5] Foerster: "Notes on an Epistemology for Living Things", p. 258.

[6] Varela: "A Calculus for Self-Reference", p. 22.

the judge. In actual fact this premise is only a fiction which serves for the deduction of the final conclusion; for without the possibility of punishing men, of punishing the criminal, no government would be possible. The theoretical fiction of freedom has been invented for this practical purpose."[7]

Another one of Vaihinger's examples[8] is that of the so-called *imaginary* number i which is arrived at by computing the value of x in the seemingly innocent equation $x^2 + 1 = 0$. By transfering 1 to the other side of the equation we obtain $x^2 = -1$, and hence $x = \sqrt{-1}$. This result is in total contradiction to the basic rule of arithmetic according to which no number – positive, negative or zero – multiplied by itself, can give a negative value. And yet, while in my field we write elaborate books on how to avoid the disastrous consequences of paradoxes in human life, physicists, engineers, computer experts etc. have nonchalantly included the totally 'fictitious' number i in their calculations and have thereby arrived at practical, concrete results. (The entire field of modern electronics, for instance, would otherwise be impossible.)

I do not know whether Vaihinger knew of Robert Musil's work. In the latter's novel, *Young Törless*, the hero is confronted for the first time with the mind-boggling qualities of i and says to a fellow student:

> Look, think of it like this: in a calculation like that you begin with ordinary solid numbers, representing measures of length or weight or something else that's quite tangible – at any rate, they're real numbers. And at the end you have real numbers. But these two lots of real numbers are connected by something that simply doesn't exist. Isn't that like a bridge where the piles are there only at the beginning and at the end, with none in the middle, and yet one crosses it just as surely and safely as if the whole of it were there? That sort of operation makes me feel a bit giddy, as if it led part of the way God knows where. But what I really feel is so uncanny is the force that lies in a problem like that, which keeps such as firm hold on you that in the end you land safely on the other side.[9]

The typical, 'commonsensical' objection to all of this is: Maybe – but there *is* a real world out there, I can see, smell, grasp it ... To which the constructivist reply is: There are colors 'out there' only because we have eyes; out there, the physicists teach us, there are only electro-magnetic waves, these are 'real'. But then, of course, one can point out to the physicist that by the same logic there are electro-magnetic waves 'out there' only because the physicists have put together gadgets which react to something out there which they call 'electro-magnetic waves', and so

[7] Vaihinger: *The Philosophy of 'As If'*, p. 111.

[8] Ibid. p. 215.

[9] Musil: *Young Törless*, pp. 106–107.

on in infinite regress. Let us remember Heisenberg's *caveat*: 'There *is* a world ...' belongs to the linguistic, not the 'real' domain.

But propositions belonging to the linguistic domain are not merely of an illusionary nature, they have a most fascinating potential of creating a 'reality' which through the process of recursion proves their own truth. In Karl Popper's sense they are *self-sealing* and *unfalsifiable*. Again an example from my field: Different and partly contradictory as the classical schools of psychotherapy are among themselves, they have one basic assumption in common, namely that change in the present can only be achieved by an analysis of the origin and the evolution of the patient's pathology in the past. The belief in the curative power of 'insight' is nothing but an unproved and unprovable assumption. Yet, it creates a situation in which there are only two possible outcomes, and both confirm the correctness of the assumption: If as the result of the analysis of the past the patient improves, this clearly demonstrates the correctness of the assumption. If he does not improve, this 'proves' that the search for the causes in the past has not yet been pushed far and deep enough into his unconscious. Thus the assumption is vindicated both by the success and by the failure of its practical application. There is not too much difference between this reasoning and the proverbial schizophrenic who eats the menu card rather than the food listed on it, complains of its bad taste and begins to suspect that somebody wants to poison him ...

Friedrich von Spee (1591-1635), the famous author of *Cautio Criminalis* (in English: *Book about the Witches' Trials*) provides particulary horrifying examples of 'realities' created by the self-sealing nature of an unquestioned belief. Spee was a priest who had extensive contacts with men and women accused of witchcraft, and witnessed the most inhumane torture scenes. He wrote the book in order to convince the courts that on the basis of their trial procedure and rules of evidence, nobody could ever be found innocent. First of all, there was no doubt in the judges' minds that God, in His wisdom and love, would protect the innocent; not being saved by Him was 'therefore' already proof of guilt. Furthermore, a suspect's life was either righteous or not. If not, this was additional proof of his guilt; if yes, this was reason for added suspicion, for it is well known that witches are capable of creating the impression of being virtuous and honorable. Once in jail, suspects would either be fearful or not. If they were fearful, this in itself was proof of guilt; if calm and confident, this very attitude was suspicious, for it is known that the most dangerous witches are capble of appearing innocent and calm. These are just some of the most glaring aspects, but by no means all. In this situation, *any* behavior, such as self-defence, the reactions to torture, confessions, attempted escapes etc., constituted additional evidence.

Unfortunately, reality-constructions through illusionary assumptions are by no means limited to such unenlightened periods of history. They are, as Vaihinger so convincingly demonstrated, the essence of our being-in-the-world, to use this existentialist term. At the end of April 1988, the local edition of the Italian daily *La Nazione* reported a strange incident that had taken place in the general hospital of the Tuscan city of Grosetto. An acutely schizophrenic woman had been admitted on an emergency basis and was now to be taken back to her native Naples to undergo psychiatric treatment. When the ambulance attendants came to pick her up and enquired where she was, they were told: 'She is in there'. Upon entering that room they found the patient sitting on her bed, fully dressed and handbag ready. When they asked her to come along, she quickly began to decompensate; she screamed, resisted violently and, above all, exhibited the well-known symptoms of depersonalisation. She had to be forcibly tranquillized before she could be carried downstairs. About two hours later, as the ambulance approached Rome, it was stopped by a police car and the driver was told to take the lady back to Grosseto. Instead of the patient they had picked up a women who was waiting to pay a visit to a relative who had just undergone minor surgery. — The importance of this incident for my subject is that once the mistake was committed a 'reality' was thereby created in which *any* attempt by this woman to correct this mistake was additional proof of her 'insanity'. Of course, she was 'depersonalizing' by claiming to be someone else, etc.etc.

In the first half of my description of this incident, I have attempted, in a very dilettantic fashion, to re-create in the reader's mind the same illusion under which the ambulance attendants had been laboring. Admittedly, it is not an aesthetic illusion, but nonetheless an illusion which, until its denouement, appeared to be the written representation of a specific 'reality'.

The essence of such illusions finds its most artistic expression in many of the classic tragedies. In his seminal contributions to this subject, Rolf Breuer[10] has shown how in *Oedipus Rex* and in *Othello* 'self-fulfilling prophecies' (which by definition are of a totally illusionary nature) can and do create stark realities. In *Othello*, through the words of Iago's wife Emilia, Shakespeare gives this definition of the self-fulfilling, self-referential way the jealous see their world:

> They are not ever jealious for the cause,
> But jealious for they're jealious. It is a monster
> Begot upon itself, born on itself. (III.iv.160–163)[11]

[10] Breuer: *Tragische Handlungsstrukturen*, Chapter 3; Breuer: *Die Kunst der Paradoxie*.

[11] "The Tragedy of Othello, the Moor of Venice". *The Riverside-Shakespeare*, p. 1227.

That the 'real' world is a construction and thus an illusion is beautifully presented by Hesse in *Steppenwolf* towards the end of the novel, where Harry Haller is introduced into the Magic Theater. In the words of his *psychopomp* Pablo, this theater "has many doors into as many boxes as you please, ten or hundred or a thousand, and behind each door exactly what you seek awaits you". In one of these boxes the Steppenwolf is introduced to a chess master who, interestingly, in the German original is referred to as an *Aufbaukünstler* (a construction artist). He explains: Science is wrong in so far as it holds that only

> "[...] a single, binding and lifelong order is possible for the multiplicity of subordinate selves. This error of science has many unpleasant consequences, and the only advantage of simplifying the work of the state-appointed pastors and masters and saving them the labours of original thought. In consequence of this error many persons pass for normal, and indeed for highly valuable members of society, who are incurably mad; and many, on the other hand, are looked upon as mad who are geniuses. Hence it is that we supplement the imperfect psychology of science by the conception that we call the art of building up the soul. We demonstrate to anyone whose soul has fallen to pieces that he can rearrange these pieces of a previous self in what order he pleases, and so attain to an endless multiplicity of moves in the game of life. As the playwright shapes a drama from a handful of characters, so do we from the pieces of the disintegrated self build up ever new groups, with ever new interplay and suspense, and new situations that are eternally inexhaustible. Look!"
>
> [...]
>
> He gently swept all the pieces into a heap; and, meditatively with an artist's skill, made up a new game of the same pieces with quite other groupings, relationships and entanglements. The second game had an affinity with the first, it was the world built of the same material, but the key was different, the time changed, the motif was differently given out and the situations differently presented.
>
> And in this fashion the clever architect built up one game after another out of the figures, each of which was a bit of myself, and every game had a distant resemblance to every other. Each belonged recognisably to the same world and acknowledged a common origin. Yet each was entirely new.
>
> "This is the art of life," he said in the manner of a teacher. "You may develop the game of your life and lend it animation. You may complicate and enrich it as you please."[12]

Essentially the same self-fulfilling prophecy seems to underly the reality that K., the protagonist of Kafka's novel *The Trial*, has constructed for himself. In his thirst for certainty and safety he constantly searches for clues, but all he finds is more uncertainty. And yet, towards the end of

[12] Hesse: *Steppenwolf*, p. 201.

the novel, in his conversation with the priest in the cathedral, the latter gives the key that would enable K. to leave the trap of his illusion: "The Court wants nothing from you. It receives you when you come and it dismisses you when you go."[13] In other words, it is K. himself who has constructed that illusion of court, persecution and imminent trial.

The intimate connection between supposed reality and illusion is the basic theme of another literary masterpiece, John Fowles' novel *The Magus*. The Magus is a rich Greek, Conchis, who is whiling away his time on the imaginary island of Phraxos by playing what he calls the *Godgame*. This game consists in creating intricate situations that totally undermine the reality constructions of the young men who come to Phraxos from Britain for one year to teach English at the local high school. As Conchis explains to his 'victim', Nicholas, he calls it the Godgame 'because' God does not exist and the game is no game. – In his review of the novel, Ernst von Glasersfeld, one of the leading exponents of radical constructivism, has this to say:

> Fowles comes to the core of constructivist epistemology when he lets Conchis explain the idea of coincidence. Nicholas is told two dramatic stories, one about a wealthy collector whose château in France burns down one night with everything he possesses; the other about an obsessed farmer in Norway, who has spent years as a hermit awaiting the coming of God. One night he has the vision he has been waiting for. Conchis adds that it was the very same night that the fire destroyed the château. Nicholas asks: 'You are not suggesting ...?' Conchis interrupts him. 'I am suggesting nothing. There was no connection between the events. No connection is possible. Or rather, I am the connection, I am whatever meaning the coincidence has.' This is an everyday paraphrase of Einstein's revolutionary insight that in the physical world there is no simultaneity without an observer who creates it.[14]

In the constructivist view, then, the world is *created* by him who believes to be *observing* it. But is this not simply a warmed-over version of age-old nihilism? How can one deny that there *is* a world out there, to whose conditions and rules every living being must adapt for survival? To this commonsensical questions radical constructivism has even more outrageous answer: Of the 'real' reality – if it exists – we can only know what it is *not*. To quote Ernst von Glasersfeld again, this time from his *Introduction to Radical Constructivism*:

> Once knowing is no longer understood as the search for an iconic representation of ontological reality, but, instead, as a search for *fitting* ways of behaving and thinking, the traditional problem disappears. Knowledge can now be seen as

[13] Kafka: *The Trial*, p. 278.

[14] Glasersfeld: "Reflections on John Fowles's *The Magus* and the Construction of Reality", p. 445.

> something that the organism builds up in the attempt to order the as such amorphous flow of experience by establishing repeatable experiences and relatively reliable relations between them. The possibilities of constructing such an order are determined and perpetually constrained by the preceding steps in the construction. This means that the 'real' world manifests itself exclusively there where our constructions break down. But since we can describe and explain these breakdowns only in the very concepts that we have used to build the failing structures, this process can never yield a picture of a world which we could hold responsible for their failure.[15]

The conclusion? *There is no illusion, because there is* only *illusion.*

[15] Glasersfeld: "An Introduction to Radical Construtivism". *The Invented Reality*, pp. 17–40, here p. 39.

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Synaesthesia: Perception and Metaphor[1]

Synaesthesia clothes itself, one may say, in two layers of garments – in the uniforms of literary tropes and in the skivvies of perceptual images; for synaesthesia appears both in language and in perception, as verbal metaphor relating the languages of different sense modalities and as perceptual experience conflating seemingly disparate sensory realms. In language and perception alike, I will argue, synaesthesia emerges from deep psychological similarities inherent in perceptual experience itself, similarities that provide some of the raw materials for linguistic extensions of meaning through poetic metaphor.

How do interrelations across different senses – synaesthesias, for short – express themselves in the two domains of perception and language? First, in perception, synaesthesia reveals itself in responses to light and color and form, to sound, to touch, taste, and smell. To a synaesthetic perceiver, music may produce visual images whose shape, brightness, and color follow the music's melody, harmony, and tempo – "le déreglement de tous les sens", to use Rimbaud's nice phrase, as long as it is not taken literally. Second, synaesthesia reveals itself in language – in both the prose of daily speech and the tropes of poetry. What I wish to argue is that, in synaesthesia, perception lays the groundwork for language; perceptual similarities provide the raw material, and the rules, by which people interpret synaesthetic or cross-modal metaphors. The network of synaesthestic correspondences constitutes a constellation of "natural signs",[2] through which objects can share partially hidden meanings. In this regard, synaesthetic tropes may appear illusory, but the illusions turn out to be psychologically pellucid.

Synaesthesia has often been imputed to writers, notably to poets such as Poe, Rimbaud, Baudelaire, and others whose lines expound cross-

[1] Preparation of this paper was supported from grants from the National Science Foundation and the National Institutes of Health of the United States.

[2] Stafford: *Symbol and Myth*, p. 31: "Humbert [de Superville] evolves the theory that certain directional lines and colors will infallibly, unconditionally, and for all men, convey certain emotions." Through a set of natural rules, one sensory quality can stand for another.

sensory connections. Théophile Gautier described what he claimed was the synaesthetic effect of hashish on perception, though his account was undoubtedly catalyzed by a large dose of poetic imagination:

> The notes quivered with such power that they pierced my breast like luminous arrows; presently, the musical air being played seemed to arise within me [...] the sounds gushed forth blue and red in a shower of electric sparks.[3]

Charles Baudelaire's sonnet *Correspondances* elaborates on the ways that "les parfums, les couleurs et les sons se répondent", there being

> [...] des parfums frais comme des chairs d'enfants,
> Doux comme les hautbois, verts comme les prairies,
> [...]

But what strikes me as much as any of the poetic lines in Baudelaire's work is his comment about the ways that drugs may induce synaesthetic experiences. "Les sons se revêtent de couleurs, et les couleurs contiennent une musique", he wrote, then went on, "tout cerveau poétique, dans son état sain et normal, conçoit facilement ces analogies."[4] Kandinsky made a related point, remarking that "the sound of colors is so definite that it would be hard to find anyone who would try to express bright yellow in the bass notes, or dark lake in the treble."[5]

Arresting and significant in these statements is their common expression of belief in synaesthetic universality. Both Baudelaire and Kandinsky – and others as well, but I shall not enumerate – judged the interrelations of sense modalities, and the rules of cross-modal connection, to be general characteristics of perception or conception. In saying this, they could, of course, be wrong. But I believe that they were quite correct. There are universals to synaesthetic perception and conception, and understanding these universals may help us to understand some of the principles of perceptual similarity, and, in language, to understand some of the principles of metaphor.

Synaesthesia and Perception

Synaesthesia as a perceptual phenomenon characterizes the experience of a relatively small fraction of the population, but to those who perceive the world synaesthetically, this experience can be pervasive and potent. Synaesthetic individuals report that stimuli normally considered appropriate to one modality, say music or voices, not only arouse the sensory and

[3] Gautier: "Le Club des Hachischins", p. 530.

[4] Baudelaire: "Les Fleurs du mal". *Oeuvres complètes* vol. 1, p. 11; "Les Paradis Artificiels. Le Poème du hachisch". ibid. p. 419.

[5] Kandinsky: *Concerning the Spiritual in Art*, p. 25.

perceptual qualities of sound — melody, timbre, pitch, loudness — but also regularly and reliably arouse qualities of another modality — form, color, brightness. Cross-modal relations in strong synaesthesia are unavoidable, dependable, rigid.

I can compress a great deal of information about synaesthetic perception into two main principles — these not being original with me.[6] First, synaesthesia consists largely of regular, systematic relations between or among dimensions of experience in different sense modalities. An example is the increase in brightness of a synaesthetic image with increasing loudness of the inducing sound, or the increase in brightness with increasing pitch, or the decrease in size with increasing pitch. Synaesthetic associations are rule-bound and organized, not haphazard.

The second principle concerns 'universality', that is, universality within that very small fraction of the population that experiences synaesthesia. This second principle states that synaesthetic perceivers agree among themselves as to many of the correspondences between or among dimensions of heterosensory experiences. The correspondences between loudness and brightness, between pitch and brightness, and between pitch and size are general characteristics of synaesthetic perception. Among synaesthetic individuals who perceive speech to invoke colors, the primary vowels [u], [o], [a], [e], and [i] order themselves both from low to high in pitch and, correspondingly, from black to white in color, with [u] deep toned and dark, [i] high and bright.[7]

Cross-modal Similarity in Perception

Most people are not synaesthetic. Few of us see colors or shapes when we hear voices or listen to music. Nevertheless, most of us do recognize or acknowledge similarities between sensory experiences of different modalities. If I cough or sneeze and ask which is brighter, most people respond: the sneeze. The reason, I believe, is that sneezes are more compact in terms of the distribution of energy over time, 'sharper', if you will, and generically higher in pitch. Pitch in particular seems crucial in evoking brightness. The association of brightness with pitch is not solely the domain of synaesthetic perceivers; it is, I believe, universal. Rules that characterize synaesthesia also characterize perceptual similarities in ordinary perception. One of the best known examples emerges in the pair of nonsense figures that Wolfgang Köhler constructed, a straight-lined one

[6] Riggs and Karwoski: "Synaesthesia". See also Karwoski, Odbert, and Osgood: "Studies in Synesthetic Thinking. III"; Marks: "On Colored-Hearing Synesthesia".

[7] Ibid., pp. 309–310.

that people readily match to the nonsense word "takete", and a rounded one that people match to the nonsense word "maluma".[8]

Let me describe more systematic empirical examples, ones that comes from perceptual matching studies. Here the task is simple. People are presented test stimuli one at a time from a given modality, say tones, together with array of stimuli from another modality, say colors. The person's task is to select from the array the one stimulus that best matches each test stimulus, the one that best goes with it.

When people match tones varying in pitch to visual surfaces varying in lightness, the results provide a direct analogue to the synaesthetic brightness of vowels.[9] The higher the pitch of a test stimulus, the lighter the color matched to it. Just as synaesthetic perceivers tell us that low-pitched tones are shaded darkly, in somber, black colors and high-pitched tones are shaded lightly, in white, pale colors, so do nonsynaesthetic individuals readily make corresponding matches – presumably without quite having the same multimodal experience that synaesthetics have.

Perceptual similarities reveal themselves in other perceptual dimensions too, for example, in loudness. People reliably match brighter lights with louder sounds; people also match higher-pitched sounds with smaller-sized objects.[10] All of these correlations mimic rules of synaesthesia.

But there is one important difference between synaesthesia proper and cross-modal perception: Synaesthesia is rigid, where cross-modal similarity is flexible. It is perfectly possible to instruct a person to match in a contranormative fashion. I could tell a person to match bright colors to low-pitched sounds rather than high-pitched sounds, or to soft rather than loud ones, and she or he would follow those instructions with little difficulty.[11] Presumably, the task of abstracting a perceptual dimension and inverting it poses no great cognitive problem. This capacity reveals one kind of 'flexibility' in cross-modal perception that is commonly absent from synaesthesia. Cross-modal perception is controlled, or controllable, by relatively high-level cognitive mechanisms that can act on abstract representations of perceptual dimensions by manipulating their polarity or direction, cognitive mechanisms that may play a central role in expressing similarity through tropes of language.

The matching experiments that I have described provide one way to ask people, through objective and quantitative operations, about what they 'know'. Matching operations tap the structure of certain psychological

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[8] Köhler: *Gestalt Psychology*, pp. 133–134.

[9] Marks: "On Associations of Light and Sound".

[10] Ibid. See also Marks: *The Unity of the Senses*, pp. 50–75.

[11] Stevens and Guirao: "Loudness, Reciprocality, and Partition Scales".

similarities, in this case, cross-modal similarities. This underlying structural knowledge may be explicit or implicit.

It also turns out that cross-modal similarities, cross-modal relations, reveal themselves in what I call functional processes. By this I mean that stimulation from different modalities produces interacting effects in perceptual processing, effects that follow the same rules that appear in synaesthesia and cross-modal perception. But the perceiver may be wholly unaware of the cross-modal relation, not cognizant that any interaction takes place.

A simple rule describes the interactions among pitch, loudness, or brightness: When a test stimulus in one modality is accompanied by an irrelevant accompanying stimulus from another modality, response is faster and more accurate when the accessory stimulus is synaesthetically 'matching' than when it is 'mismatching'.[12]

The structure of a typical experiment is straightforward. A person must discriminate between two possible values, say, of pitch, by pressing as quickly as possible one of two keys, one key corresponding to low pitch, the other to high pitch. On a given trial, simultaneous with the tone, a dim or bright light flashes. There is no reliable association between the light's brightness and the tone's pitch. Nevertheless, brightness exerts its effect: When pitch is low, responses are faster and more accurate when the light is dim, rather than bright; but when pitch is high, responses are faster and more accurate when the light is bright. Where the stimuli are synaesthetically congruent, responses are quicker and less prone to error.

Exactly the same principle connects loudness to brightness, pitch to spatial (low-high) position, and pitch to shape: There is an intimate relation between structural similarity, or cross-modal equivalence in perception, and functional similarity, or cross-modal interaction in perceptual information processing. Even though cross-modal matching is more flexible than synaesthesia, functional similarities in stimulus information processing are just as automatic, rigid, and consistent as are structural similarities in synaesthetic experience. And, to repeat, these functional interactions take place wholly without people's awareness of them. Perhaps the similarities in structure and in function stem from a common source.

The rule of synaesthetic congruence appears to be a general one. The speed and accuracy of sensory/perceptual discriminations follow directly from structural relations of synaesthesia and cross-modal perception.

Extensive analysis of the cross-modal equivalences shows them to be largely relational, not absolute — largely contextual, at least in the task I just described. What matters is not the particular levels of pitch or of

[12] Marks: "On Cross-Modal Similarity".

brightness, but their relation. Synaesthetic congruences resemble proportional metaphors. Interactions seem to take place in terms of a relative code, such that, for example, brighter equals higher pitched, and dimmer equals lower pitched.

Synaesthesia in Language: Metaphor

One way for psychological processes to mediate such relative comparisons is through language, by use of labels such as 'low', 'high', 'dim', and 'bright'. What is the connection between synaesthesia and cross-modal perception on the one hand and possible linguistic or semantic mediators on the other? Just as high-pitched sounds resemble bright lights perceptually, so perhaps the adjective 'high pitched' corresponds to the adjective 'bright' metaphorically. Indeed, I can ask, with regard to synaesthetic metaphors, the same questions I asked of synaesthetic and cross-modal perception: Does the comprehension of synaesthetic metaphor follow universal rules? Are the rules flexible or inflexible?

In answering these questions, I shall focus on three examples of abstract similarities between dimensions of auditory and visual experience. One is the resemblance between loudness and brightness, as when Conrad Aiken wrote of "sunlight [that] roars". Another is the resemblance between pitch and brightness, as when Percy Shelley wrote of "clear, silver, icy, keen, awakening tones". And the third is the resemblance between pitch and size, as when Wallace Stevens wrote of "sound blown [...] into shapes, the blower squeezed to the thinnest *mi* of falsetto".

These examples represent metaphorical uses of cross-sensory similarities in poetry. It is a practice that has long roots – occasional examples appear in the Bible: Variants, for instance, of the verse from *Job*, "the morning stars sang together", are repeated by poets ranging from Judah Ha-Levi to Dante Gabriel Rossetti. Is there, in the production or comprehension of cross-modal similes and metaphors, a systematic analogue to the universal rules evident in synaesthesia and cross-modal perception? One way to answer this question – not the simplest, but a way that particularly appealed to my psychophysical inclination – was to ask people to read poetic metaphors that invoke visual and auditory images, and then have the people tell me something about their conceptions.[13] People read fifteen poetic lines one at a time, and set the loudness of a tone and the brightness of a light to the levels that each line implied.

Three main results emerged. First, there was an overall correlation of brightness and loudness: When the light setting was low, the sound setting was soft; when the light setting was high, the sound was loud, hence a

[13] Marks: "Synesthetic Perception and Poetic Metaphor".

concordance between loudness and brightness. Quantitatively, the results mimic findings I had previously obtained when I conducted a perceptual study of cross-modality matching between loudness and brightness.[14] No poetry; no metaphors. Just present a light, and ask people to match a sound to it, or present a sound, and match a light to it. The implication is that when people interpret synaesthetic metaphors, they fall back on a kind of implicit knowledge about perceptual similarity.

Second, it is important to distinguish two kinds of metaphors among the stimuli used. In some metaphors, the attributes of both vision and hearing are implied, as in "sunlight roars". 'Sunlight' is bright, 'roars' is loud, and both terms suggest high intensity. But in other metaphors, only one attribute is defined. 'The sound of darkness' may be dim, as darkness is, but sound is otherwise undefined. What people reveal through their perceptual settings – that the 'sound of darkness' is soft – comes by metaphorical dint of 'darkness' being 'soft,' through a rule of cross-modal correspondence.

Finally, note that the correlation between loudness and brightness isn't perfect. Kipling's "dawn [that] comes up like thunder" was rated either too dim for its loudness or too loud for its brightness. One simple explanation is that dawn is prototypically less bright than thunder is loud. In the metaphor, each component is drawn toward the other by a process of interaction – in line with theories of metaphor such as that of Max Black.[15]

As an aside, notice that this analytic approach may appear to oversimplify what are clearly complex interrelations. Neither perceptual experience nor language is unidimensional. Perception and metaphor alike are complex, multifaceted, many-dimensional. "The dawn comes up like thunder" implies a host of temporal and affective properties in addition to simple characteristics of acoustic and optic intensity. Moreover, in my experiment each poetic line appeared in isolation, whereas meanings clearly can depend on the linguistic context. A few years ago, a student, Sarah Katherman, began to explore the influence of context on the meanings of synaesthetic metaphor.[16] The approach is unabashedly 'bottom-up'.

There is an easier way to ask these questions than by matching perceptual stimuli to words. We can dispense with the lights and sounds, and look at experimentally simpler judgments of metaphorical expressions, asking people to rate the loudness or brightness of individual words, like 'dawn' and 'thunder,' and phrases, like "the dawn comes up like thunder",

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[14] Stevens and Marks: "Cross-Modality Matching of Brightness and Loudness".

[15] Black: *Models and Metaphors* elaborates the theory.

[16] Katherman: *An Exploration of the Effects of Context on Synesthetic Metaphor.*

on a graphic rating scale (a visual analogue, or metaphor, of distance for intensity).

In a nutshell, the results of several experiments reveal that the rules of cross-modal correspondence hold in language as they do in synaesthesia and in cross-modal perception.[17] Just as synaesthetic people find loud sounds to induce bright images, and just as nonsynaesthetic people match bright colors to loud notes, so in metaphors, words describing acoustic events judged soft are also judged dim, and acoustic events judged loud are judged bright. 'Bright whisper' is louder than 'dim whisper', 'bright thunder' louder than 'dim thunder', while 'thunder' is brighter than 'whisper' and 'trumpet note' is brighter than 'piano note'.

Colors too have prototypical brightnesses, yellow and white being bright, red and green intermediate, black and brown dark. Their pitches correspond almost perfectly, from high to low, which is presumably why certain notes can be 'clear, silver, keen'.

Many other examples demonstrate the rule of cross-modal translation. The metaphoric correlation between dimensions can be virtually perfect. People seem to use their implicit knowledge about cross-sensory equivalences in interpreting meanings. One way to conceive of this knowledge is to consider the mental representation of sensory meanings as consisting of points in a multidimensional and multimodality space, so that sunlight, for instance, sits high on the axis of brightness, and high brightness corresponds to high loudness – and to high pitch.

To summarize, perceptual similarities have their direct counterpart in verbal similarities. Adjectives, nouns, verbs, all follow the general rule: Meanings along sensory dimensions translate across modalities by the very same rules that govern cross-modal perception.

Origins of Cross-Modal Similarities

Where do synaesthetic similarities come from? My own theoretical position is that some of the similarities are nonderivative characteristics of the mind and the nervous system, intrinsic to sensory perception, part and parcel of a "unity of the senses".[18] These similarities are initially perceptual in nature, though eventually they become incorporated into language and available for cognitive processing. Being inborn they provide a system of 'natural signs', linking color and pitch, shape and melody, in a network of original shared meanings. Other similarities may be learned, derived either from language or from perceptual associations.

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[17] Marks: "Bright Sneezes and Dark Coughs, Loud Sunlight and Soft Moonlight".

[18] Marks: *The Unity of the Senses*, especially Chapter 1.

Let us return for a moment to perceptual matches. In their simplest form, we can pose the perceptual questions: Is loud (versus soft) associated with dim or with bright? Is high pitched (versus low pitched) associated with dim or with bright? With small size or with large size? In a relatively simple empirical test, we can seek to answer the question by presenting two visual stimuli, one dim and one bright, or one large and one small, along with two auditory stimuli, one soft and one loud, or one low pitched and one high pitched, and ask people to match them. If loudness is like brightness, then people should uniformly match soft with dim and bright with loud. And so it goes for each similarity. Moreoever, if some similarities are intrinsic to perception, but others are learned, then we might expect to find the intrinsic ones evident even in very young children's matches, but the learned ones to develop over time and thus to appear later on.

In a recent study, a total of nearly 500 children from 4 to 13 years of age and more than 100 adults made such pairwise cross-modal matches.[19] Children of all ages and adults matched both high pitch and high loudness to high brightness, low pitch and low loudness to low brightness, showing thereby that even 4-year-olds recognize similarities between abstract dimensions of auditory and visual experiences (pitch-brightness; loudness-brightness). On the other hand, children did not consistently recognize a similarity between low vs high pitch and large vs small size until about age 11. This difference in developmental timetables affirms the notion that similarities of pitch-brightness and loudness-brightness are intrinsic perceptual properties, perhaps based on some commonality in underlying neurophysiological code, whereas the similarity of pitch and size may be learned, perhaps through association of size with resonance properties of objects. With greater size, resonance frequency falls, so that, when dropped on a table for instance, large objects thud while small ones ping.

These same 500 children also rated the meanings of literal and synaesthetic verbal expressions, for which we used rating scales of pitch, loudness, brightness, and size, making it possible for us to look developmentally at the comprehension of cross-modal metaphors, and thereby to compare perception and language directly.[20] Perhaps we can glean some idea of children's appreciation of similarities when cast in a verbal format, and of children's responsiveness to poetic metaphors.

The results of this quest tell a long story, from which I shall excerpt, summarize, and illustrate. Most important, the results make clear the fact that children can understand cross-modal relations in verbal form as long as the children recognize the similarities perceptually. In the simplest case,

[19] Marks, Hammeal, and Bornstein: "Perceiving Similarity and Comprehending Metaphor", pp. 13–59.

[20] Ibid.

the adjectives 'dim', 'bright', 'soft', 'loud', 'low pitched', and 'high pitched' translate directly from literal to metaphorical. 'Low pitched' and 'soft' are rated as dim, 'high pitched' and 'loud' as bright, even by very young children. Children interpret meanings metaphorically much as they match tones and colors perceptually.

The different developmental timetables hold in language as in perception; just as, in a perceptual matching task, children do not reliably associate high pitch with small size, nor low pitch with large size, until about age 11, so too not until about age 11 do they make corresponding metaphorical judgments of those adjectives, though they do make appropriate literal judgments.

A final point here concerns multidimensionality. Clearly, events in the world such as sneezing, coughing, and thundering are complex; and the corresponding perceptual experiences are multidimensional. Asking children and adults to judge a single attribute, such as pitch or brightness, seemingly simplifies the experimental task, but potentially oversimplifies it. 'Thunder', for example, is judged by adults to be loud as well as low pitched; the prototypical thunder seems to be the rolling version, not the clap or peal. But if 'thunder' is dim or dark by dint of its low pitch, it is bright by dint of its high loudness. The story that needs to be told about synaesthetically corresponding attributes and dimensions will eventually demand a much more complex model than the one that I have developed thus far.

To summarize, synaesthetic perception, including both synaesthesia proper and perception of auditory-visual similarity, reveals a pervasive set of cross-modal correspondences. Correspondences include relations between pitch and brightness, between loudness and brightness, between pitch and shape, and between pitch and size. We find these associations in the perceptual experience of synaesthetic perceivers, in the interactions between sensory stimuli when nonsynaesthetic perceivers make discriminative reactions, and in nonsynaesthetic perceivers' judgments of similarity — these being widely construed to include both perceptual matches and responses to cross-modal metaphors.

Moreover, we can trace these cross-modal similarities well back into childhood. Whereas some similarities, like pitch-size, appear only as adolescence is approached, others, like pitch-brightness and loudness-brightness, go back at least to four years of age, perhaps even earlier.[21]

Metaphors and Metonymies

Although at one time I believed that virtually all cross-modal correspondences were nonderivative, or intrinsic similarities, I now must argue that

[21] Lewkowicz and Turkewitz: "Cross-modal Equivalence in Early Infancy: Auditory-Visual Intensity Matching".

pitch-brightness and loudness-brightness are intrinsic similarities, whereas pitch-size probably is not. The latter may well be learned, either through language or through perceptual associations.

The same is true, I believe, of the well known warm and cool colors. The prototypical warmth of reds, oranges, yellows, the coolness of blues, greens, and whites, may derive from experienced associations of, say, sunlight and fire with warmth, of water and shading foliage with cool. Of the colors, perhaps black is the most reliable experiential associate of coolness, as when, in Shelley's words,

> [...] the heaven remained
> Utterly black, the murky shades involved
> An image, silent, cold and motionless.

Reliable correlations between color and temperature appear only around adolescence, but not earlier,[22] a finding consistent with the notion that the association of color with temperature is learned — and slowly at that.

Assuming that differences in developmental onsets reflect differences in origin, the differences point at least loosely to the distinction between metaphor and metonymy. Wallace Stevens's "blower squeezed into the thinnest mi of falsetto" surely sounds like a metaphor. Yet perhaps the thinness (size) of falsetto (pitch) is properly called a metonymic relation.

> Recently some bolder conceptions of metonymy and metaphor may be the characterizing structures of two poetic types — poetry of association by contiguity, of movement within a single world of discourse, and poetry of association by comparison, joining a plurality of worlds, mixing, in the striking phrase of [Karl] Bühler, a 'cocktail of spheres'.[23]

Both metonymy and metaphor are quintessentially psychological concepts — they are propaedeutically psychological. Synaesthetic metonymies and metaphors can rely — though they need not rely — on normative relationships, learned through association in the case of metonymies, or preformed in the case of metaphors. Note that this distinction describes but does not necessarily explain. A metonymic relation certainly may appear to represent a similarity, though we may not yet understand the process by which representation takes place. Under what conditions, if any, does the conjunction of objects or events lead, psychologically, to the perception or conception of the objects or events as being similar?

Association by contiguity and association by similarity are, of course, long-standing psychological principles of description and explanation, used in accounts of both behavior and mental activity. As William James wrote,

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[22] Morgan, Goodson, and Jones: "Age Differences in the Associations between Felt Temperatures and Color Choices".

[23] Wellek and Warren: *Theory of Literature*, p. 195.

> It would be one of the most important physiological discoveries could we assign the mechanical or chemical difference which makes the thoughts of one brain cling close to impartial redintegration, while those of another shoot about in all the lawless revelry of similarity.[24]

The "lawless revelry of similarity" is a splendid phrase to describe at least certain kinds of creativity. And similarity lies at least partly at the root of creative expression in language.

But what does this say of synaesthesia? I must confess that the range of normative synaesthetic metaphors – even if we include synaesthetic metonymies – is sparse. Not even all sensory metaphors reduce to perceptual norms. Moreover, the range of poetic metaphor is enormous; metaphors in poetry range widely and richly, varying in texture and subtlety – consider the elegant tropes of metaphysical poets like John Donne. Still, I cling to the belief that, even given their limitations, synaesthetic metaphors may tell us something interesting and important about the process of metaphor making in general, about the mechanisms of what Coleridge called creative "imagination".[25]

Synaesthetic metaphors and synaesthetic metonymies reveal universals of perceptual experience. If my arguments are correct, then certain metaphorical similarities – certain cross-modal similarities – may be wired into our perceptual mechanisms. Should I then put the word metaphorical in quotes? For the objection might be raised that if similarities are hard-wired, they should not be considered metaphorical at all. If the similarity between high pitch and high brightness is given in perception, as is, say, the similarity between aqua and green colors, why call only the former metaphorical?

The answer presumably rests on a difference in the kinds of categories, in the difference between 'similarity among similars' and 'similarity among dissimilars'. That brightness belongs to vision and pitch to hearing makes their similarity at least potentially metaphorical, given the potential recognition that sight and hearing belong to different domains. Thus calling a sneeze bright or a cough dark involves at least a modest breaking of those vessels that 'contain' modalities. In their review of creativity and perception, John Flowers and Calvin Garbin postulate the existence of what they call an "executive process" operating in creativity, a process that evaluates and manipulates abstract knowledge, including knowledge about cross-modal similarities.[26] Synaesthetic – perceptual – similarities provide raw materials for higher-level mental activities. To the extent that metaphoric competences develop out of perceptions and conceptions of

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[24] James: *Principles of Psychology* vol. 1, pp. 582–583.

[25] Coleridge: *Biographia Literaria*, vol. 1, p. 304.

[26] Flowers and Garbin: "Creativity and Perception".

similarity, the study of cross-modal or synaesthetic metaphor may provide a model system to study how metaphor develops, through childhood, out of perceptual similarity.

Synaesthetic similarities may be given innately, but they are nonetheless discovered, and discoverable. Although one may oppose discovery and creation, nevertheless discovery and creation can be closely connected. But what is it that is discovered? In the case of synaesthetic metonymies – between pitch and size; between color and temperature – we learn something about correlations in the world (even if we do not recognize them as correlations but conceive of them as similarities). In the case of synaesthetic metaphors, we learn something about qualities of our own phenomenological experience. There is nothing 'out there' in brightly glowing objects and high-pitched sounds that makes them alike. But there is something in common within our perception itself – and, if we wish to be optimistically reductionistic, something in common in the activity of the visual and auditory nervous systems. Similarities given in phenomenal experience – or in the nervous system – become available for discovery: And it is in particular through language that we are able to make these kinds of discovery, which thereby links the natural signs of synaesthesia, with their illusion of sensory confusion, to the natural signs of cross-modal perception, with their expression as aesthetic illusion in literature.