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Perception and Action Notes on the History of Their Separation as Concepts in Medieval Europe

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One eye witnesse is better to be belyved
than a thousand eare witnesses besydes
Philip Stubbes

1. *Introduction*

How we see and hear belongs to the common stock of humankind. But what we select for our own vision and audition out of the myriad of visible and audible objects in the world is decided in accordance with changing modes of perception. Hence, what artists and musicians perceive and what is perceived as art by viewers and listeners does not remain constant, but varies across space and changes across time. It falls with in this argument to say that pictures and pieces of music as specific artistic media have come to be regarded as the results of the overlap between, first, acts of seeing and hearing as physiological constants and, second, the mode of perception as a variable.[1] Thus, whenever the communication between what the artist or the musician wishes to express and what the viewer or listener can perceive is to be successful, visual and audial perception has to follow certain specific standard modes which can facilitate the commu-

1 T. Brennan, M. Jay, eds. *Vision in Context. Historical and Contemporary Perspectives on Sight* (New York, London, 1996). N. Bryson, *Vision and Painting. The Logic of the Gaze* (New Haven, 1983). D. de Chapeaurouge, *'Das Auge ist ein Herr, das Ohr sein Knecht'. Der Weg von der mittelalterlichen zur abstrakten Malerei* (Wiesbaden, 1983), 1-85. Cf.: R. Arnheim, *Kunst und Sehen* (Berlin, New York, 1978). G. Boehm, 'Zu einer Hermeneutik des Bildes', Boehm, H.-G. Gadamer, eds. *Seminar. Die Hermeneutik und die Wissenschaften* (Frankfurt, 1978), 444-471. E. H. Gombrich, *Norm and Form*, 2nd ed. (Oxford, 1971). Gombrich, *Art and Illusion*, 4th ed. (Oxford, 1972), 10-11. G. Hermeren, *Representation and Meaning in the Visual Arts* (Lund, 1969). W. Ivins, *Prints and Visual Communication* (New York, 1969). D. Kamper, *Zur Geschichte der Einbildungskraft* (Reinbek, 1990). G. Kauffmann, *Zum Verständnis von Bild und Text in der Renaissance* (Opladen, 1980). M. Kemp, 'Form "Mimesis" to "Fantasia". The Quattrocento Vocabulary of Creation', *Viator* 8 (1977), 347-398. P. O. Kristeller, *Humanismus und Renaissance*, 2 vols (Munich, 1974). G. Pochat, *Der Symbolbegriff in der Ästhetik und Kunstwissenschaft* (Cologne, 1983). W. Raith, *Die Macht des Bildes. Ein humanistisches Problem bei Gianfrancesco Pico della Mirandola* (Munich, 1967). E. Rebel, *Faksimile und Mimesis* (Munich, 1981). M. Schapiro, *Words and Pictures* (The Hague, Paris, 1973). J. Soskice, 'Sight and Vision in Medieval Christian Thought', T. Brennan, M. Jay, eds. *Vision in Context* (New York, London, 1996), 29-43. W. Weidlé, 'Vom Sichtbarwerden des Unsichtbaren', in: Weidlé, *Wandlungen des Paradiesischen und Utopischen. Studien zum Bild eines Ideals* (Berlin 1966), 1-9.

nication of messages. Standard modes of perception are the grammar of visual and audial perception which detemines the patterns of interaction between the artist or the musician as the senders of messages and the viewers of listeners as the receivers of messages. The grammar of perception may or may not be explicit. If it is explicit, it can be traced in normative texts which are usually laid down in writing. If it is not explicit, it can only be reconstructed tentatively from extant pieces of art and music, in the same way as the grammar of a spoken language can be reconstructed from current usage. This implies that, as a spoken language has a grammar even if it is not explicitly reflected, pieces of art and music follow standard modes of perception, even when explicit standards are not on record. Instead, the processes of making explicit the standard modes for the perception of visual and audial art reflect in themselves changes of perception. The consequence is that, when standard modes of perception change, all those pieces of art and music which physically endure beyond that change will be perceived by viewers or listeners in ways which differ for those at the time of their making.

Therefore, as pictures contain clues to changes in standard modes of visual perception, music can provide information about the history of standards of audial perception. In what follows, pictures shall be used as evidence for changes in the standard modes of the visual perception of space, whereas music shall be discussed as evidence for changes in norms of the audial perception of time.

2. *Visual Perception*

The historiography on visual perception of the second half of the twentieth century has focused on the emergence of mathematically controlled central point perspective in the course of the fourteenth and fifteenth centuries.[2] Historians and philosophers of

2 J. Gebser, *Ursprung und Gegenwart*, vol. 1 (Stuttgart, 1959), 23-49. See on the art history of the evolution of contral point perspective: G.-C. Argan, 'The Architecture of Brunelleschi and the Origins of Perspective Theory in the XVth Century', *Journal of the Warburg and Courtauld Institutes* 9 (1946), 98-101. M. Baxandall, *Painting and Experience in Fifteenth-Century Italy*, 2nd ed. (Oxford, New York, 1988), 29-45. M. S. Bunim, *Space in Medieval Painting and the Forerunners of Perspective* (New York, 1940) repr. (New York, 1970). H. Damisch, *The Origins of Perspective* (Cambridge, MA, London, 1994), 58-164 [first published (Paris, 1987)]. M. Eberle, *Individuum und Landschaft* (Giessen, 1980). S. Y. Edgerton Jr., *The Renaissance Rediscovery of Linear Perspective* (New York, 1975). C. Goldstein, *Visual Fact over Verbal Fiction. A Study of the Carraci and the Criticism, Theory and Practice of Art in Renaissance and Baroque Italy* (Cambridge, 1988). D. Gioseffi, *Perpectiva artificialis. Per la storia della prospettiva spigolature e appunti* (Triest, 1957), 60-73. Gombrich, Art (note 1), 242-258. W.M. Ivins, Jr., *Prints and Visual Communication* (New York, 1969), 39. M. Kemp, 'Science, Non-science and Nonsense. The Interpretation of Brunelleschi's Perspective', *Art History* 1 (1978), 134-152. E. Panofsky, 'Die Perspektive als "symbolische Form"', *Vorträge der Bibliothek Warburg* 4 (1924-25) (Leipzig 1927), 258-331. Panofsky, *Albrecht Dürer*, vol. 1 (Princeton, 1945), 242-273. J. White, *The Birth and Rebirth of Pictorial Space*, 3rd ed. (London, Cambridge, MA, 1987), 60-89.

culture have argued that space became visualized first when artists began to create illusions of three-dimensionality in two-dimensional pictures. These historians and philosophers have suggested that the illusions of three-dimensional space provided for the only possibility to represent space because they have limited the concept of space to a continuous ordering device within which the relations of objects and living beings can be depicted in terms of measured distances. This argument rests on the assumption that there is only way of visualizing space and that is through illusions of three-dimensionality. By contrast, these historians and philosophers have been unwilling to accept other styles of picture-making as means for the visualization of space.[3] However, the conceptualization of space as a continuous ordering device within which objects and living beings can move is far from obvious in its own right. Instead, it has its own history which displays the changing modes of visual perception. The core changes of modes of visual perception shall be described in this section.

A frequent type of picture in the early Middle Ages shows a single human figure together with animal ornaments. These ornaments are made up from animal bodies, the heads of which bite or at least confront each other. This type of picture was used in stone sculptures, book illuminations and also in pendants like bracteates as well as in pieces of

FIG 1 Stone of Hornhausen, c. A. D. 700. Halle, Museum für Vor- und Frühgeschichte. The mounted warrior rides above an assembly of two animal bodies facing each other.

3 For a criticism of this view see V. Turner, *The Anthropology of Performance*, ed. R. Schechner (New York, 1988), 73.

sculptural art. In each case, the ornamental frame of animal bodies defined the space into which the human figure came to be placed. Such pictures display a specific kind of space which the artist tried to visualize towards the viewer. The viewer was made to perceive space as demarcating the activities of single human figures through animal bodies. There were two ways of depicting animal bodies as frames for the activities of human beings. First, animal bodies could be depicted as directing their energies against each other, thereby neutralizing them.

In this case, the picture displays an aristocrat on horseback, perhaps the war god Woden, armed with a spear and a shield. The animal bodies are placed in the bottom part of the picture and remain separate from the horseman. Thus the man rides above the animals without having to encounter the danger of being attacked by them. The power of the horseman appears to be strong enough to confine the animals to nome subterranean part of the world.

But animal bodies could also be depicted as attacking the single human figure who had to defend itself. Hence the animals were to be perceived as potentially hostile forces

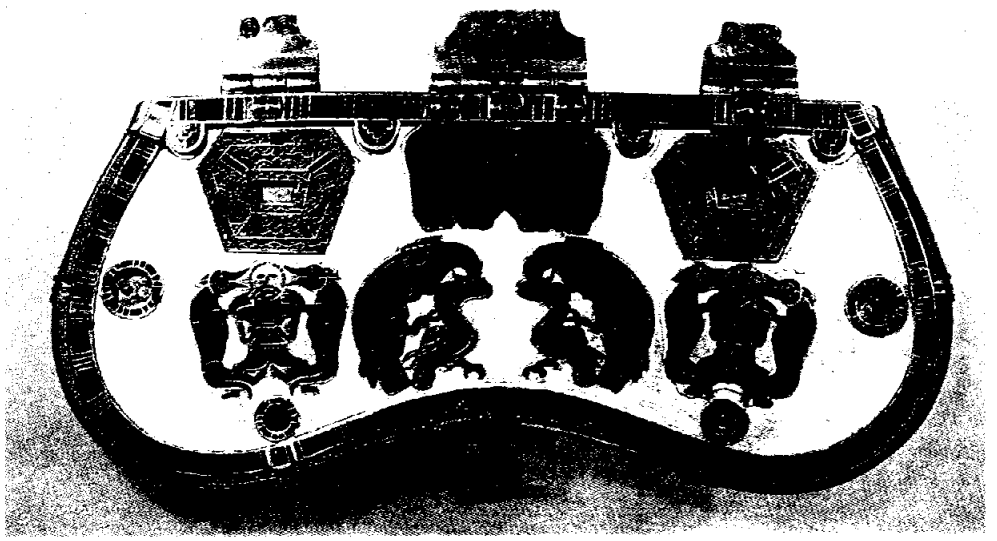

FIG 2 Purse lid from the Sutton Hoo shipburial, early seventh century. London, British Museum. Each of the ornaments on the left and right side of the lower row shows a human figure flanked by two animals each with their mouths open. They appear to be about to swallow the human figure. Similar ornaments belong to the stock elements of brooches of Salin's style I, contemporary with the Sutton Hoo burial, and they were also featured on sculptured stones.

of the environment, which could be harmful to humans when they did not direct their energies against themselves.

It is difficult to overlook that this pictorial representation of space was closely paralleled by similar attitudes towards the physical environment during the early Middle Ages, when dense woodlands and marshes surrounded many settlements and were referred to as "deserts", where wild beasts and dangerous creatures would live.[4] The inhabitants of settlements tried to avoid going into or crossing the woodlands except in groups, in cases of emergency or when they set out to clear woods for new settlements.

But the early medieval pictures were not merely made for the purpose of representing to the observers a contemporary attitude towards space. Instead, their main task was to stimulate reactions from the side of their viewers. This was so not only in the pre-Christian religions in central and northern Europe but also in Christianity. It has been noted that some early Christian theologians emphasized the importance of vision and the significance of pictures. Pictures were to be used to identify invisible ideas correctly with corporeal manifestations.[5] Pope Gregory I confirmed this task in his letter to Bishop Serenus of Marseille, whom he encouraged to make sure that the new and illiterate converts were instructed properly in Christian rules of conduct through pictures.[6] Picture veneration was taken to be a normal part of the religious service even though Augustine tried to reduce the impact of vision on actions.[7] Nevertheless, late antique and early medieval pre-Christian as well as Christian authors did not contend the view that visual perception was a process through which the picture as the object of perception interacted with the perceiving persons or groups and did so in such a way that the latter were induced towards predetermined reactions.[8] These reactions could also identify persons as members of certain groups and could likewise exclude outsiders. In short, late antique

4 See: C. Lecouteux, *Les monstres dans la littérature allemande du Moyen Age*, 3 vols (Göppingen, 1982). F. Wild, *Drachen im Beowulf und andere Drachen* (Vienna, 1962)(Sitzungsberichte der Österreichischen Akademie der Wissenschaften, Philos.-Hist. Kl. 238, 5.)

5 See: H. Belting, *Bild und Kult*, 2nd ed. (Munich, 1991), 11-27 (first ed. 1990, repr. 1993). D. Chidester, *Word and Light. Seeing, Hearing and Religious Discourse* (Urbana, 1992), 35. Cf. Chapeaurouge (note 1), 1-14, on statements to the effect that audition received a higher appreciation than vision in late antiquity and the early Middle Ages.

6 Pope Gregory I, Registrum epistolarum, nr 9, ed. P. Ewald, L. M. Hartmann, *MGH Epp. in Quart*, vol. 2 (1892-1899), 208.

7 St Augustine, *De Genesi ad litteram*, cap. XII 8, 20 (*PL* 34, 461). Cf.: J. Pelikan, *Image Dei. The Byzantine Apologia for Icons* (New Haven, London, 1990).

8 The entire complex of effects which were adduced to pictures as representations of powerful non-human energy and powers remains unconsidered in this context. Cf. on this aspect Belting (note 5), 550-567.

and early medieval visual perception was expected to translate into action.[9]

Numerous pieces of monastic book production with their frequently observed deictic elements confirm the belief that perception ought to translate into action. In a few cases it was made explicit that the pictures had the task of admonition. One is extant in a Paris Gospel Book, which contains a picture of Emperor Lothair I sitting on the throne. The picture focuses on the person of the emperor and displays no more than rudimentary

FIG 3 The enthroned emperor. Frontispiece of the Gospel Book of Emperor Lothair I, ninth century. Paris, Bibliothèque Nationale, Ms. Fonds lat. 266, fol. 1v.

9 Cf. K. Hauck, 'Die Wiedergabe von Göttersymbolen und Sinnzeichen der A-, B- und C-Brakteaten auf D- und F-Brakteaten, exemplarisch erhellt mit Speer und Kreuz', *Frühmittelalterliche Studien* 20 (1986), 474-512. H. Keller, N. Staubach, ed., *Iconologia sacra. Bildkunst und Dichtung in der Religions- und Sozialgeschichte Alteuropas* [*Festschrift für Karl Hauck zum 75. Geburtstag*] (Berlin, New York, 1994). A. Nitschke, *Kunst und Verhalten* (Stuttgart, 1975). Cf. on the Iconoclast controversy Belting (note 5), 559-565.

architectural or other manifestations of space. Thus it can neither be determined solely from the picture that the throne is placed inside a building nor can it be ascertained what distances are there between the throne and the columns framing it on either side. Facing the picture, a dedication poem was added which commands the viewer to say prayers for the emperor.

In this case, the situational background was a liturgical one: The gospel book appears to have been regarded as a donation by the emperor to the monastery of St. Martin in Tours (where the book was kept) in return for prayers to be said for the emperor by the monks of that monastery. In the poetic text accompanying the picture, the reader of the book is reminded of the obligation of the monks to say prayers for the emperor.[10] The picture thus served as a reminder for *illitterati* among the monks of St. Martin in Tours that they had the duty to practice the memoria of the emperor as their previous benefactor. In this capacity the picture could stand by itself, as it did not per se need a comment. Only a literate and poetically gifted scribe could make the effort of composing some explanatory verses to make verbally explicit what was already self-evident from the picture itself, namely that perception should translate into action.[11]

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10 The poem 'Sigilai versus ad Hlotharium imperatorem' which accompanies the picture has been printed separately in: E. Dümmler, ed., *MGH poetae latini aevi Carolini*, vol. 2 (1884), p. 671, vv 23-27. See on the interconnectedness between perception and early medieval book illumination: *Bernward von Hildesheim und das Zeitalter der Ottonen. Katalog zur Ausstellung* (Hildesheim, 1993). P. Ganz, ed., *Das Buch als magisches und Repräsentationsobjekt* (Wiesbaden, 1992). H. Hoffmann, *Buchkunst und Königtum im ottonischen und frühsalischen Reich*, 2 vols. (Stuttgart, 1986). W. C. Schneider, *Ruhm, Heilsgeschehen, Dialektik. Drei kognitive Ordnungen in Geschichtsschreibung und Buchmalerei der Ottonenzeit* (Hildesheim, New York, 1988).

11 See on the use of visual perception for the transmission of messages in the high and late Middle Ages, specifically in art and architecture: G. Bandmann, *Mittelalterliche Architektur als Bedeutungsträger* (Berlin, 1951). H. Belting, *Das Bild und sein Publikum im Mittelalter* (Berlin, 1981). G. Binding, *Der früh- und hochmittelalterliche Bauherr als sapiens architectus* (Cologne, 1996). M. Berve, *Die Armenbibel* (Beuron, 1969). P. Crossley, 'Medieval Architecture and Meaning. The Limits of Iconography', *Burlington Magazine* (1988), 116-121. D. Debes, *Das Figurenalphabet* (Munich, 1968). W. F. Haug, B. Wachinger, eds, *Exempel und Exempelsammlungen* (Tübingen, 1991). D. Hess, *Meister um das "mittelalterliche Hausbuch". Studien zur Hausbuchmeisterfrage* (Mainz, 1994). C. Meier, U. Ruberg, eds, *Text und Bild* (Wiesbaden, 1980). F. Möbius, H. Scurie, *Symbolwerte mittelalterlicher Kunst* (Leipzig, 1984). N. H. Ott, 'Zum Ausstattungsanspruch illustrierter Städtechroniken. Sigismund Meisterlin und die Schweizer Chronistik als Beispiele', S. Füssel, J. Knape, eds, *Poesis et pictura. Festschrift für Dieter Wuttke* (Baden-Baden, 1989), 77-106. R. Scheler, W. H. Peter, *A Survey of Medieval Model Books* (Haarlem, 1963). G. Schmidt, *Die Armenbibeln des 14. Jahrhunderts* (Graz, Cologne, 1959). R. Schmidt-Wiegand, ed., *Text-Bild-Interpretationen* (Munich, 1986). R. W. Scribner, *For the Sake of Simple Folk. Popular Propaganda for the German Reformation*, 2nd ed. (Oxford 1994). E. Baldwin Smith, *Architectural Symbolism of Imperial Rome and the Middle Ages* (Princeton, 1956). M. Warnke, *Bau und Überbau* (Frankfurt, 1976). Repr. (Frankfurt, 1984).

In the early Middle Ages, the intimate interrelationship between action and perception, specifically the recognition of perception as a source of action, was possible and feasible within a conceptual and normative framework in which the person was regarded as receiving heterodynamically a signficant share of his or her energies and physical strength from external forces, be they supernatural agents, the Christian divinity and its temporal representatives, persons of high rank or unusual power of friends and members of the kin group. The concept of heterodynamics signifies an attitude towards physical and human environments according to which persons believe to be able to act efficiently if and as long as they receive support from elsewhere. By contrast, the concept of autodynamics denotes an attitude according to which persons believe that they can act efficiently if and as long as they can avail themselves of the energies contained in their own bodies.[12]

Early medieval sources abound with references to admonitions which powerful persons heterodynamically awarded to others through gestures, in writing and in speech. In a few cases, the purpose of the admonitions was made explicit. For one, Charlemagne issued a "general admonition" for the entire kingdom under his control in 789 in which he stated that it was his purpose to correct mistakes, prevent lack of decency and make known what is considered to be correct.[13] There is also the correspondence between St. Boniface and other early medieval missionaries who were used to admonish and being admonished by their friends and colleagues of either sex.[14]

The viability of such a heterodynamic mode of beravior rested on the belief that human beings, whether living or dead, should act for the purpose of assisting others against the irksome or evil, awe-inspiring or dangerous impacts from the physical environment or outside groups. In other words, the belief that perception can spark action requires the confidence on the part of the actor that perception is subjected to group-bound standard modes and can therefore be translated into the means needed by the actor to perform the anticipated and desired reactions. Consequently, this type of heterodynamic mode of behavior emerged from a group-centered concept of perception in which the perceived person or object and the actor were tied together with integrated

12 See Nitschke (note 9) for this terminology.

13 Charlemagne, "Admonitio generalis", 789, ed. A. Boretius, *MGH Capitularia regum Francorum*, vol. 1 (1883), nr 22. See on early medieval admonitions: A. Nitschke, *Körper in Bewegung* (Stuttgart, 1989), 47-74.

14 M. Tangl, ed., *Die Briefe des Heiligen Bonifatius und Lullus*, nr 9, 23, 27, 61, 64, 73-75, etc., *MGH Epistolae selectae*, vol. 1 (1916). In the tenth century, Bishop Atto of Vercelli wrote an "admonitio" for the priests of his diocese in order to remind them of their duty to observe the rules of the church. Atto of Vercelli, *Capitulare (PL* 134, col. 27).

processes of communicative action and integrated into networks of close social bonds and ties. The types of groups were vertically arrayed in the sense that they persisted next to and competed with each other. Hence there was no overarching integrative concept of society but the perception that any person could opt for memberships in a variety of different types of groups. Within these types of groups, be they kin groups, neighborhood groups, groups by contract or political groups, the ability of certain persons and supernatural or divine agents to admonish others without needing to be admonished was the hallmark of power. Such power was frequently deemed necessary to allow outstanding persons to confront the hazards of the physical environment with the hope of success and without the help of others. Commonly, such images of power were associated with divinities in the pre-Christian religions as well as with Christ.

FIG 4 Christ as the winner over a dragon and a lion. Illumination accompanying Psalm 90. Ninth century. Stuttgart, Württembergische Landesbibliothek, MS. Bibl. Fol. 23, for. 107v.

To sum up, the early medieval concept of perception comprised, among other things, the principle that perception should translate into preconceived patterns of action which persons were expected to follow when and after looking at pictures or receiving other kinds of instruction. These patterns of action were group-based in the sense that they were determined by and characterized the specific norms and values accepted in the groups. They re-enforced heterodynamic modes of behavior through which the ordinary person was regarded to be and remain capable to overcome the hazards of the physical

and human environments as long as they were and remained integrated into groups.

The group-centered concept of perception as an instigator of action underwent a drastic change during the twelfth century. Since then, standard modes of perception have been primarily space-centered in various ways. Initially, during the twelfth, thirteenth and fourteenth centuries, space came to be depicted, not as an integrated and permeable field of action, but as the aggregate sum of hierarchically arrayed place with wich different qualities were associated, whereby higher places were perceived as the better ones. Therefore, what mattered in this mode of perception was no longer the generation of protection for group members, but the recognition of hierarchically ordered qualities of places. Put differently, the display of effectiveness of a person's action was no longer related to that person's protection-generating power, but to the position in the hierarchies of places in which persons could or had to be perceived. There were many manifestations

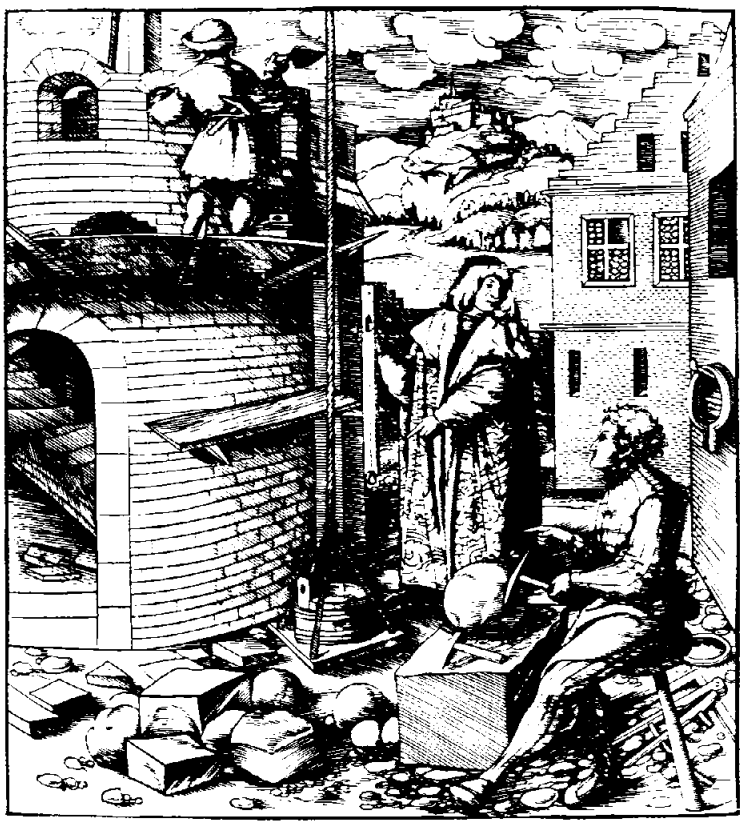

FIG 5 A residential hilltop castle overlooking an urban settlement, early sixteenth century. From: Maximilian I, *Weisskunig* (Vienna, 1775), fol. 21 [repr. (Weinheim, 1985)]. Such depictions were rare in the Middle Ages and had to be so because of the qualitative segregation of space.

of this change.

Within the physical envirtnment, the change from group-centered to space-centered perception became manifest in new forms of architecture. From the eleventh century, the social group of privileged aristocrats began to move out of the farming settlements and established their residences on hilltop castles which were visibly elevated above the remaining settlements of the peasant farming population and the newly establishing urban communities of towns and cities.

The same topographical hierarchization appeared in newly founded urban communities of towns and cities north of the Alps, which were preferably built on spurs of elevated land sometimes immediately below a castle, overlooking the open scenery and being visible from afar. But they also displayed the hierarchization of space within themselves by allocating the higher parts to a hilltop castle, a palace and the residence of the urban patriciate, while the artisans and craftsmen usually were confined to the low-lying parts.

FIG 6 Lithograph by E. Emminger of the town of Tübingen (Germany), mid nineteenth century. The picture displays the continuing medieval features of the hierarchical ordering of the town, with the castle on top of a hill, the town hall and more lavish houses of the urban patriciate placed in proximity to the castle, and the workshops of the urban artisans located on the downside of the hill along a brook. The picture also shows the new university hall and related buildings in the foreground which were built at the middle of the nineteenth century.

These arrangements made visible the hierarchization of the ranks among social groups, which were not vertically arrayed, but horizontically stratified. They allocated higher qualities or achievements or monetary influence and rank to those social groups whose members had the privilege and/or the funds to settle on higher locations within the

landscape or the urban communities of towns and settlements.

Likewise pictures ceased to be the instruments for the translation of perception into action and, instead, became instruments for the visualization of hierarchies. One of the best indications for this change comes from the thirteenth century Manesse manuscript at Heidelberg University Library. Like the following display of a knightly tournament, a number of its illuminations display arrangements within which human figures are placed into hierarchically arrayed groups and communicate among themselves through gestures. For example, a group of female figures placed on the upper level of the picture might express gestures of sympathy towards male figures on the lower level:

The gestures suggest that the persons on the upper level provided encouragement and sympathies for the persons on the lower level. It is possible to assume that, as in other pictures of the same manuscript, this mode of behavior was predominantly heterodynamic in kind, as the fighting knights may have received some strength from the women

FIG 7 Three ladies watching a knightly tournament, thirteenth century. Codex Manesse, Heidelberg, University Library, cpg 848. Her Albrecht von Haigerloch.

watching the tournament from above. However, the knights are neither depicted as threatened by potentially dangerous elements of the environment, nor do they use their own physical strength and bodily energies to overcome obstacles presented by the physical environment. Instead, they direct their energies against each other and compete for the position of the strongest in what is depicted as an exclusively human-made

environment. Finally, no effort is made to include the viewers of the picture, who are hardly expected to translate into action what they have perceived in the picture. That is to say, the artist may have intended to convey upon the viewers the impression that female sympathizers can strengthen the fighting power of males but no indication exists that viewers were expected to articulate similar sympathies. Hence these pictures fulfilled the tasks of display and the provision of information which separated perception from action. The visualization of spatial hierarchies produced a new type of message sent by the artist to the viewer. The viewer was no longer expected to generate predetermined reactions when looking at the picture : instead, the viewers were expected to observe interactions among persons in different hierarchically arrayed spaces in which the viewers were no longer involved.

The depiction of spatial hierarchies appears even more explicitly in other pictures

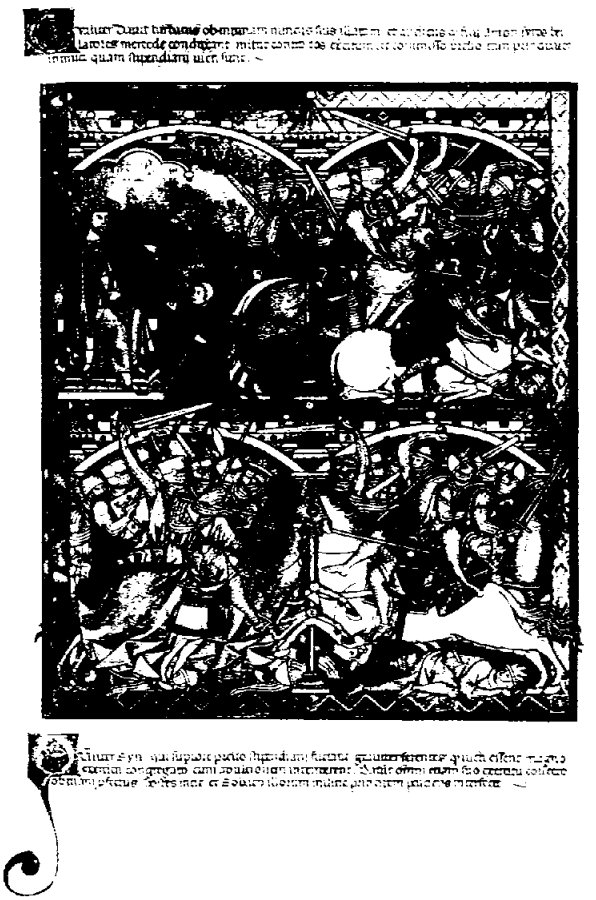

FIG 8 King David fights a war. Ms containing the Old Testament, thirteenth century. New York, Pierpont Morgan Library, Ms 638, fol. 41r.

from the same time. The above example, taken from a mid thirteenth century manuscript of the Old Testament, consists of four scenes arrayed from the top left to the bottom right. At the top left, King David sits on a throne and directs a war, whereas the other three parts represent battle scenes.

David's throne is elevated above the ground, as the king points with his right arm above the head of a servant kneeling before him. To the right of the kneeling servant, one sees the back side of two horses with knights riding them and turning back towards David in reception of his commands. Bits of architectural features indicate that David's throne is located inside a building, whereas the knights into whose direction he points appear to be outside. David's crowned head is raised far above that of the kneeling servant and is only slightly lower than the heads of the two mounted knights. The picture thus represents the relations between the king and the knights in proportions which differ from what would be considered appropriate in the twentieth century. No indication of the distances between the king and the knights is given, and no obvious dividing line demarcates the inside from the outside. The size and tallness of the figures is without proportions in that the king, while seated on the throne, appears to be almost as tall as the mounted knights, and, at the same time, elevated far above the kneeling servant, who occupies the space in between the king and the knights. Hence this artist gave preference to the depiction of spatial hierarchies wherein the king as the highest holder of a secular office appeared as the dominant feature in the picture, tantamount to nothing. Moreover, in the following battle scenes, close melees of knights in action are shown, and into each battle scene, one or two horses are interspersed and they appear as dominant features upsetting the perspective.

Artists of the time thus displayed space as aggregated, but neither as integrated nor permeable. What came to be perceived in art were spatial hierarchies rather than interactions among persons or groups. In consequence, what was perceived came to be conceived as the world of tangible realities which were ordered in space according to their qualities or the relative degree of importance which had been assigned to them by the artists. The observers did no longer interact with the picture in such a way that predetermined reactions could be expected in consequence of their perceptions. Instead, the observers themselves objectified the pictures as a part of the outside world of tangible realities. Thus the previously close interconnectedness between perception and action was severed, and perception began to exist as an autonomous activity in its own sake.

The widest possible extension of this new standard more of perception was already accomplished during the early thirteenth century with the monumental *mappaemundi* drawn for ecclesiastical, mainly monastic institutions. In these maps, the entire world

became objectified as a hierarchical order of past and present places before or below the divinity.[15] The various levels of hierarchy were distinguished by the relative distance between the divinity and the location of a place in the maps. Therefore, the divinity was placed at the highest point of the map, usually at its top above the world. In the *mappaemundi*, the world was depicted as a disc which many times included the terrestrial paradise. When this was the case, paradise was located closest to the divinity, namely in the upper part of the map. What followed downwards was some space which was mostly inhabited by wonderful or strange creatures and which was interconnected with the rest

15 Hugh of St. Victor [*De arca Noe mystica*, cap. XIV, *PL* 176, col. 700] wrote an instruction on map-making in which he demanded that paradise as the place of the origin of humankind had to be located in the east and in the uppermost part of the *mappamundi* at the place closest to the divinity. He thus characterized the mappamundi as a representation of both space and time. Similarly: Vincent of Beauvais, 'De Asia et eius capote quod est paradisus'. Vincent, *Speculum naturale*, cap. XXX/2 (Douai, 17624), col. 2400. See on medieval world maps: F. G. Andersen, E. Nyholm, F. T. Stubkjaer, ed., *Medieval Iconography and Narrative* (Odense, 1980). J. -G. Arentzen, *Imago mundi cartographica. Studien zur Bildlichkeit mittelalterlicher Welt-und Ökumenekarten unter besonderer Berücksichtigung des Zusammenwirkens von Text und Bild* (Munich, 1984). A. -D. von den Brincken, 'Mappamundi und Chronographia', *Deutsches Archiv für Erforschung des Mittelalters* 14 (1968), 118-186. Brincken, *Fines Terrae* (Hanover, 1992). Brincken, 'Weltbild der lateinischen Universalhistoriker und -kartographen', *Settimane di studio del Central Italiano di Studi sull' Alto Medioevo* 29 (1983), 377-408. Frank O. Büttner, *Imitatio pietatis. Motive der christlichen Ikonographie als Modelle zur Verähnlichung* (Berlin, 1983). K. Clausberg, 'Scheibe, Rad, Zifferblatt. Grenzübergänge zwischen Weltkarten und Weltbildern', H. Kugler, ed., *Ein Weltbild vor Columbus. Die Ebstorfer Weltkarte* (Berlin, 1991), 260-313. S. Y. Edgerton, 'From Mental Matrix to Mappamundi to Christian Empire. The Heritage of Ptolemaic Cartography in the Renaissance', D. Woodward, ed., *Art and Cartography* (Chicage, London, 1987), 10-50. J. B. Friedman, 'Cultural Conflicts in Medieval World Maps', S. B. Schwartz, ed., *Implicit Understanding. Observing, Reporting and Reflecting on the Encounters between Europeans and Other Peoples in the Early Modern Era* (Cambridge, 1994), 64-95. P. Gautier Dalché, 'Tradition et renouvellement dans la représentation de l'espace géographique au IXe siècle', *Studi medievali* 3rd Ser., 24 (1983), 121-165. Gautier Dalché, 'Un problème d'histoire culturelle. Perception et représentation de l'espace au Moyen Age', *Médiévales. Language, Textes, Histoire* 18 (1990), 5-15. W. Kemp, 'Medieval Pictorial Systems', B. Cassidy, ed., *Iconography at Crossroads. Papers from the Colloquium Sponsored by the Index of Cristian Art, Princeton University, 23-24 March 1990* (Princeton 1993), 121-127. E. Kitzinger, 'World Map and Fortune's Wheel', *Proceedings of the Americal Philosophical Society* 117, 5 (1973), 343-373. Repr. in Kitzinger, *The Art of Byzantium and the Medieval West*, ed. E. W. Kleinbauer (Bloomington, London 1976), 327-356. M. Kupfer, 'Medieval World Maps. Embedded Images, Interpretative Frames', *Word and Image* 10 (1994), 262-288. D. Lecoq, 'La "mappemonde" du De arca noe mystica de Hugues de Saint-Victor', Monique Pelletier, ed., *Géographie du monde au Moyen Age et à la Renaissance* (Paris, 1989), 9-31. Meier, Ruberg (note 11). Michael Schilling, *Imagines mundi. Metaphorische Darstellungen der Welt in der Emblematik* (Frankfurt, Bern, Cirencester, 1979). D. Turnbull, 'Cartography and Science in Early Modern Europe. Mapping the Construction of Knowledge Spaces', *Imago Mundi* 48 (1996), 5-24. D. Woodward, 'Maps and the Rationalization of Geographic Space', Jay Levenson, ed., *Circa 1492. Art in the Age of Exploration* (New Haven, 1991), 83-88.

of the world through the four rivers allegedly flowing out of paradise. Sometimes, as in the case shown below, the center of the round-shaped world was occupied by the city of Jerusalem, below which one could perceive the Mediterranean Sea as the inland sea of the Roman Empire of Antiquity.

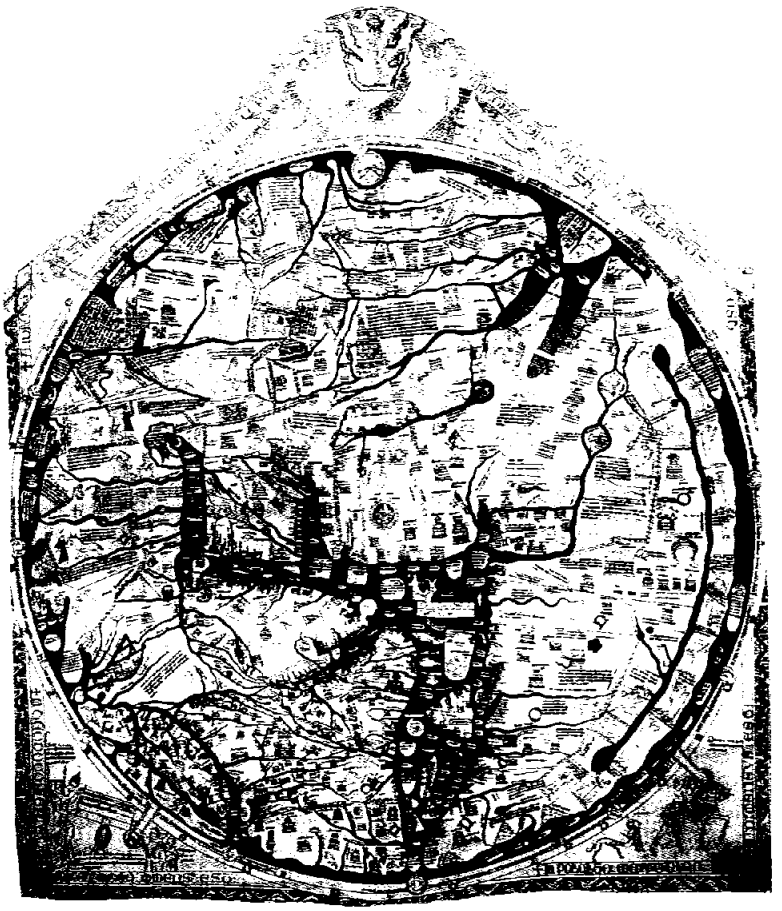

FIG 9 World map (*mappamundi*, T-O format), thirteenth century. Hereford Cathedral.

It was understood in the Middle Ages that the *mappaemundi* would not only depict the world in its spatial, but also in the temporal dimension as sacred world history. According to the late and post-Roman understanding of sacred history, the Roman Empire was the last of four world empires spanning sacred history between the expulsion from paradise and Judgment Day. Hence, the Roman Empire would be depicted at the opposite end of paradise, that is, at the bottom of the world map. In other words, the

combination of spatial and temporal elements of the ordering of the world led to a world picture in which Asia occupied the highest level, in proximity to the divinity, while Europe was at the lowest side, most remote from the divinity. The *mappaemundi* thus visualized the perception of the world as the divinely willed and hierarchically ordered aggregate sum of places through which humankind proceeded from paradise to Judgment Day.

However, in the fourteenth century, awarding hierarchies to places with different qualities and visualizing these hierarchies in depictions of space began to obsolesce. Gradually, visualizing the hierarchies of qualitatively differentiated spaces became complemented by efforts to display space as integrated to the extent that its permeability could be made visible in pictures. Already before the middle of the fourteenth century, in the Sienese school of painters, Ambrogio Lorenzetti viewed the city within its environment, depicting it from a bird's eye perspective without attempts to visualize hierarchies :

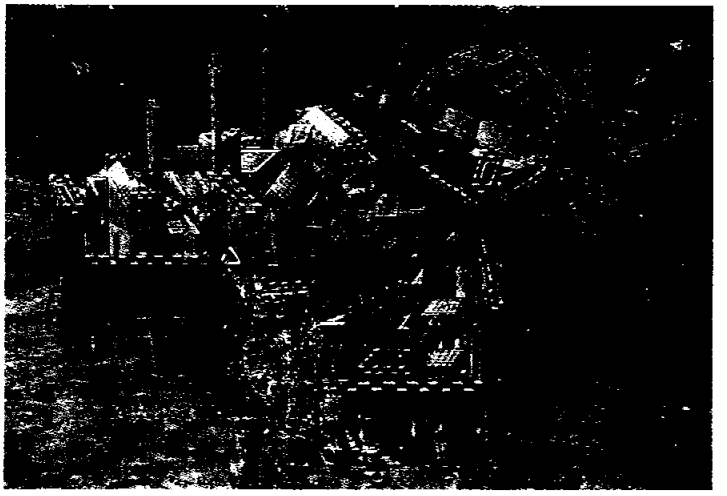

FIG 10 Ambrogio Lorenzetti. View of a city, first half of the fourteenth century. Siena, Museum of Arts.

At about the same time, the same painter created a series of fresco allegories of good and bad government, which he placed into a city as its architectural framework. In these allegorical frescos, Lorenzetti rendered the urban space permeable so as to allow the viewer an estimation of the distances in between the depicted human figures and architectural structures. For example, one can catch a glimpse of a teacher instructing school children inside a building, one can see merchants offering their goods in an adjacent building, and one can watch women dancing in an open space within the city. The

houses appear as built on a rather steep slope, which may be a suitable representation of the city of Siena for whose city hall the frescos were painted. The architecture of the city followed the stereotype pattern of locating in the upper part the residences of the more affluent citizens. But the painter laid no additional emphasis on the depiction of other spatial hierarchies. Instead, he depicted the space in the city as integrated and permeable.

FIG 11 Ambrogio Lorenzetti, The Good Government, 1337-1339. Siena, Palazzo Pubblico.

Admittedly, the picture carries with it sets of messages which the painter sought to make visually explicit. Among others, he tried to display the well-governed city as an example of good government in general. In this limited sense of carrying messages this picture was still devised as a means for the prompting calculated reactions among the viewers. At first sight, this effect might be regarded as a variant of the early medieval interconnectedness of perception and action. However, there is a fundamental difference. Whereas, when looking at early medieval picture, viewers had been expected to act in a specific preconceived way, the late medieval painters made no attempt to determine viewers' actions by means of the messages which they associated with their pictures.

Instead, they strove at most to provide moral guidance which left a substantive variety of choices for action to those viewers who decided to act in accordance with such guidance.

The change of standard modes of perception corresponded with a contemporary thirteeth century change in pragmatic attitudes towards space. At the time, towns and cities began to open themselves to their rural environments, intensifying the ties with the neighboring villages through trade and migration and beginning to make use of nearby woodlands. The councils of towns and cities made efforts to establish themselves as lords over neighboring villages or other town communities, wealthy urban inhabitants bought private lands outside the towns and cities, and merchant companies as well as governments of towns and cities established networks of trade and political unions. Already in the late thirteenth century, the trading network comprised the entire "Old World" of Africa, Asia and Europe.[16] Scientists began to define the environment as the space in between objects, that is as a continuum in which objects exist and living beings can wove.[17] Famously, Petrarch reported in a letter sent at c. 1355 to his teacher on his experiences when he climbed up Mount Ventoux in southern France. He described the scenery as in fact permeable although he ad been warned of all sorts of risks and dangers before starting the expedition. Having reached the top, he disclosed his surprise at the openness of the landscape and the indefiniteness of space. Similarly, at the end of the fourteenth century, Geoffrey Chaucer opened his *Canterbury Tales* with an expression of the joy with which London people greeted the spring and set out for pilgrimage to Canterbury through the open countryside.[18] Thus, throughout the thirteenth and fourteenth centuries, a degree of interaction across and of human penetration into space was accomplished which made it difficult to continue the traditional perception of space as aggregated and divided by hierarchies and as potentially or veritably hostile to the human being.

Perceiving and depicting space as an integrated and permeable area was incompatible with the previous visualization of space as the aggregate sum of qualified places, because one could only depict space in the new way under the condition that what was

16 See: Janet Lippman Abu-Lughod, *Before European Hegemony. The World System A. D. 1250-1350* (New York, Oxford, 1989). Siegfried Epperlein, *Waldnutzung. Waldstreitigkeiten und Waldschutz in Deutschland im hohen Mittelalter* (Stuttgart, 1993). Rudolf Kießling, *Die Stadt und ihr Umland* (Cologne, Vienna, 1989).

17 See: Albertus Magnus, *De caelo et mundo, cap.* III *1.* III *2, ed. Paul Hossfeld (Munster 1971), 55-59 (Alberti Magni Opera omnia, 5, 1.)*

18 *Francesco Petrarca, Epistolae familiares* cap. IV 1, ed. U. Dotti, Petrarca, *Epistoli* (Turin, 1978), Repr. (Turin, 1983), 118-134. Geoffrey Chaucer, 'Canterbury Tales, General Prologue', F. N. Robinson, ed., Chaucer, *The Works*, 2nd ed. (Oxford, New York, 1974), p. 17.

upper or lower in the picture became dissociated from qualities or assessments of importance. Depicting space as integrated and permeable demanded the order of the picture to be constructed on an imaginary focal point outside the picture, so that a central perspective emerged which could direct the viewer to the three-dimensional "depth" of the visualized space, as the in following case.

FIG 12 Masaccio, The Tithe. Fresco, c. 1427. Florence, church of S. Maria del Carmine.

Correspondingly, Leonardo da Vinci and fifteenth-century theorists of painting described the central point perspective metaphorically in the following way: "Perspective is the visible law according to which-as all experience confirms-all things send their images in pyramidal lines to the eye; and bodies of the same size will form a pyramid with a more or less accurate angle depending on their distances. It seems to me that pyramidal lines are lines which depart from the outside boundaries of the objects, merge at a distance and lead to one single terminal point. A point shall be what cannot be divided at any place and the terminal point of the pyramidal lines is that which is located in the eye and which receives all tipes of the pyramids."[19]

19 Leonardo da Vinci, Ms A, fol. 3r (Paris, Bibliothèque Nationale, formerly Milan, Biblioteca Ambrosiana). The printed version of Leonardo's scattered remarks on painting appeared under the title *Trattado della pittura*, (Paris, 1651). Cf. Panofsky (note 2, Perspektive), 258. C. Pedretti, ed., *Leonardo da Vinci on Painting. A Lost Book (Libro A)*(Berkeley, los Angeles, 1964). R. A. Steiner, *Theorie und Wirklichkeit der Kunst bei Leonardo da Vinci* (Munich, 1979). Earlier explications of the central point perspective are to be found in: Cennino Cennini, Il *libro del' arte* [c. 1437], ed. R. Simi (Lanciano, 1913). Leon Battista Alberti, *De pictura praestantissima* (Basle, 1540). Repr. (London, 1976). See for contemporary and later versions: Jean Pelerin, *De artificiali perspectiva* (Tulli, 1505). Joachim von Sandrat, *Teutsche Academie der edlen Bau-, Bild- und Mahlerey-Künste* (Nuremberg, 1675), 90.

The central point perspective became the dominant standard of perception of space.[20] This new standard accelerated the simultaneous spreading of the new autodynamic modes of behavior, for it promoted the perception of the physical environment as allowing, if not inviting persons to trespass the boundaries of space through the use of their own-bodily energies.

By the sixteenth century, the perception of integrated and permeable space as open for human trespass reached a stage in which the openness of space could be depicted even in cases where it was recognizable contrary to experience. The following etching betrays the eagerness of a printer to convey the impression of the accessibility of open space where such was topographically not the case.

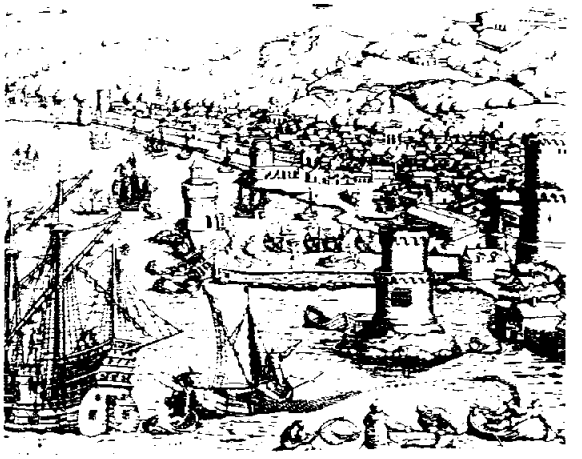

FIG 13 View of the port of Seville, sixteenth century. Seville, actually located on the Guadalquivir river and accessible from the open sea only at high tide, is portrayed as a coastal settlement, presumably because it featured as the starting point for Columbus's first voyage as well as for scores of sixteenth-century European migrants for their journeys westwards across the ocean. From: Theodore de Bry, *Americae pars* IV (Frankfurt, 1594), 14.

The etching shows a port city located on the shores of an ocean and displays ocean-faring vessels arriving at and departing from the harbor. It is included in a best selling book, published in 1594 by Theodore de Bry on the transatlantic migration, and it takes notice of the fact that, during the sixteenth century, most of the European migrants to America left from the city of Seville. Consequently, the coastal port city is identified as Seville. But the picture does not take into account the fact that Seville is

20 Cf. note 2 on the evolution of central point perspective.

located on the Guadalquivir river and is accessible from the open sea only at high tide. The publisher was neither ignorant of this fact nor did he simply mix things up for the purpose of reducing printing costs. Instead, he admitted that the scene did not agree with the actual topographical conditions of Seville and excused himself with the argument that the etcher did not have an appropriate model to depict Seville correctly. If this was so, the printer could have chosen an impression of any city as his model. But his choice fell on a coastal port city and thereby confirms that, what mattered in the case of Seville, was the visualization of accessibility to open space, and not the representation of actual topographical features.[21] Accessibility to the open sea was a typical feature in displays of Europe in the sixteenth cetury.[22]

3. *Summary of visual perception*

The history of standard modes of visual perception during the Middle Ages displays fundamental changes of the patterns of interaction between artists as the senders and viewers as the recipients of messages. During the early Middle Ages, artists and viewers shared the belief that the viewers' perception ought to translate into predetermined action. Hence perception was group-centered, and pictures were more than transmitters of messages ; instead they were media in the genuine sense of the word in that they were the instruments which were held to be capable of inducing their viewers to perform predetemmined actions. During the twelfth century, the innate relationship between perception and action was severed because artists gave priority to the depiction of spatial hierarchies without continuing to induce viewers to perform predetermined actions. Instead, artists limited themselves to the display of heterodynamic influences among persons as protagonists in the pictures themselves. The spreading of central point perspective in the fifteenth

21 Cf.: I. Ramseger, Die Städtebilder der Schedelschen Weltchronik. Phil. Diss., typescript. University of Berlin, 1943. M. Schmitt, J. Luckhardt, *Realität und Abbild in Stadtdarstellungen des 16. bis 19. Jahrhunderts* (Lippstadt, Munster, 1982). Schmitt, Vorbild, Abbildung und Kopie. Zur Entwicklung von Schweisen und Darstellungsarten in druckgraphischen Stadtabbildungen des 15. bis 18. Jahrhunderts am Beispiel Aachen", *Civitatum communitas. Heinz Stoob zum 65. Geburtstag*, vol. 1 (Cologne, Vienna, 1984), 322-354. P. Volkelt, Die Städteansichten in den großen Druckwerken vornehmlich des 15. Jahrhunderts. Phil. Diss., typescript, University of Marburg, 1949. C. -P. Warncke, *Sprechende Bilder-Sichtbare Worte. Das Bildverständnis in der frühen Neuzeit* (Wiesbaden, 1987).

22 Cf. Hans Holbein's additions to the global map printed by Simon Grynaeus, *Novus orbis* (Basle, 1532) where a picture of Europe is presented as the coast of the open sea viewed from a building with two columns. Cf.: T. Conley, 'The Wit of the Letter. Holbein's Lacan', T. Brennan, M. Jay, eds. *Vision in Context* (New York, London, 1996), 45-61.

century represents the terminal point of a process through which perception became gradually focused on space, and pictures were reduced to transmitters of graphic messages.

4. *Audial Perception*

This section focuses on the changes of experiences of time and audial perception in the course of the Middle Ages and draws on evidence from music performances and the theory of music. Although equal in importance with the pictorial arts, music as an instrument of audial perception can be dealt with here in brief, because the major changes of the standard modes of audial perception coincide with those of the change of the standard modes of visual perception.[23]

As far as we know, much of the performance of music in the early Middle Ages, in pre-Christian as well as in early Christian times, was devoted to the realization of certain effects on the side of the performers who were also the audience.[24] Early medieval ecclesiastical canons contain repeated references to songs which were reported to have been enacted together with dances with dances on graveyards in proximity to church buildings, and such practice was still recorded in the eleventh century.[25] A conspicuous event was recorded in relation to the early eleventh century, a detail of which allows some insight into the standard modes of audial perception of the time. The event was associated with the east Saxon village of Kölbigk and was reported to have occurred during the reign of Emperor Henry II (1002-1024), probably in 1020.[26] The report is now extant in three versions.[27] According to one version, a group of thirteen men and three

23 For general survey see: R. L. Crocker, *Studies in Medieval Music Theory and the Early Sequence* (Aldershot, 1997). M. Walter, *Grundlagen der Musik des Mittelalters* (Stuttgart, 1994). W. Wiora, *Historische und systematische Musikwissenschaft. Gesammelte Aufsätze* (Tutzing, 1972).

24 Isidore of Seville, *Etymologiarum sive Originum libri XX*, cap. III 17, ed. W. M. Lindsay, vol. I (Oxford, 1911). Cf. Boethius, *De musica* (*PL* 63, col. 1169).

25 Burchhard of Worms, *Libri Decretorum XX*, lib. II, interrogatio 54, 46 (*PL* 140, cols. 577, 579).

26 See on the Kölbigk dancers: M. Andersson-Schmitt, 'Mitteilungen zu den Quellen des Großen Seelentrosts', *Niederdeutsches Jahrbuch* 105 (1982), 38-40. G. Arnold, *Unpartheyische Kirchen- und Ketzer-Historie*, Theil I (Frankfurt 1699), lib. XXIV, cap. 2, § 7. E. L. Backman, *Religious Dances in the Christian Church and in Popular Medicine* (London, Westport, CT, 1952). First published (Stockholm, 1945). G. Baesecke, 'Der Kölbigker Tanz. Philologisch und literarisch', *Zeitschrift für deutsches Altertum und deutsche Literatur*, 78 (1941), 1-36. Repr. in id., *Kleine Schriften zur althochdeutschen Sprache und Literatur*, ed. W. Schröder, (Bern, Munich, 1966). J. Balogh, 'Tänze in Kirchen und auf Kirchhöfen', *Niederdeutsche Zeitschrift für Volkskunde*, 6 (1928), 1-14, 126. J. C. Becmann, *Historie des Fürstenthums Anhalt*, Theil III (Zerbst, 1710), cap. 4. F. M. Böhme, Geschichte des Tanzes in Deutschland, vol. I (Leipzig, 1866), 664. K.-H. Borck, 'Der Tanz von Kölbigk', *Beiträge zur Geschichte der deutschen Sprache und Literatur* 76 (Tübingen, 1955), 241-320. A. Crantz, *Saxonia et metropolis* (Cologne, 1574), lib. IV, cap. 33. E. Donckel, 'Martin

Bucer und die 'Springenden Heiligen' von Echternach', *Kurtrierisches Jahrbuch* (1968), 137-140. H. Eichberg, 'Dansens energi. Kulturens sving I kroppens felt', *Centring* 8, 2 (1987), 200-201. L. Gougaud, 'La danse dans les églises', *Revue d'histoire ecclésiastique* 15 (1914), 229-230. J. F. C. Hecker, 'Die Tanzwuth', ed. A. Hirsch, *Die grossen Volkskrankheiten des Mittelalters* (Berlin, 1865), 143-192. E. Hoffmann-Krayer, 'Tänze auf Kirchhöfen', *Archiv für das Studium der neueren Sprachen und Literaturen*, 127 (1911), 197-199. A. Holtdorf, 'Das Tanzlied von Kölbigk', G. Jungbluth, ed., *Interpretationen mittelhochdeutscher Lyrik* (Bad Homburg vor der Höhe, Berlin, Zurich, 1969), 13-45. A. Langini, *La procession dansante d'Echternach* (Echternach, 1977). A. Martin, 'Geschichte der Tanzkrankheit in Deutschland', *Zeitschrift des Vereins für Volkskunde*, 24 (1914), 238-239. G. Mazzini, 'Una leggenda germanica ed un episodo dantesco', *Studi medievali* N. S. 1 (1928), 181-185. J. Meier, 'Das Tanzlied der Tänzer von Kölbigk', *Schweizerisches Archiv für Volkskunde*, 33 (1934), 152-165. K. Meisen, 'Springprozessionen und Schutzheilige gegen den Veitstanz und ähnliche Krankheiten im Rheinlande und in seinen Nachbargebieten', *Rheinisches Jahrbuch für Volkskunde*, 2 (1951), 164-178. E.-E. Metzner, *Zur frühesten Geschichte der europäischen Balladendichtung. Der Tanz von Kölbigk* (Frankfurt, 1972). B. Naunyn, 'Anschauungen der modernen Wissenschaft über die sogenannte Nervosität', in: Naunyn, *Gesammelte Abhandlungen 1862-1908*, t. 2 (Würzburg, 1909), 1243-1258. G. Paris, *Les origines de la poésie lyrique en France* (Paris 1892). Paris, 'Les danseurs maudits. Légende allemande du XIe siècle', *Journal des savants* 64 (1899), 733-747. F. Rädle, 'Das "Tanzlied von Kölbigk" und die Legende vom "Kölbigker Tanz"', *Die deutsche Literatur des Mittelalters. Verfasserlexikon*, 2nd ed. by K. Ruh et al., vol. 8 (Berlin, New York, 1992), cols 616-620. A. Reiners, 'Die Springprozession zu Echternach', *Frankfurter zeitgemäße Broschüren*, 5, 8 (1884), 240-267. M. Sahlin, *Etude sur la carole médiévale. L'origine du mot et ses rapports avec l'église* (Uppsala, 1940). E.Schröder, 'Das Tanzlied von Kölbigk', *Nachrichten der Gesellschaft der Wissenschaften zu Göttingen. Fachgruppe IV (Neuere Philologie and Literaturgeschichte)*, 1 (1933), 355-372. J. Schroeder, 'Zur Herkunft der älteren Fassung der Tanzlegende von Kölbigk', M. Borgolte, H. Spilling, ed., *Litterae medii aevi. Festschrift für Johanne Autenrieth zu ihrem 65. Geburtstag* (Sigmaringen, 1988), 183-189. Schroeder, 'Zur Frage frühmittelalterlicher Kulttänze am Grabe Willibrords in Echternach', *Willibrord. Apostel der Niederlande, Gründer der Abteil Echternach*, ed. G. Kiesel, J. Schroeder (Luxembourg, 1989), 186-193. H. Schück, 'En medeltides balladstrof', *Samlaren* (1908), 56-63. J. Schumacher, *Die seelischen Volkskrankheiten im deutschen Mittelalter und ihre Darstellungen in der bildenden Kunst* (Berlin, 1937), 59-65. U. Schwab, 'Das althochdeutsche Lied "Hirsch und Hinde" in seiner lateinischen Umgebung', N. Henkel, N. F. Palmer, eds, *Latein und Volkssprache im deutschen Mittelalter. 1100-1500* (Tübingen, 1992), 74-122. L. Senninger, 'Die "springenden Heiligen". Ein Beitrag zur Geschichte der Wallfahrten nach Echternach und Prüm', *Hemecht*, 11 (1958), 33-61. H. Spanke, 'Tanzmusik in der Kirche des Mittelalters', *Neuphilologische Mitteilungen*, 31 (1930), 143-170. D. Strömbäck, 'Den underbara arsdansen', *Arkiv för nordisk filologi*, 59 (1944), 111-126. Strömbäck, 'Kölbigk och Hagra', *Arv*, 17 (1961), 1-48, 24 (1968), 91-132. P. Verrier, 'La plus vielle citation de carole', *Romania*, 58 (1932), 380-421. M. Wähler, 'Der Kindertanzzug von Erfurt nach Arnstadt im Jahre 1237', *Zeitschrift des Vereins für Thüringische Geschichte und Altertumskunde*, 42 (1940), 72-74. W. Wiora, W. Salmen, 'Die Tanzmusik im deutschen Mittelalter', *Zeitschrift für Volkskunde*, 50 (1953), 164-187. Wiora, 'Der Brautreigen zu Kölbigk in der Heiligen Nacht des Jahres 1020', *Zeitschrift für Volkskunde*, 50 (1953), 188-201. R. Wolfram, *Schwerttanz und Männerbund* (Kassel, 1936), 278-280.

27 Report by Theodericus, in: Paris, Bibliothèque Nationale, Ms lat. 6503, fol. 61. The codex had been kept in the monastic library of Echternach where it had probably been written. Printed in: Du Méril, *Etudes sur quelques points d'archéologie et d'histoire littéraire* (Paris, 1862), 498-502. *Miracula S. Edithae Wiltoniensis*. Printed in: E. Schröder, 'Die Tänzer von Kölbigk', *Zeitschrift für Kirchengeschichte* 17 (1897), 126-130.

women, among them the daughter of the local priest, gathered together on the yard of the local church of St. Magnus the Martyr[28] on Christmas Eve at the time when mass service was about to begin. They formed a circle, grabbed their hands and began to dance a round dance while they were singing a series of ballads. These ballads were called "chorolla" (carol) in the text in which one is preserved. It consisted of three verses of which the first two were sung by a soloist as the leading voice while the third one was a refrain sung by the group together. As the report goes, the divinity intervened after the dancing had begun. A ban was inflicted upon the group whose members could no longer stop dancing. Instead they han to continue to dancing during days and nights for an entire year until, on Christmas Eve of the following year, they were relieved from the ban, allegedly through the intervention by Bishop Heribert of Cologne. The dancers relapsed into a deep sleep which continued for several days, and from which some of the group members never woke up again. The surviving left Kölbigk in search for a new home, while they continued to remain ill with painful spasms for many years during which they migrated. Thus, as it stands, this version of the report on the Kölbigk dancers described how the singing of a song and dancing on the churchyard as a graveyard provoked divine wrath and severely punished the singers and dancers.[29]

This version of the report on the Kölbigk dancers is extant in records associated with the monastery of St. Edith at Wilton in England where the man sought refuge and relief from his spasms who is made to have authored the report. It may have been prepared at Echternach together with the other report which is included in a manuscript that was once held in the monastery's library. The text contains a note according to which it had

28 The name of the patron saint is given in the version of the report contained in William of Malmesbury's *De gestis regum Anglorum*, cap. 174, ed. W. Stubbs, vol. 1 (London, 1887) Repr. (New York, 1964), 204. Also in *Annales Stadenses*, ed. J. M. Lappenberg, *MGH Scriptores*, vol. 16 (1859), Repr. (1963), 313.

29 Schröder (note 27). One version of the legend has been preserved in Paris, Bibliothèque Nationale, Fonds lat. 9560, which contains homilies of Gregory I. The manuscript was in the monastery of Echternach at the time when the version of the Kölbigk legend was entered. This has led Schroeder (note 26) to surmise that the literary versions of the legend originated at Echternach. This assumption, however, stands against the fact that there are independent records of the Kölbigk even in the twelfth and thirteenth centuries. These records are extant in annals written by Lampert of Hersfeld on his monastery. Under the year 1038, he refers to the appearance at the monastery of a man who claimed to be one of the Kölbigk dancers and singers and sought cure from his spasms. Lambert notes that the Kölbigk event had taken place twenty three years before. See: *Lamperti monachi Hersfeldensis opera*, ed. O. Holder-Egger (1894). Repr. (1956), 351 (MGH Scriptores rerum Germanicarum in usum scholarum, [38.]) Thirteenth-century records are contained in: 'Annales S. Blasii Brunsvicensium maiorum fragmenta', ed. O. Holder-Egger, *MGH Scriptores*, vol. 30, 1 (1896). Repr. (1964), 17. 'Chronica minor auctore minorita Erphordiensi', ed. O. Holder-Egger, *MGH Scriptores*, vol. 24 (1979). Repr. (1964), 188. 'Annales Stadenses' (note 28).

FIG 14 The dancing sickness. Printed by Matthäus Merian in: J. L. Gottfried, *Historische Chronica* (Frankfurt, 1632).

been dictated by Bishop Bruno of Toul, later Pope Leo IX (1048-1054). It thus presents a perspective on the dancing event which wan informed by church attitudes. Since late Antiquity, church authorities had expressed their strong reservations against dancing.

These reservations had not waned by the seventh century when the *Life of St. Eligius*, Bishop of Noyon, expressed the justice of a prayer through which the saint asked for the divine punishment of dancers.[30] Resentments were also strong in the ninth century when Raban Maur wrote a critical remark against "ioca inutilla"[31] and they induced Bishop Burchard of Worms to enter into his code a specific prohibition against the enactment of "cantica turpica" on graveyards.[32] Burchard protested the enactment of such

30 B. Krusch, ed., Vita S. Eligii, cap. 20, *MGH Scriptores rerum Merovingicarum*, vol. 4 (1902), 710-711, Repr. (1977).

31 Raban Maur, *De magicis artibus* (*PL* 110, cols 1095, 1102-1103).

32 Burchard of Worms (note 25). Augustine, *Confessiones*, X 33, ed. J. J. O'Connell (Oxford, 1992), 138, had pointed out that singing in the church is a grave sin if it more moving as a sound than the subject matter which it transmits. Cf.: Augustine, 'Sermo CCCXI', cap. 5 (*PL* 38, col. 1415). Caesarius of Arles, 'Sermo CCLXVI', cap. 4 (*PL* 39, col. 2239). Childebert, King of the Franks, 'Constitutio' (*PL* 72, col. 1122)(prohibition of dancing on holy days, at Easter and Chrismas and during religious festivals). Council of Auxerre (573 603), *MGH Concilia aevi Merovingici* (1893), 180 (prohibition against dancing together with the holding of feasts in church buildings). Council of Châlon-sur-Saone (639 651), canon XIX, ibid., 212 (prohibition of dancing on the occasions of church dedication festivals commemorations for martyrs). The Augustinian tradition of dance criticism was condensed into the phrase 'chorea est circulus cuius centrum est diabolus' by the thirteenth-century moralist William Perald in his widely read *Summa viciorum*, Basle, 1474. See: R. A. Lecoy de la Marche, *La chaire française au Moyen Age* (Paris, 1886), 447. P. J. Payer, *The Bridling of Desire. Views of Sex in the Later Middle Ages* (Toronto, 1993).

performances as an evil "magical practice", which reminded him of "pagan" rituals and of which he believed that they militated against Christian practices.[33] Thus this version of the report on the Kölbigk dancers was in line with a long tradition of church enactments of prohibitions against dancing, specifically on churchyards and at times of regular mass services.

The version also reports one stanza of the ballad sung by the dancers. The text is the following:

"Equitabat Bovo per silvam frondosam	Bovo was riding on horseback through the green woods.
Ducebat sibi Merswinden formosam	He wedded the beautiful Merswind.
Quid stamus? Cur non imus?	Whe do we stand? Why do we not move?

Bovo and Merswind are mentioned in the report as the names of two dancers. Thus, as it stands, the ballad was suitable to a round dance in which the refrain was sung jointly by all dancers immediately before they began to dance. It seems that such performances were common because the text of the report takes it for granted that the dance was enacted on the spot without previous instructions. As the text contains no explanation why the dancers chose to perform the dance on the churchyard it is not possible to decide whether the location was purposefully chosen by the dancers or rather whether the dances were enacted accidentally by a group of persons who had initially wanted to attend mass service on Christmas Eve. In any case, it seems safe to conclude that it was the dancing performance on the churchyard which provoked divine wrath, and not dancing as such, and it appears to have been perfectly sensible to the author of this version of the report that singing and dancing on churchyards carried with it the risk of even fatal divine punishments. The latter can be confirmed by the fact that the church authorities did much to spread the news about the Kölbigk dancers throughout western Europe.

The staunch resistance by church authorities against singing and dancing performances on churchyards, their denouncing of such practices as "magical" and their invocations of divine punishments upon dancers on churchyards can only be understood

33 This attitude was still current in the sixteenth century treatises against dancing, such as in: M. Auerbach, *Von Tantzen. Vrtheil auss Heiliger Schrift vnnd den alten Christlichen Leren gestellt.* (Frankfurt, 1545). F. Daul, *Tantzteuffel* [1569]. Repr. (Leipzig, 1978). J. Münster, *Ein gotseliger Tractat von dem ungotseligen Tantz. Dem Sohn Gottes zu ehren und seiner Kirchen zum besten. Dem Teufel aber zum trotz und der welt abzubrechen gestell* (Hanau, 1602). See on dance criticism: C. Andresen, 'Altchristliche Kritik am Tanz. Ein Ausschnitt aus dem Kampf der alten Kirche gegen heidnische Sitte', *Zeitschrift für Kirchengeschichte* 72 (1961), 217-262. V. Jung, '"Wilde" Tänze- "Gelehrte" Tanzkunst. Wie man im 16. Jahrhundert versuchte, die Körper zu zähmen', R. van Dülmen, ed., *Körper-Geschichten* (Frankfurt, 1996), 43-70,228-223.

under a number of assumptions. First, it must be assumed that these songs and dances had certain important effects upon persons. Second, it must be assumed that these effects must have been held to be of religious significance. Due to the lack of sources it must remain unspecified what the effects could have been. However, the staunch resistance by church authorities invites the conclusion that these effects were connected with rituals over which the Church tried to place itself in charge. Because the Church issued strong warnings specifically against the enactment of songs and dances on churchyards as graveyards, it is reasonable to assume that the effects which were believed to emanate from songs and dances that were connected with the cult of the dead. If so, such enactments of effect- provoking songs and dances may have been interconnected with pre- and early Christian belief that kin groups comprise the living and the dead, that the living have to preserve their ties with the dead and that songs and dances were the media through which these ties were preserved.[34] In conclusion, the stiff church prohibition against singing and dancing on graveyards made sense under the assumption that early medieval audial perception, as visual perception, was believed to provoke or stimulate anticipated reactions from among the recipients of messages. Hence standard modes of audial perception confirm that, in the early middle Ages, group-specific perception could directly be transformed into group-related action.[35]

However, while church authorities opposed the effect-provoking capacity of audial perception when it may have been interconnected with the cult of the dead, they employed it for their own purposes in other cases. In the late seventh century, St. Aldhelm, successively Abbot of Malmesbury and Bishop of Sherborne, who died in 705, used to stand in the middle of much frequented bridges on sundays when he sang Christian songs in order to remind the newly converted believers of their obligation to attend mass

34 See on the cult of the dead in the early Middle Ages: G. Althoff, *Adels-und Königsfamilien im Spiegel ihrer Memorialüberlieferung. Studien zum Totengedenken der Billunger und Ottonen* (Munich, 1984). G. Duby, *Hommes et structures du Moyen Age* (The Hague, Paris, 1973). J. Heers, *Le clan familial au Moyen Age* (Paris, 1974). N. Kyll, *Tod, Grab, Begräbnisplatz, Totenfeier. Zur Geschichte ihres Brauchtums im Trierer Lande und in Luxemburg unter besonderer Berücksichtigung des Visitationshandbuchs des Regino von Prüm* (Bonn, 1972). M. Mitterauer, *Ahnen und Heilige* (Munich, 1993). O. G. Oexle, 'Mahl und Spende im mittelalterlichen Totenkult', *Frühmittelalterliche Studien* 18 (1984), 401-420. K. Schmid, *Gebetsgedenken und adliges Selbstverständnis im Mittelalter* (Sigmaringen, 1983). Schmid, 'Unerforschte Quellen aus quellenarmer Zeit', *Francia* 12 (1984), 119-147. Schmid, 'Unerforschte Quellen aus quellenarmer Zeit II', *Festschrift für Berent Schwineköper*, ed. H. Patze (Sigmaringen, 1982), 117-140. Schmid, 'Von den "fratres conscripti" in Ekkehards St. Galler Klostergeschichte', *Frühmittelalterliche Studien* 25 (1991), 109-122.

35 Cf.: Rädle (note 26).

services in the churches.[36] At that time, not every settlement had its own parish church and not every parish church had its own resident priest, so that many newly converted Christian believers were forced to walk to neighboring settlements in order to comply with their duties. Some may have been negligent or may have needed a stimulus which could motivate them to go to church, and Aldhelm seems to have been convinced that singing was the proper method to accomplish this goal. As late as in the tenth century, a description of the organ in the cathedral church of Old Minster, Winchester, confirmed that, even within Chrintian liturgy, an audial perception existed which was expected to spark reactions among the attendants of the mass services in that church.[37]

Likewise, the custom of preserving group-centered oral traditions which could be recited by professional singers with an accompanying harp had been practiced in pre-Christian times and continued as a musical art within the kin groups as well as among the high ranking lay residents of monasteries well into the ninth and perhaps even into the tenth century. The wide currency of such musical performances is, among others, recorded in the epic of *Beowulf* which may have been composed late in the ninth or early in the tenth century[38] and confirmed a late eighth century letter by Alcuin in which he angrily attacked the monastic custom of singing lay song.[39] It appears that these performances were extemporized although they may also have followed orally transmitted patterns. The fact that the Church initially tolerated the enactment of oral traditions, not only among the kin groups, but also in the monasteries and could not in all cases prevent the enactment of "carmina turpica" on churchyards as graveyards betrays these forms of audial perception as a wide-spread standard. The songs may have mainly been recitations of oral traditions when sung in the community of the kin groups, but they were also transmitters of Christian doctrine when employed by the clergy, or can have been means of communication with the dead when enacted on graveyards. Hence they were part of the normative framework in the transmission of which kin groups played a paramount

36 See: William of Malmesbury, *De gestis pontificum Anglorum*, cap. 190, ed. N. E. S. A. Hamilton (London, 1870), 336. Repr. (New York, 1964).

37 Wulfstan Cantor, *Narratio metrica de Sancto Swithuno*, vv. 137-156, ed. A. Campbell, *Frithegodi monachi Breuiloguium Vitae Beati Wifredi et Wulfstani Cantoris Narratio metrica de Sancto Swithuno* (Zurich, 1950), 69-70. *Vita Sancti Oswaldi archiepiscopi Eboracensis*, ed. J. Raine, *Historians of the Church of York*, vol. 1 (London, 1879), 464-465. Repr. (New York, 1964). See on the dedication of the Old Minster, Winchester, and its organ: K. Körte, 'Die Orgel von Winchester', *Kirchenmusikalisches Jahrbuch* 57 (1973), 1-24. J. W. Mckinnon, 'The Tenth-Century Organ Winchester', *Organ Yearbook* 5 (1974), 4-19. K. Vellekoop, 'Die Orgel von Winchester. Wirklichkeit oder Symbol?', *Baseler Jahrbuch für Historische Musikpraxis* 8 (1984), 183-196.

38 *Beowulf*, vv. 89-98, ed. F. Klaeber, 3rd ed. (Lexington, MA, 1950), 4-5.

39 Alcuin, ep. 124, ed. E. Dümmler, *MGH Epistolae Carolini aevi*, vol. 4 (1895), 183.

role.

However, this standard mode of audial perception stood against the principles enshrined in the Gregorian choral which had been used since the seventh century as part of the liturgy. Initially, it may have allowed some extemporization and polyphonic elements.[40] But, apparently during the ninth centry, an initiative gained steam that audial perception in the monasteries thould be subjected to the norms of the Christian liturgy.[41] The result of this intiative seems to have been that monks were instructed to sing liturgical texts in accordance with written instructions for the notation and avoid any irregularities of extemporized performances. The oldest extant samples of such instructions date from the late ninth century *Musica enchiriadis* (or *Liber enchiridiadis de musica*), which prescribed the selection for performance of only such musical sounds (*phthongi*) which fell within certain fixed intervals.[42] Consequently, the handbook permitted two parallel voices under strict rules which were subsumed under the concept of "*diaphonia*". "*Diaphonia*" meant that one voice, accompanied by another one, should execute one choral song (*cantus*) "concentu dissono", that is sung jointly, but at a different voice level.[43] Thus, the handbook allowed monastic polyphony only under two conditions, first, that the unity of the choral song remained in tact, and, second, that the sequence of sounds followed certain prearranged time intervals. Explicitly, the handbook likened the notation of musical sounds to the writing of texts, and it was explained that the parallel was that, as texts consist of well-ordered sequences of letters, music consists of well-ordered sequences of sounds.[44] Characteristically, the sequences into which the liturgical audial perception came to be ordered were finite, with the earliest explicit rules

40 See on early medieval secular music: Sahlin (note 27), Wiora (note 26). Polyphonic elements are assumed to be constitutive of orally transmitted music. See: G. Rouget, "A propos de la forme dans la musique de tradition orale", *Les Colloques de Wégimont*, vol. 1 (Brussels, 1956), 132-144. D. Stockmann, 'Musik als kommunikatives System. Informations- und zeichentheoretische Aspekte unter besonderer Berücksichtigung mündlich tradierter Musik', *Deutsches Jahrbuch für Musikwissenschaft* 14 (1969), 76-95.

41 See: A. Ekenberg, *Cur Cantatur? Die Funktionen des liturgischen Gesanges nach den Autoren der Karolingerzeit* (Stockholm, 1987), E. L. Waeltner, *Die Lehre vom Organum in den Musiktraktaten bis zur Mitte des 11. Jahrhunderts* (Tutzing, 1975).

42 H. Schmid, ed., *Musica es scolica enchiriadis una cum aliquibus tractatibus adiunctis recensio nova*, cap. 2 (Munich, 1981), 6-7. Cf.: C. Kaden, 'Tonsystem und Mehrstimmigkeitslehre der Musica enchiriadis', M. Kintzinger, S. Lorenz, M. Walter, eds, *Schule und Schüler im Mittelalter* (Cologne, Weimar, Vienna, 1996), pp. 75-87.

43 See: Walter (note 23), 234-238.

44 Schmid (note 42).

for the conclusion of the sequence being recorded from the early eleventh century.[45] Since c. 1100, a variety of voices were allowed to sing coordinated but distinct *cantus* within these finite sequences, and the "*diaphonia*" became reinterpreted as a "*duplex cantus*", which was joined together into consonances.[46] Hence the *cantus* was no longer restricted to one voice which was orderly accompanied by another, but two or, subsequently, several *cantus* could coexist within a finite sequence of sounds. In summary, by the twelfth century, the enactment of music performances lost its previous task of stimulating reactions from among the audience and became focused on the observation of ordered finite temporal sequences of sounds. Since then, music performances have no longer included impacts from the performer onto the audience of musical sounds in any other than a psychological sense. Hence, in the cases of both visual and audial perception, perception and action have been separated since the twelfth century.[47]

The performance of finite temporal sequences demanded their measurability, which was understood as implying the task of specifying, in numerical terms, the relative length of the coordinated sounds as parts of a temporal sequence. In the thirteenth century, it was believed that some proportion had to be fixed mathematically between the various relative lengths of the sounds, and the coordinated *cantus* were turned into pieces of "measurable music",[48] which had to be "composed" ahead of their performance.[49] The "compositions" were to consist of notations and pauses through which time could be marked. Thus, the orientation of audial perception towards the measurement of sequences of sounds in accordance with the continuous progress of time overlapped with the simultaneous reception of the Aristotelian philosophical concept of astronomical

45 Guido of Arezzo, *Micrologus*, cap. 18, ed. J. Smits van Waesberghe (Rome, 1955), 196-208. Cf.: W. Arlt, 'Stylistic Layers in eleventh-Century Polyphony', S. Rankin, D. Hiley, eds. *Music in the Medieval English Liturgy* (Oxford, 1993), 101-141. S. Fuller, 'Theoretical Foundations of Early Organum Theory', *Acta Musicologica* 51 (1981), 52-84. M. Haas, 'Organum', *Die Musik in Geschichte und Gegenwart. Sachteil*, ed. L. Fischer, vol. 7 (Kassel, 1997), col. 853-881. A. Holschneider, *Die Organa von Winchester. Studien zum ältesten Repertoire polyphoner Musik* (Hildesheim, 1968). F. Reckow, 'Organum-Begriff und frühe Mehrstimmigkeit', *Forum musicologicum* 1 (1975), 31-167.

46 In the so-called Montpellier organum tract, s. v. diaphonia, ed. H. H. Eggebrecht, F. Zaminer, *Ad organum faciendum. Lehrschriften der Mehrstimmigkeit in nachguidonischer Zeit* (Mainz, 1970), 46-47.

47 Cf. on the evolution of composed polyphony: H. H. Eggebrecht, "Die Mehrstimmigkeitslehre von ihren Anfängen bis zum 12. Jahrhundert", F. Zaminer, ed., *Geschichte der Musiktheorie*, vol. 5 (Darmstadt, 1984), 9-87. M. Schneider, *Geschichte der Mehrstimmigkeit* (Tutzing, 1972).

48 Johannes de Muris, *Notitia artis musicae* [1321], ed. U. Michels, *Die Musiktraktate des Johannes de Muris* (Wiesbaden, 1970), 49.

49 Franco de Cologne, *Ars cantus mensurabilis*, ed. G. Reaney, A. Giles (Rome, 1974), 26.

time during the thirteenth and fourteenth centuries.[50] Music became recognized as a "science of time" which, in the sixteenth century, comprised mathematics, astronomy and chronology as well.[51]

The orientation of audial perception towards the measurement of temporal sequences reduced the significance of incalculable music elements, such as spontaneous action, and enhanced the formulation of rigorous rules for music composition, although there were instances of uncomposed pieces of music as vagrant songs and of unorthodox compositions which, at about 1500, were subsumed under the term *frottole*.[52] However, with the beginning of opera performances at the end of the sixteenth century, the rigid abstractionism which informed the standard of late medieval music composition began to soften.

5. *Conclusion: Visual and audial perception*

In summary, the history of audial perception displays the same feature as the history of visual perception. In the early Middle Ages, visual as well as audial perception was expected to translate into action, and this innate interrelationship between perception and action was severed at the turn of the twelfth century. In the cases of visual arts and of music, the separation of action from perception was concomitant with the reorientation of the focus of visual perception from group to space and of audial perception from group to time. In both cases, the process through which perception and action became separated was initiated by the church whose authorities were suspicious of the beliefs in the power-generating heterodynamic influence of pictures and music performances. The separation of perception from action in the late Middle Ages conditioned the theoretical demand to give priority to the grammar of picture-making according to the rules of central point perspective and to music performances on the basis of composed, that is pre-arranged sequences of sounds. The demand followed from the new conception of space and experiences of time which emerged between the eleventh and the thirteenth

50 Cf.: U. R. Jeck, *Aristoteles contra Augustinum. Zur Frage nach dem Verhältnis von Zeit und Seele bei den antiken Aristoteleskommentatoren, im arabischen Aristotelismus und im 13. Jahrhundert* (Amsterdam, Philadelphia, 1994).

51 Joseph Justus Scaliger, *De emendatione temporum* (Frankfurt, 1593).

52 Ottaviano Petrucci, *Frottole*, ed. R. Schwarz (Leipzing, 1934-1935). Cf.: W. Osthoff, *Theatergesang und darstellende Musik in der italienischen Renaissance*, 2 vols (Tutzing, 1969). W. F. Prizer, 'The Frottola and the Unwritten Tradition', *Studi musicali* 15 (1986), 3-37. H. Rosenberg, 'Frottole und deutsches Lied um 1500', *Acta musicologica* 18 19 (1946 47), 30-78. W. Rubsamen, 'From Frottola to Madrigal. The Changing Pattern of Secular Italian Vocal Music', *Chanson & Madrigal 1480-1530*, ed. J. Haar (Cambridge, MA, 1964), 51-87.

centuries and redefined space and time as indefinite and continuous ordering schemes which were placed beyond human control. In turn, the new conception of space and experiences of time spurred the further separation of perception from action not only in terms of practice but eventually also of theory. But that is the story of the separation of esthetics from ethics.