

Guest editorial essay

Flagging early examples of ambiguity I

Perceptual ambiguity refers to the alternation over time between differing interpretations of a pattern. It is a topic of considerable contemporary concern (see Alais and Blake 2005) and it has a long history. Ambiguities often involve fluctuations in apparent depth that occur when insufficient evidence of veridical depth is available, either in pictures or when viewing distant objects. The latter is the condition under which Claudius Ptolemy (c 100–170) described ambiguity: the sails of distant ships appeared to fluctuate between appearing concave and convex (see Smith 1996). In contemporary vision, research ambiguities are studied almost entirely in the province of pictures. On the one hand, outline drawings, like the Necker cube (a literal variant of which is shown in figure 1, left), can appear to alternate between two possible depth interpretations. On the other hand, designs with figures sharing contours (like Rubin’s vase/faces motif) fluctuate between each of the alternatives (a vase/faces configuration made up of those words, can be seen in figure 1, right).

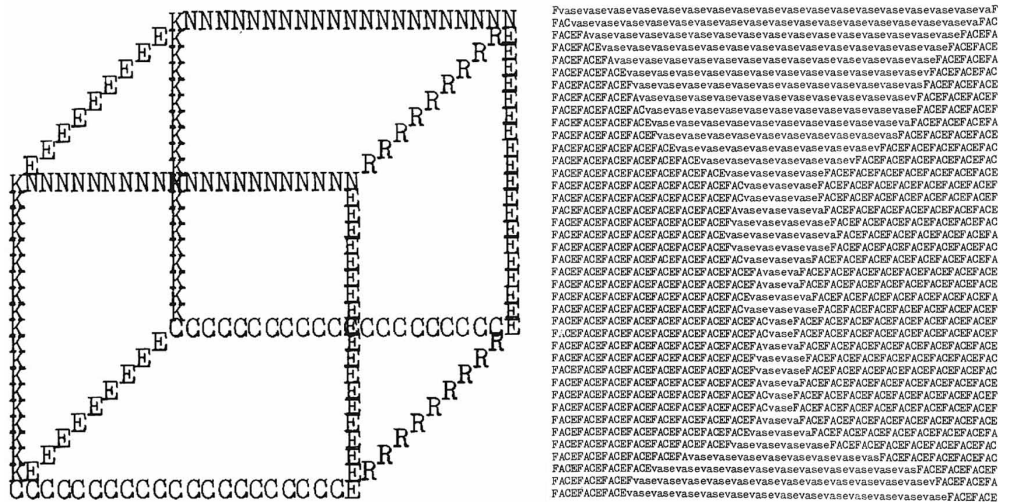


Figure 1. Literal pictures representing and spelling (left) the Necker cube and (right) the vase/faces motif (by Nicholas Wade).

Visual ambiguities have a much longer history than is implied by the reports by Necker (1832) and Rubin (1915). Indeed, the Roman mosaics provide elegant examples of almost all Gestalt grouping principles, including ambiguities of contour and depth (Wade 2004). However, the incorporation of contour ambiguities into Western art was particularly vibrant around the turn of the eighteenth and nineteenth centuries. Two examples are shown in figure 2. The possibilities of ambiguous interpretations of the same contours were both appreciated and manipulated by a variety of artists at that period. Figure 2, left, is by Pierre Crussaire (1749–1800), and both its title and its contents presage the simpler figures of Rubin. In fact, Rubin carried out almost all his experimental work with an alternating Maltese cross figure rather than the vase/faces motif with which he is most closely associated; the latter was presented at the conclusion of his thesis almost as an afterthought. Crussaire’s mysterious urn offers not



Figure 2. Left, *L'urne mystérieuse* by Pierre Crussaire, printed around 1795; not only are profiles defined by the two sides of the urn but they are also different ones. Right, *The olive branch of peace* by an unknown artist from around 1800 (courtesy of Werner Nekes).

only a vase/faces motif (with different faces on each side), but he also hides profiles in the foliage of the weeping willow. Profiles and plants provided rich pickings for the artists who wished to amplify ambiguity. Figure 2, right, presents a leafy plant which carries six profiles. As with the modern examples of ambiguous figures, the alternatives appear successively rather than simultaneously and their perception is referred to as multistable.

The search for early examples of figurative ambiguities tends to have been restricted to Western art (Baltrušaitis 1955, 1977). However, Islamic art provides a source of potentially ambiguous images on account of the richness of the decorative elements in its arabesque figurations (Burckhardt 1976). The complex elaboration of geometrical motifs related to both religious and scientific aspects of Islamic culture. The repetition of highly stylised characters in Arabic calligraphy and the great ornamental intricacy of carpet decoration provided a platform for generating ambiguous patterns. Therefore, it is little wonder that Islamic artists manipulated figure–ground ambiguities with great skill. A good example can be seen in the lily border figuration on one of the Islamic standards captured by the Cavalieri di Santo Stefano (Knights of St Stephen) during their naval wars in the Mediterranean and displayed in their Church in Pisa (figure 3, left).

The collection of ancient Islamic flags and standards (many of which are still exhibited in their Church in Pisa) captured by the Cavalieri di Santo Stefano during their incursions in the Mediterranean is almost without rival in its richness. Their presence is testimony to the ambitions of the Medici family, who founded the Sacro Ordine Marittimo dei Cavalieri di Santo Stefano in 1562, somewhat on the model of the Knights of Malta. In addition to protecting the coast and merchant ships of Tuscany, the Medici aimed at increasing their influence within the complex of city states of Italy and also with its European neighbours (Spini 1971). In addition, they wished to present themselves to the citizens of Pisa as re-establishing the military glories of the old Pisan Republic which had dominated the Mediterranean in the

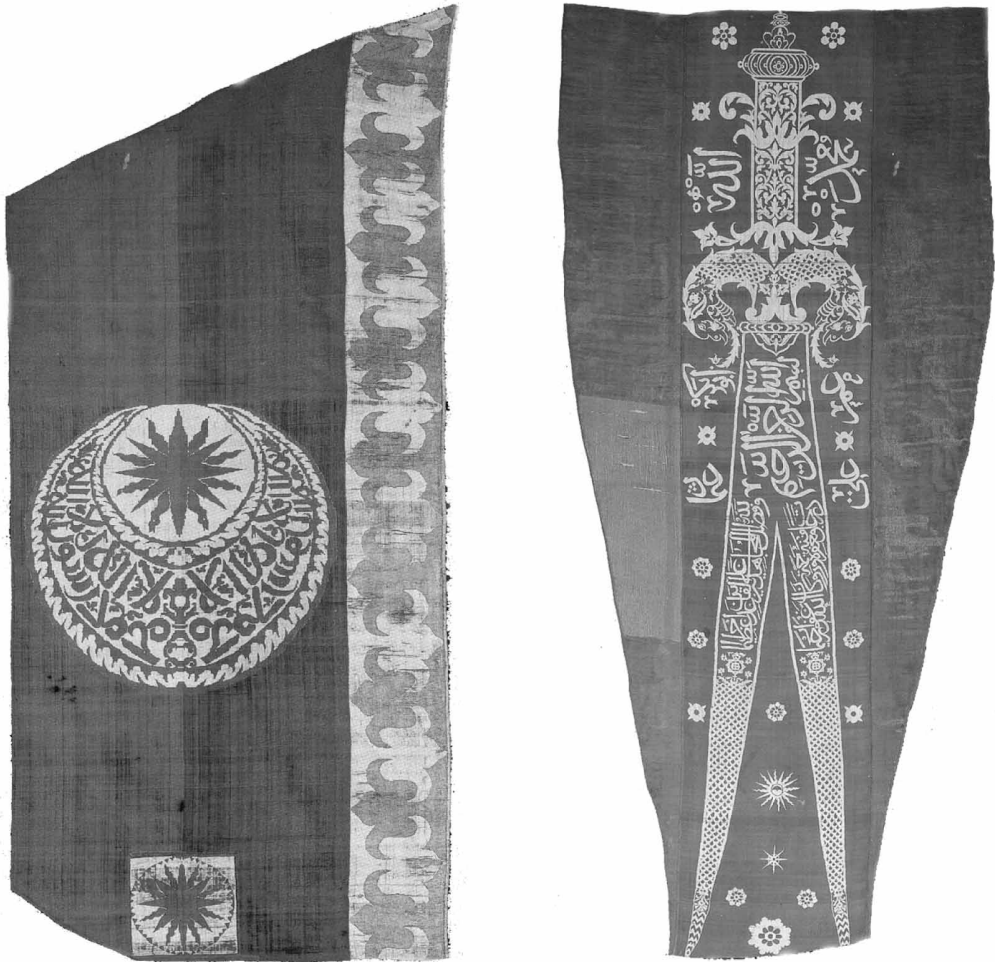


Figure 3. Left, a flag of the Ottoman Empire captured by the Cavalieri di Santo Stefano. The motif on the right of the standard displays a pattern of alternating lilies. The symmetrical lettering beneath and surrounding the star (“God is unique, and Mohammed is his Prophet”) also plays on the figure/ground theme: the letters are defined by the gold-printed background. Right, the banner of the Chiesa dei Cavalieri with the forked sword bearing a visual similarity with a geometrical compass. The symmetry of the design and the decorations (based on ornamental motifs and on Arabic characters) could also convey other subtle visual interpretations. The inscription in Arabic letters outside the sword outlines Mohammed and his first successors at the head of Islam. Inside the sword there is first the phrase used by the faithful of Islam at the start of any religious activity (“In the name of God, good and merciful” and, afterwards, some verses from the Koran (‘Sura of women’) signifying the prize reserved by God to those that would die for the faith. (Reproduced by courtesy of the Soprintendenza ai Monumenti di Pisa.) Colour versions of the flags can be found at <http://www.perceptionweb.com/misc/p3507ed/>.

Middle Ages before it had fallen under the Florentine domination (Guarnieri 1960; Angiolini 1996; Bernardini 2005). Together with other decorative spoils of war, the Islamic flags were once exhibited in their entirety in the magnificent Church of the Cavalieri, constructed on the design of Giorgio Vasari (1511–1574). The ceiling of the church was richly decorated by representations of military victories and other relevant events of the Cavalieri by some of the main artists of the epoch, like Cristoforo Allori, Ludovico Cigoli, Jacopo Chimenti, and Jacopo Ligozzi (Ciardi et al 1993; Baracchini 1996). In these surroundings, the flags must have made a spectacular impact because of their evocative power in suggesting victories against the Islamic navy and

conquests of remote and exotic regions. They were thus particularly important war trophies for the Grand Dukes and this helps to explain why they have been conserved along the centuries.⁽¹⁾

A common feature of Ottoman flags can be seen in the second flag (figure 3, right) which portrays the forked sword of the prophet Mohammed, the *dhû-l-fikar*, an important Islamic emblem, frequently represented in Ottoman empire flags: the sword bears some similarity with a geometrical instrument—the compass. This intriguing feature will be examined in the second part of this editorial essay, where we will uncover a flag design displaying an early instance of the vase/faces ambiguity.

Acknowledgments. We wish to express our gratitude to Werner Nekes for permission to reproduce figures from his collection and to Wafae Marradi and Abu Eid Majd for help in deciphering Arab inscriptions. We also gratefully acknowledge the help of Monsignor Aldo Armani, Prior of the Chiesa dei Cavalieri.

Marco Piccolino

Università di Ferrara, I 44100 Ferrara, Italy; e-mail: pic@dns.unife.it

Nicholas J Wade

University of Dundee, Dundee DD1 4HN, Scotland, UK

References

- Alais D, Blake R, 2005 *Binocular Rivalry* (Cambridge, MA: MIT Press)
- Angiolini F, 1996 *I Cavalieri e il Principe : l'Ordine di Santo Stefano e la Società Toscana in Età Moderna* (Florence: Edifir)
- Baracchini C (Ed.), 1996 *Pisa dei Cavalieri* (Pisa: CRP—Franco Maria Ricci)
- Baltrušaitis J, 1955 *Le Moyen Âge Fantastique: Antiquités et Exotismes dans l'Art Gothique* (Paris: Colin)
- Baltrušaitis J, 1977 *Anamorphic Art* translated by W J Strachan (Cambridge: Chadwyck-Healey)
- Bernardini R, 1997 “Il Registro delle Prede dell’Ordine di Santo Stefano e le Bandiere conservate nella Chiesa conventuale” *Quaderni Stefaniani* **16** Supplement, 149–179
- Bernardini R, 2005 *L'Istituzione dei Cavalieri di Santo Stefano: Origine, Sviluppo, Attività* (Pisa: ETS)
- Burckhardt T, 1976 *Art of Islam: Language and Meaning* translated by J P Hobson (London: World of Islam Festival Trust)
- Ciardi R P, Contini R, Papi G, 1993 *Pittura a Pisa tra Manierismo e Barocco* (Milan: Electa)
- Guarnieri G, 1960 *I Cavalieri di Santo Stefano* (Pisa: Nistri-Lischi)
- Necker L A, 1832 “Observations on some remarkable phenomena seen in Switzerland; and an optical phenomenon which occurs on viewing a figure of a crystal or geometrical solid” *London and Edinburgh Philosophical Magazine and Journal of Science* **1** 329–337
- Rubin E, 1915 *Synsoplevede Figurer* (Copenhagen: Gyldendalske)
- Smith A M, 1996 *Ptolemy's Theory of Visual Perception: An English Translation of the Optics with Introduction and Commentary* (Philadelphia, PA: The American Philosophical Society)
- Spini G, 1971 “Architettura e politica nel principato mediceo del Cinquecento” *Rivista Storica Italiana* **83** 792–845
- Wade N J, 2004 “Good figures” *Perception* **33** 127–134

⁽¹⁾ The flags were restored between 1989 and 2000, thanks to the intervention of the Soprintendenza ai Monumenti e Gallerie di Pisa, Livorno, Lucca e Massa Carrara. Their preservation is due in no small part to the work of an Irish artist living in Pisa, Sarah Butler Hancock, who restored the flags in the middle of the 19th century. According to the Registers of the Ordine there were 117 flags but only 92 survive now (see Bernardini 1997). In the course of the earlier restoration process some of the flags might have been modified slightly in shape and also their colour might have been changed a little.