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The Realism Continuum, Representation and Perception

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The Realism Continuum, Representation and Perception

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Abstract: The realism continuum is a visual model that presents any image as a series of pictures, iteratively reduced in representation from its referent. A continuum has been used before to gauge the effectiveness of educational instruction (Wileman 1993; Dwyer 1972; Knowlton 1966; Gropper 1963) or to explain the communicative potential of different comics stylings (McCloud 1993). Reference is made in new design theory to less detailed images being easier to scan for pertinent information and generally reducing demand on working memory (Malamed, 2009). None of these theorists explains how it is we can see the less-real-than-real in the first instance, even though we’ve evolved looking only at the real. This paper presentation shows why, psychologically we can see and understand distilled and abstracted pictures and also why our visual systems (the eyes and brain) actually prefer these to photorealistic pictures. The presentation focuses on two major tasks of the visual system and how these tasks are facilitated by pictures chosen from deliberate points along the realism continuum. Images of greater realism help to solve the homogeneity problem: distinguishing objects in the same class. That is, telling the difference between Tom, Dick & Harry. Images of reduced or distilled detail facilitate object hypotheses: distinguishing between classes of objects. That is, telling the difference between a person and any other kind of object or thing.

Keywords: Less-real-than-real, Silhouettes, Perceptual Constancy, Visual Closure, Visual System, Realism, Abstraction

Introduction

THE REALISM CONTINUUM is a visual model that presents any image as a series of pictures, iteratively reduced in fidelity from its referent. An example can be seen at Figure 1. In this article we will examine two major aspects of this image continuum. Firstly, we will cover the history of this model and its uses. A continuum has been used before to gauge the effectiveness of educational instruction (Wileman 1993; Dwyer 1972; Knowlton 1966; Gropper 1963) and to explain the communicative potential of different comics stylings (McCloud 1993). Secondly, we will explain that several theorists have described the difference in communicative potential of the different levels of realism. Reference is made in new design theory to less detailed images being easier to scan for pertinent information and generally reducing demand on working memory (Malamed, 2009). But none has described why this works in terms of the human psyche; just how do we see and understand the image that is less-real-than-real in the first place? We will discuss the psychology behind the perception of reduced imagery. Following these explanations we will focus on two major tasks of the human visual system and how these tasks are facilitated by pictures chosen from deliberate points along the realism continuum. We propose that images of greater realism help to solve the homogeneity problem: distinguishing objects in the same class; that is, telling the difference between Tom, Dick & Harry. Images of reduced or distilled detail fa-
cilitate accurate object hypotheses: distinguishing between classes of objects, for example, telling the difference between a human and any other kind of object or thing.

![Realism Continuum Diagram](image)

**Fig. 1: An example of a realism continuum (Medley after Wileman, McCloud, et al)**

**An Abbreviated History of the Realism Continuum**

*A Guide for Improving Visualized Instruction* (1972, p.95) is the earliest work to imply a ‘realism continuum’. Dwyer makes a table of the variables to be taken into account when considering illustration for instructional use. His term, ‘illustration’, means images used to support an instructional text or verbal commands. As such, the term includes photographs. His table includes *Educational objectives; Student characteristics; Method of presentation; Type of visual; and Cueing techniques*. Of these, it is the *Type of visual* variable that alludes to levels of realism used in illustration, and that images may be chosen by this criterion. Indeed, in a later study, Dwyer (1979) refers to the ‘realism continuum’ as just such a measure of *type of visual*. The limitations of Dwyer for our investigations are that he was concerned only with realism. His continuum ends at realistic line drawings rather than heading further in the direction of distillation or abstraction. To look further along this continuum we need to explore the work of other visual communication theorists. Wileman, in *Visual Communicating* (1993) attempts to cover the whole gamut of image types in terms of their level of realism. Wileman states that his audience is “anyone who wants to improve his or her use of visuals in learning environments” (p.v). His linear scale runs from ‘concrete’ at the realistic end to ‘abstract’ at the distilled end. Wileman (p.12) places along this scale a handful of different picture types as examples. He states that “There are three major ways to represent objects—as pictorial symbols, graphic symbols, or verbal symbols”. These categories are based in part on Rudolph Modley’s categories for graphic symbols (Modley, 1976). Note, that Wileman covers in his first category, ‘pictorial symbols’, those images which Dwyer was concerned with in total. Wileman continues,

> Pictorial symbols are produced as photographs, illustrations and drawings. All of these are attempts to represent the object or thing as a highly realistic and concrete symbol. The viewers should easily be able to translate a pictorial symbol to a real world example. (1993, p.11)

Although in the examples given at Figure 2, it can be argued that the silhouette with detailed outline belongs in the pictorial symbols category since its appearance is a function of lighting conditions rather than any iconic or symbolic abstraction. That is, a silhouette can occur in the real world; the visual world unmediated by photograph or drawing. Using his model, Wileman found that the most realistic pictorial symbols were rarely likely to be the most
readily identified. In essence, his work echoed findings in Goldsmith (1984) and Gombrich (2002) that the most realistic image is not the most communicative.

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Fig. 2: Wileman’s ‘Concrete to Abstract’ Continuum

McCloud (1993) goes further than any of the previous theorists in using the continuum concept. He is particularly focused on the visual presentation of character and what a move away from realism entails in this regard: “When drawing the face and figure, nearly all comics artists apply at least some small measure of cartooning. Even the more realistic adventure artists are a far cry from photo-realists” (p.42). McCloud’s model, in Understanding Comics, does not echo Wileman’s approach, but contradicts it in more than one aspect. Attempts to reconcile the two approaches are difficult. In contrast to Wileman, McCloud has ‘abstract’ on a separate axis to ‘concrete’ (Figure 3). McCloud’s scale of realism goes from ‘concrete’ to ‘iconic’ along the x axis. While it seems perfectly logical to pare away detail a little at a time to create a reductionist picture from any given image, to jump from this linear path to a purely symbolic image seems to break with that logic. Things become more ‘abstract’ for McCloud perpendicular to this scale, along the y axis. He declares that “iconic abstraction is only one form of abstraction available […] usually the word ‘abstraction’ refers to the non-iconic variety, where no attempt is made to cling to resemblance or meaning […] this is the realm of the art object.” (pp.50-51) However, McCloud puts writing on this same x axis as the realistic picture. But writing is purely abstract, so it remains unclear why writing belongs on McCloud’s iconic realism continuum while abstract images do not. Gregory (1970), Feldman (1976) and others have explained alphabetic characters as derivations of representational images, so it seems appropriate to consider them on this continuum. The fact that these, like letters are no longer directly connected to their visual roots (‘A’ derived apparently from the bull’s head, a semi-circle perhaps derived from a half-moon for example) does not mean they are not abstractions of them.
In McCloud’s own subtitles for his continuum, he seems to make an argument along these lines. Beginning with what he describes as a scale of ‘iconic-abstraction’ (p.46), he describes what is happening along this scale; what other researchers regard as an ‘increase or decrease in detail’ (Dwyer, 1979, pp.19-25). McCloud resolves that this lessening of realism results in several changes in communicative potential, by subtitling his scale as Complex to Simple; Realistic to Iconic; Objective to Subjective; Specific to Universal, closely reflecting Lilita Rodman’s (1985) concept that abstraction moves images from the particular to the generic; from a focus on surface to a focus on structure; and from mimetic to symbolic.

It is worth remarking that McCloud and Wileman both postulate that the continuum should contain words, reiterating Mitchell’s statement: “it isn’t that words and images exist in separate compartments, or that they only interact as antagonists. One of the key things about language is that images come bubbling up inside of it” (2008, p.25).

Wileman’s line progresses from photograph through illustrated drawing, to image related graphic, concept related graphic, arbitrary graphic (note, Wileman acknowledges and accommodates this arbitrariness), to verbal description, and noun label (1993, p.12). Wileman and McCloud’s scales do not coincide at this textual end. For McCloud, the noun label precedes the description going from left to right, his reason being that individual words, especially those presented with graphic ‘punch’, come before the more elaborate prose of a description (1993, p.48).

Another model, Meggs’ (1992), effectively follows Wileman in terms of his classification of possible image types. Meggs refrains from labelling this as a continuum however, and he does not follow Wileman or McCloud so far as to go into text territory. Like Wileman, Meggs includes arbitrary abstractions, and like McCloud (and Dondis, 1973) he recognises that less
realistic images become less specific. Beyond this however, he makes no mention of how these approaches to image making relate to each other. Rather, his list appears to be a basic taxonomy of image types: “Images are pictures of all kinds ranging from simple pictographs to illustrations and photographs” (p.19).

The concept of the continuum exists in a few other theorists’ work, but is never as overtly articulated as in these above. Gombrich had a version, but appears to have chosen not to set it down in a diagram: “however we interpret the facts, it remains true that all representations can be somehow arranged along a scale which extends from the schematic to the impressionist” (2002, p.247). He is interested in the pull to the more distilled end of the scale as the natural impulse of the artist. Smerdon is cited in Kiefer’s The Potential of Picturebooks (1995) as using a conceptual continuum to ascertain children’s preferences for realism and abstraction. Generally, Smerdon found that the older children preferred art that was more realistic. Kiefer disregards Smerdon’s study however, for, among other things, ‘meddling’ with the art in its original form by removing colour from the pictures shown to his sample groups.

**Representation and Application**

Generally, the theorists who have used a continuum model suggest that the way things are represented, how realistically or otherwise they are depicted, affects how images are received, and therefore the meaning gained from them. Clues to this implication can be found in art history; for example that, ‘the first prejudice teachers of art appreciation usually try to combat is the belief that artistic excellence is identical with photographic accuracy’ (Gombrich 2002, p.4). The importance of matching a visual representation to a desired outcome is already acknowledged and taken advantage of in fields such as animation (Coco 1995; Robertson 1995), character-agent design (CA, embodied agents e.g. Ananova, Adele, Steve) (Haddad 2005; Wonisch & Cooper 2002) film and television (Philpot 2000), art (Preble & Preble 1994), simulation (Johnson, Rickel & Lester 1999), visualisation (Robertson 1997; Digital Humans, in Wired 1996), robotics (Wolfson 2001) and computer-based instruction (Dwyer cited in Allessi & Trollip, 1991) to name a few.

Various studies into levels of abstraction in representation indicate influence upon user/reader/viewer affective response as well as information delivery effectiveness (Haddad 2005; Koda & Maes 1996b; Schumann et al. 1996). A significant number of studies and literature recommend that less accurately rendered visual representations are more effective communicatively. This is due to less distraction associated with the over-reading of unintended messages because of presentation complexity (Wilson 1997; Dwyer cited in Allessi & Trollip, 1991). In reference to Communication Theory (Figure 4) (Berlo 1960, drawing on Shannon and Weaver (1948) it can be said that more realism creates more noise (distraction) from high user expectation and unnecessary cognitive activity about the image itself.
Haddad’s study (Figure 5) into three iteratively reduced pedagogical talking head character-agents (CAs) suggests that detail found in realistic images that is not pertinent to the context or the message being delivered may be regarded as noise in a communication. Where source, message and receiver are constant, a channel with noise (distraction) is less effective than one without noise (Bello 1953). More specifically, communication theory provides a basis to the concept that the clarity or fidelity of information passing through a visual representation to the user can be influenced by distraction (interference or noise) generated by that image.

Although there is a growing awareness of the differences of representation and their uses, it is a little explored area in terms of classification, measurement or diagnostics.

Psychology of the Less-real-than-real

None of the above texts however, explain how it is we can see the less-real-than-real in the first instance. Two aspects have been missing from the history of this discussion. Firstly, how can we perceive the more reduced images? Secondly, and following on from this first question, what tasks of perception do the different levels of realism and abstraction help us with?

So, how can we perceive images that are not realistic? The most realistic image has been demonstrated not to be the most communicative (Malamed, 2009; Gombrich, 2002; Gregory, 1970). Line drawings perform better in this regard than photographs of the same things (Fussel & Haaland, 1978). This may seem surprising. If the human visual system has evolved among the real visual world, it should stand to reason that any means that can replicate that world accurately is the best means to communicate visual information to the reading or
viewing audience. The photograph springs most readily to mind: as Susan Sontag explains in *On Photography* (1977), a photograph is ‘directly stencilled off the real’ (p.154). Yet we can see and understand images that have been abstracted or stylised through drawings of various kinds. This raises the issue of learned versus innate visual understandings; perhaps we must learn to see and understand the non-realistic image. However, understanding of abstracted and distilled images appears to pre-exist acculturation: infants, for instance, presented with two dots and a line in a facial arrangement tend to spend more time viewing such an image than they would a ‘non-face’ configuration of the same graphics. This suggests that such an image is understood as representing a face (Morton & Johnson, 1991; Fantz, 1961). We will explain very briefly, some mechanisms of the human visual system (eyes and brain) that enable identification of less realistic images than those found in the real world.

One could argue that in nature there seem to be some images available to the eyes that communicate information without being typically ‘realistic’. Things viewed from a distance and things viewed in silhouette provide a less-real-than-real version of what they would stand for at an ideal viewing distance in ideal light. However, this is a satisfactory explanation of how we link the abstraction to its realistic other only if the viewer knows what kinds of things these are s/he is looking at. Otherwise these ‘less real’ looking things would potentially be regarded as novel to the viewer, presenting, as they do, differently on the retina than would a closer and more ideally lit version of those same things.

A review of literature from the fields of education and psychology suggests a paradox about the way we ‘read’ images: That one can communicate more accurately with less accurately rendered pictures. A group of faculties of the visual system, labelled by psychologists, ‘perceptual constancies’, explain that the brain knows what the eye does not. These mental workings override purely visual sensations to prevent the individual from mistaking unique sensations on the retina as unique objects. The visual system is not merely accepting of what presents on the retina, but in fact is measuring that presentation against what the brain knows of the world. The visual detail of the real world is a difficult problem that needs to be solved.

Shape, size and colour constancies are examples of these mental mechanisms (Walsh & Kulikowski, 1998, p.492). Size constancy explains that an object is perceived as having the same size regardless of its distance from us. Knowledge of its size will override its presentation on the retina. Shape constancy explains that an object is seen to have the same shape regardless of orientation. Thus we see things ‘as they really are’ and are not taken in by variations in shape presented to the retina. Colour constancy explains that an object is perceived as having the same colour regardless of changes in light. That is, the brain assumes that an object is less likely to change its own colour than it is to take on different colours as a function of changes to ambient lighting. This connection between the two visual versions of the same thing is what allows us to see the less realistic as having a relationship to the more realistic. Or rather, the less detailed can stand for the more detailed but in a more general way: the detailed version may be an individual we recognize; the less detailed we may simply regard as ‘a person’. The same would apply for the ideally lit figure and the silhouetted figure respectively. These mental faculties tell us that the real visual presentation of an object upon our retinas must be matched against existing mental information. Implicit in this is that the knowledge already gained of the world exists in some kind of visual form. This form does not precisely match any ‘real’ visual version of such an object but must contain a range of information from different viewpoints and under different lighting conditions.
The Two Ends of the Line

The continuum theorists above assume a linearity, not just in the iterative reduction of detail from the original photographic capture of something but also in the way this reduction causes the pictures along the continuum to change in communicative function. For example, McCloud sees the continuum as serving to describe pictures as Objective to Subjective; Specific to Universal. This implied linearity of function would suggest that pictures become progressively better at communicating some things and worse at others as they are chosen from one end to the other along the continuum. However, there appears to be some situations where this linearity is confounded.

Fussel and Haaland (1978) describe how they put visual tests (containing images of “common objects” such as a tree, people, a chicken, etc.) before some 400 Nepalese adults who were unused to pictures. The study was done in order to prepare materials for instructional booklets for illiterate villagers. The study group was shown 10 different things presented in six different styles. These styles, from realistic to distilled, comprised black and white photographs; black and white photographs with background removed from around the subject (‘blockout’); a line drawing with shading and internal detail (a ‘three-tone’ image); the same drawing without shading and with minimal interior detail; a silhouette; and a line drawing. Cumulative correct responses to all 10 of the pictured subjects were as follows: Three-tone, 72%; Blockout, 67%; Line drawing, 62%; Silhouette, 61%; Photograph, 59%; stylised drawing, 49%. The authors conclude that:

the lessons to be learned from this part of the study would seem to be that the more detailed and realistic a picture is, the more effective it is. The so called ‘simple’ stylised drawings are evidently not simple in anything but appearance, making greater demands on the person trying to interpret them. (p.27)

However, the authors do not make special mention of the photographs, the most ‘detailed and realistic pictures’ in the sets as having performed the worst bar the stylised drawings. It is by no means a simple progression towards realism that will solve their communication problem since the most realistic of the image sets performed almost as poorly as the least realistic, and the best performing sets of pictures in terms of realism actually lay in between these two extremes.

Perhaps the progression along the continuum is problematic because the visual system has more than one task to perform. Psychologists talk of ‘Object hypotheses’ and the ‘heterogeneity problem’ (Rhodes, 1996). What these mean, respectively, are ‘what kind of object am I looking at?’ and ‘which one of those particular objects am I looking at?’. The first is a more coarse problem of differentiating between classes of objects; is that a car or a house? The second is a more fine-tuned question intended to differentiate between objects within the same class; what model of car am I looking at? We propose that the coarse problem is more effectively dealt with by communicating with less realistic pictures. And the fine problem more effectively dealt with using pictures higher in detail, more closely matching their real-world referent. Accordingly we have begun experiments to refine the use of the realism continuum to highlight these cognitive tasks.

Using exercises involving graphic design undergraduates (Figure 6), one of the authors asked students to differentiate between a person and a tree. Only seven students from 40
drew any internal detail in either their tree drawings or their people drawings. Seventeen students chose to draw in a highly reductive fashion, similar in style to many airport pictograms, whereby the tree was more or less a circle at the top of a straight line and the person similar to a public toilet icon. Drawings always included the whole outline of both the tree and the person. The same students were later asked to differentiate pictorially between two of their classmates. This time, only two of 40 used the outline-only method. Only five students drew the whole outline of their subjects. The remaining 35 students drew their subjects either from the waist up or as head-and-shoulders portraits. Of those, seven students chose to visualise faces only. All students except two included detail interior to the outline of each person they drew. In short, interior detail was used for the task of differentiating between objects of the same class of things (between individual people) while this technique had largely been disregarded in the first part of the exercise (differentiating between person and tree).

![Figure 6: Example of student work differentiating between objects in different categories (at left) and within the same category (right) (Uriah Gray).](image)

The detailed line drawing mentioned in Fussel and Haaland may owe its communicative success to being in a kind of ‘sweet spot’ for the human visual system as a drawing that can solve both these tasks. For some particular communication problems at least, this kind of depiction may be the ideal between realism and distillation. Ascertaining this will be the subject of future studies.

**Conclusion**

Clearly this discussion concentrates on perceptual responses to images rather than on the role of interpretation. Our bias comes in part from a graphic design background where practitioners in the discipline are generally trying to reach a wide audience. The bias is adopted in order to establish whether we may confidently agree, as a design community, on the ways images communicate because of their relationship to realism; to ascertain what we have in common in terms of perception before we decamp into visually interpretive factions. Further complicating this issue is that perception, as psychology would have it, is interpretation of sensation. From experiments conducted with students of varied international backgrounds (Medley, 2009), however, the realism continuum model does seem to have some
universal currency. When students were asked to place, from most realistic to least, half a
dozens different, unlabelled representations of the same object along a continuum, the re-
sponses were uniform. Again, however, we must acknowledge that design students are not
laypersons when it comes to the image. Training in aspects of the image can change the way
The continuum is also a rather blunt instrument. Choices, in reality, don’t lie neatly along
a spectrum, arranging them so is merely a ‘convenient organizing principle’ (Mazzucchelli,
2009, p.128). Of particular issue is the above mentioned position of the silhouette versus the
detailed line drawing upon the continuum. The silhouette is closer to the colour photograph
in that it too can be captured from the real world using a camera. On the other hand, the de-
tailed line drawing is closer to the colour photograph in that it may contain nearly as many
salient details as the photograph.
We have been interested in our research in this realism continuum concept as a way to
evaluate, if not quantify, pictures, especially in the realm of graphic design where the theory
is heavily weighted in favour of text and typography. This seems to us a very worthy challenge
in spite of warnings that it is a wild-goose-chase. Anne Bamford in the Visual Literacy White
Paper (2003) states that there can be no vocabulary of images. But what if vocabulary is the
wrong parallel to be looking for between textual and pictorial communication? If there must
be a textual analogy, perhaps tone rather than vocabulary is the way to think about commu-
nicating with images. The way things are represented, how realistically or otherwise they
are depicted, affects how we read images, and therefore the meaning we gain from them.
This is more akin to two authors writing about the same subject using different tones; the
feverish verbosity of an Edgar Allen Poe will give us different meanings to the lean, dry
prose of an Ernest Hemmingway.
Our research is beginning to show that there can be some shared understandings of how
images communicate depending on the realism quotient. Furthermore, we hope that this is
more than an academic enquiry. Already the research has given us terms with which to explain
to students where the imagery in their designs is effective and where it might need more
work, and why. Such articulation will also enable the designer to communicate more confid-
ently with his or her client about all aspects of visual communication, rather than just the
typographic half of the graphic design equation.

References
Bello, F. (1953). The Information Theory, in Readings in Management Information Systems, G. B.
State College, PA.
Dwyer, F. (1979). The Communicative Potential of Visual Literacy: Research and Implications. Edu-
cational Media International, 2, 19-25.


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Stuart Medley’s illustrations have been published in Deanne Cheuk’s Mu and Neomu magazines. In addition, Medley was the editor of SiC BAG comics, now in the Michael Hill Collection at the Australian National Library. He currently lectures in graphic design in Australia and New Zealand. He has spoken at various conferences including Typographic2005, Lebanon, and the NewViews2 2008 conference at the LCC in London. His writing about design has been published by the Australasian Medical Journal. Medley’s work on information design was selected as research excellence by the Australian Council of University Art and Design Schools, 2009. He is the designer for Hidden Shoal Recordings, a critically acclaimed record label with a roster of international artists. He has a Ph.D based on the paradox that less realism allows more accurate communication. His examiners included Professor George Hardie, who described the research as bringing image into the fold of graphic-design theory.

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