MRU's "Prospect On" Articles Series

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## The RGB Iron Prison

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November 11, 2006

## 1 Preamble - The Iron Prison

The Iron Prison is a metaphorical linguistic device which has been created by the American writer Philip K. Dick. It indicates the inherent state of limited knowledge and hindered epistemological access to truth which has characterized the history of humankind from its origin to our days.

Religious beliefs, technology, and scientific research have failed to wrap up and fold away the veil of Zina, which still fundamentally removes human beings from the ground truth, as well as from what lies beyond. Zina is a mythological figure incarnating the substitution of buoyancy, and direction of being, for nothingness, a useful interpretation key to our world, suggesting a narrative definition of 'evil'[1].

Other devices developed by the same writer call for further interpretations, including external intelligence existing just 'outside of the box', desperately trying to get in touch with the interior, essentially to inform us about the actual situation outside, and barely filtering through the prison's Iron Bars.

## 2 The RGB (Red, Green and Blue) Iron Prison

In our current technological scheme of things, all digital images of the external world (that is, direct mappings from the environment to a surface) captured by any digital device (digital camera, videocamera, TV camera, webcam, scanner, etc.), stored or sent from any computer or electronic support, and displayed by any visualization device (CRT screen, LCD screen, plasma screen, projector, etc.), are based on the RGB color scheme[2][3].

The RGB color scheme is essentially a model to represent and visualize colors on digital devices, designing the scope of the information being sent to the displays.

Its introduction in the middle of the last century was not based on meaning-seeking visual research: in fact, it was the easiest way to broadcast television images in color without incurring in compatibility problems with the preexisting and preeminent (in the original extent of their diffusion) black-and-white CRT televi-

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[1]Zina can be seen a more up-to-date and esoteric equivalent of the classical philosophical figure of Maya and of her Veil

[2]Other forms of signal composition exist which we believe do not fundamentally modify this conceptual premise

[3]Physical supports (such as analog photography, and film used in movies and analogically projected in cinemas) do not have this specific constraint, although they depend on the maybe more stringent characteristics of the materials reacting to light of which they are made. The glass optics of all of our 'digital eyes', instead, are not to blame on this front

sions[4].

All that came after it, from the now almost two-digit-megapixel consumer digital cameras, up to and including the now boasted (and dubbed as 'revolutionary' by many) High Definition (HD) technology, greatly enhanced the technology from that first step.

However, they are just a corollary of that initial compromising dependency on the RGB model - which originally was seen a crucial feature, and now can be doubted being a mistake.

Due to this pragmatic origin, the RGB color scheme has epistemologically-serious limitations concerning the range of colors of our visual world which can be possibly displayed. This becomes for all common knowledge when we look at our summer photographs on a brand-new LCD screen, not finding the hues and the subtleties of the source[5].

The RGB color space is a small triangular-shaped subset of the whole color scheme as obtained from light wavelength information alone. The latter scheme, in turn, is more comprehensive but conceptual in nature and never practically implemented.

Moreover, it does not probably take into account the possibility of interaction between color values or wavelengths, forming new entities having a higher level of aggregation than the level of energy levels alone. Just like vision, that is not just a sum of rays of light recorded by the eyes' receptors, but, in short, the result of the fundamental intelligence of our perceptual system and of our reality. That is to say, who knows from what else we are cut out.

It is curious to note that the software Adobe Photoshop allows the user to directly make a reference to the more comprehensive color scheme in picking and tuning colors for professional photographic editing needs [6]. Unfortunately, those colors cannot be displayed on any screen, and remain the invisible support for making specific ranges and hues, which may give billboards a better virtual finish, but just as gregarious entities, and not as the direct object of vision[7].

Research worldwide has produced many great inventions: that we know of, representing RGB values based on floating point numbers for a finer grained and better distributed color information and enhanced High Dynamic Range (HDR) technologies [8], more-realistic 3D shading models [9], ultra-high resolutions monitors beyond High Definition (HD) [10], and many others. However they do not seem to address the epistemological problem indicated above.

But the fundamental point is: this way we miss out the most and the best colors of reality, and we do it increasingly often, by substituting our daily sights with 12bit — oh sure, 16bit by now! — cellphone screens and our staple desktop background in 'True Color 32bit'. We can still use digital proxies in general, but we need better ones, more of them, and sold as cheap as the current ones, to augment and not to substitute our daily 'brewing of reality'.

## 3 Conclusions

Those missing colors are not superfluous dead matter, since they daily give to our eyes a unique perception of 'something out there', a glimpse of 'something independent of ourselves', and crucial information for our survival, beyond passive reception. Those variations have been hinted at by some authors by the words 'those oblique rays [of Sun, in my memories as a child]'[11], or also 'the way the light attaches [to a girl]'[12] just to name two, surely of different extraction (and right out of short-term memory).

On the running train of IT-related development of visual technology, and its well-known production and commercial massification corollary, the elephant-in-the-room 'they' may not be aware of the fact that the preservation of those perceptual moments above are, or should be, the true necessities of any modern balanced individual, beyond the gibberish of 'media convergence' and you name it. We are referring to an individual who is maybe just looking for more to see — and, yes, to buy — in this Christmas season.

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[4]ref.:'Il libro bianco dell'Home Theater' (whitepaper), Suono, Edizioni de il Mondo Nuovo, Settembre 2005

[5]This holds regardless of 'how much money we put into the camera'. A camera might have done a good job all the same, regardless of what we see, since most are made out of good design

[6]ref.: 'Adobe Photoshop - Colori Perfetti' - Future Media Italy, 2000

[7]We heard of some high-end technologies having been de-

veloped for color calibration of monitors, video adapters and physical printed output, to offer a better control on the production of color-based documents – regardless of those practical detours, the RGB model is still the epistemological bottleneck of the system (or possibly just the one indicated in this article)

[8]Max Planck Institute, technology shown at CeBIT06, Hannover (Germany)

[9]See ATI, Nvidia, S3, SiS websites for information on today's 3D video chipset technology

[10]Just consider for example new Apple's Cinema Displays

[11]Fedor Dostoevsky, The Brothers Karamazov

[12]Counting Crows, A Long December