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DEL COLORE**

**COLOR
CULTURE
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Topos vs. Iris.

Colour design in Web 3.0 mobile app and OS: a critical review

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ABSTRACT

The IT world – i.e. IBM or Intel just to mention some of the most popular and elderly companies – seems to have always favoured some colour ranges identified – among all the possible palettes – in blue/cyan variants and grey scale, making of them a sort of chromatic commonplace. This choice apparently perpetuates itself and become even more recurrent in the Web 2.0. Virtually all brands and interfaces of social networks and sharing platforms first generation elected light blue not to be a differentiating element rather of similarity. From the Facebook blue to the Twitter or Vimeo cyan, colour seems not to be part of the visual language aimed to distinguish the company corporate communication, on one hand, nor the user experience of these platforms, on the other. If the physical impairment of Zuckerberg – that made him choose a specific light blue visible also to people with a partial colour blindness – has become almost a urban legend, is not so clear why other brands and entrepreneurs decided a similar chromatic approach, not to say mimetic and plagiarized. Conversely, the mobile Web 3.0 in its variations – for example iOS7 – breaks this pattern opening up to a more wide variability of expression and connotation. But in this re-appropriation of a key component of the visual language does not apparently correspond consistent design awareness. However the lack of constraints – instead of being a challenging opportunity to experiment knowingly with new uses of chromatic codes and meanings – is letting forget the basics of the colour language even in its most basic and semiotic consolidated design guidelines. The paper suggests a critical review by the exemplification and comparison of the major players in the Web 3.0 market referring both to the design of colour principles – as part of the graphic culture and the user experience – and to the Web Accessibility Initiative guidelines and to W3C standards.

KEYWORDS

Colour design, Visual language of colour, Colour in Web 3.0, Colour in social media, Colour blindness accessibility

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1. INTRODUCTION

The IT world —i.e. IBM or Intel just to mention some of the most popular and elderly companies seems to have always favoured some colour ranges identified —among all the possible palettes— in the spectrum of blue to cyan and grey-scale variants, making of them a sort of chromatic commonplace. This choice apparently perpetuates itself and become even more recurrent in the Web 2.0. Virtually all brands and interfaces of the first-generation of social networks and sharing platforms elected *light blue* as tint dominant, using colours not as a differentiating asset, but rather as an element of similarity.

From the *Facebook blue* to the Twitter or Vimeo cyan, colour seems not to be part of the visual language aimed to distinguish the company corporate communication, nor the user experience of these platforms.

If the physical impairment of Zuckerberg —that made him choose a specific light blue visible also to people with a partial colour blindness— has become almost a urban legend (although confirmed in several interviews), is not so clear why other brands and entrepreneurs decided a similar chromatic approach, not to say mimetic and plagiarized.

Conversely, the mobile Web 3.0 in its variations —for example iOS7 or recent *Material Design Guideline* for Android or social platform such as Pinterest— breaks this pattern opening up to a more wide variability of expression and connotation. But in this re-appropriation of a key component of the visual language does not apparently correspond consistent design awareness.

However the lack of constraints —instead of being a challenging opportunity to experiment knowingly with new uses of chromatic codes and meanings— is letting forget the basics of the colour language even in its most fundamental and semiotic consolidated design guidelines.

The paper suggests a critical review by the exemplification and comparison of the major players in the Web 3.0 market referring both to the design of colour principles —as part of the graphic culture and the user experience— and to the Web specific standards

2. FROM BRAND TO WEB: A COMMON CHROMATIC PATH

Mainly due to the involvement of one of the most well-known US brand and graphic designer —Paul Rand— and its remarkable experience, IBM became one of the first companies to set a standard in brand iconography in IT field bounding deeply in the corporate culture both the bold and strong slab font and the deep and

charming blue.

According to the most established attribution of meaning —at least in the western countries— blue represents one of the most *serious* tint to choose and to use from the colour palette. It has a connection with the concept of calm, relax, deepness, reliability, trust, solidity, security (for a deeper understanding of colours meaning see historical studies: Albers [1] and Itten [2]; in the field of digital design and internet application: Zwick, Schmitz and Kuehl [3] and the experimental study conducted in 2007 by the author and Greco [4]).

IBM's brand has become a milestone and a sort of benchmark in technologies field to look after. Intel itself —just to mention the most remarkable entrepreneurship realities— has chosen a bold blue as primary identity colour and magenta as a secondary one to create a huge contrast. Fostering from electronic to information technologies, that means growing on a scale of dematerialization, the Windows operating system and its graphical user interface is linked to the duality of blue and grey. The same combination —although treated with a graceful balance among cyan, light grey and with— was used both in the web site and in part of the iOS 7 action triggers and button [5].

This combination —in the variant of a bright blue tint and a dark neutral grey— was originally used also from the first generation of browsers' HTML 1 visualization defaults, that means Netscape and successively Internet Explorer. This widely diffused colour combination has become a common place in which many brands, design patterns, GUIs' chromatic palette found a shared language. It seems to work consistently according to the mental model already well known by the users.

Although just referring to link visualization, Jacob Nielsen himself recently abandoned the thought that the chromatic pattern applied to the interactive textual elements —electric blue/link, red/active-link and purple/visited-link— should be used permanently as the only possible way to convey a correct affordance to people. A way to admit that colour meaning and mood, if correctly used to highlight or put elements in evidence, are stronger than standard —not designed— solutions inherited by the software culture. In the book *Web usability* [6] he was still strongly recommending to use *electric blue* and underline to mean 'interactive link' in the visual grammar of web graphical interfaces. Although other authors strongly disagree with this position —Sofia Postai [7] and Luisa Carrada [8] just to mention some of the Italian specialists —the assertion of Nielsen and the massive use of this design pattern —Google abandoned it definitively no more than a month ago in its *search engine pages results*— tell us how it is still deeply embedded

in the web user interface design.

3. THE WEB 2.0 CHROMATIC TOPOS

Also the second generation of Internet —that means the so-called web 2.0— renewed and consolidated this design chromatics *topos*. Almost all the sharing services and social network identify both the brand primary colour and the user interface chromatic pattern in a not so wide range of blue tint.

3.1. FACEBOOK AND THE COLOUR ACCESSIBILITY

Although Facebook wasn't the first social network established in the '00s it has fast become the referring experience in the field. With its undoubted leadership in terms of users, power, services and innovation capabilities it is setting most of the standard of the social web, among them also the chromatic palette adopted as a reference for the other first generation of social media design and usability.

The choice of the blue tint came out from a personal visual disability of the founder Mark Zuckerberg: taking an online test he realized that he was red-green colour-blind. Blue is Facebook's dominant colour, because – as he said –

"blue is the richest colour for me – I can see all of blue." [9]

This remains the leitmotiv of all the many evolution and revolution that Facebook improved along the years: it has always been pretty monochromatic since from the beginning (2004) so that the site remains as simple as possible. At the time, a fairly plain site stood in stark contrast to MySpace and other previously popular social networks, as remarked by Amig Agarwal. [10]

It is also interesting to notice that Facebook abandoned the classical duality of digital palette – a brand/default colour and a contrast one to stress and put evidence on links, buttons and action triggers – to play just with blue the most mute and transparent – according to Bonsiepe definition [11] – of the social interfaces.

3.2. LINKEDIN: THE PROFESSIONAL TOUCH

Started in parallel with MySpace, surpassed by Facebook LinkedIn found its own position in the field of the vertical and specialized social network as the referring point of the professional community a sort of online referenced public curricula as preconized by Siegel in the late '90s [12]. According to its positioning, vision and mission and to the other unwritten rules of business field, also LinkedIn has chosen a light blue surrounded by a wide white space and light grey for its brand and GUI design. In this case we

can interpret both from the *mimetic* point of view – to be seen serious and professional also in office and formal work environment – and from the strategic benchmark in the field of social media becoming a *neutral* aggregator of the daily streaming produced in other platforms (Twitter, blogs, etc.) by users.

3.3. VIMEO: PROFESSIONAL VIDEOS

On the other hand Vimeo made the return journey to the light blue corporate tint, consistently and widely used in the interface of the video channels. Its main and heavier competitor is Youtube the video streaming platform that represents the second biggest *site* – after Google – in terms of traffic and views. Vimeo positioned itself as a streaming aggregator where to present in a selected, well organized and user-friendly framework, professional videos. The bold, dynamic, young and energetic cyan link the platform to the other professional ones – i.e. LinkedIn – and differentiates it from the chaotic, not well chromatic identified language of Youtube – which logo is red and black. The blue meaning is clearly reinforcing the brand declaring the professional vocation of the vlog platform.

3.4. TWITTER: MICRO, SMART AND CYAN

Twitter is probably the most aggressive competitor of Facebook, not in terms of users or diffusion – it remains a niche in the field of social networks, but represents the most specialised, innovative and active place where *sophisticated* digital users, influencers and gurus, meet, dialogs and share high valuable contents – both of language and user experience innovation.

In this sense Twitter adapts to the chromatic dominant *topos*, but at the same time is characterized itself by the use of saturated cyan. A colour that maintains the same values of the range of the blue already in the other social networks, but in a more dynamic, aggressive and fresh declination. The speed of communication in 140 characters of the micro-blogging platform is associated with a variation of stronger and sharper colour which makes the interface more vivid, fast and smart.

As is clearly shown in Figure 1 – in which are presented only brands to identify the dominant hue of the entire graphical user interface and its chromatic palette – the dominant colour of the first generation of Web 2.0 is blue in its many various with rare exceptions. On the one hand in combination with *cool* colours i.e. the range of green as adopted by Foursquare and the first version of Stumble Upon's brand, on the other hand juxtaposed to the magenta in Flickr's. The only exception to this is apparently YouTube, belonging to the galaxy of services offered by Google with matching red and black.

WEB 2.0 FIRST GENERATION OF SOCIAL MEDIA

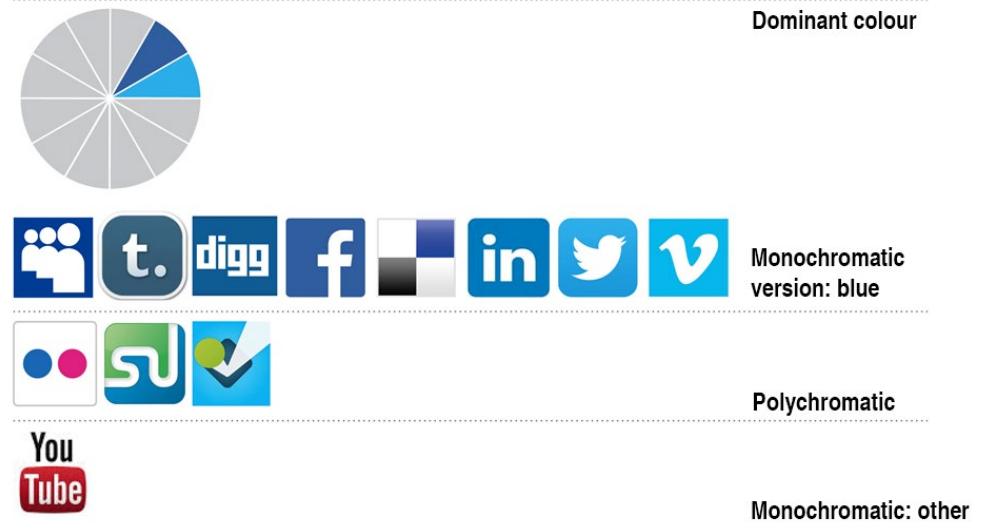


Figure 1 - Web 2.0 first generation of social media: brand and UI colour. From top to bottom: Dominant colour; monochromatic version: blue; polychromatic; monochromatic: other

4. THE SECOND GENERATION OF SOCIAL MEDIA: FORCING THE COLOUR PALETTE

The second generation of social media force explicitly the design patterns also unbalancing the previous blue dominant colour palette towards the warm colours like saturated, bold, hot red. The new ruling seems to express a freer and *aggressive* communication, on the one hand, but on the other it flattens even more on a unique hue. The chromatic revolution often proceeds in parallel with the re-branding of some services and their positioning and systematization in integrated communication ecosystem. It is the case of Google+ that to differentiate itself both the from previous platform launched with little success from Google and from the main competitor Facebook. G+ opposes to the deep, *calm* blue a saturated red (100% yellow and magenta) designing a user interface that – in contrast to the neutral and transparent of Facebook – is vivid, energetic and hard-hitting. A similar operation is carried out also by Stumble Upon that leaves behind the brand bichromatic cold and mute, for a one-color red logo more effective and impacting.

4.1. PINTEREST: RED PASSION

Point of reference of this second generation is Pinterest. It represents an evolution and a mix between Flick'r and social interaction models in which many other platforms dynamics converge and merge together.

So as Facebook is completely played on blue and white to ensure a large neutrality regard to contents, Pinterest also plays on the duality of the corporate colour and a secondary hue component. But the effect is significantly different. If the first is likely to result not only in fact monochrome but also mono-tonus, the second one –relying on the significant contrast

between the red and the neutrality of the layout – plays its identity and user experience on a system where the chromatic contrast creates evidences, hierarchy and focus while ensuring harmony and difference, pleasure and usability. Nevertheless the second generation of web 2.0 abandons the blue paradigm and the hegemony of the design patterns introduced by Facebook it's reduced to an even more stereotypical choice of colour. As Figure 2 highlights the differences among the brand – not to mention the obvious plagiarism between Path and Pinterest iconography – are even more reduced.

4.2. THE CHANGING LANGUAGE OF COLOUR IN INTERACTION

The experiment proposed by Mark Hemeon [13] on the buttons of the main social networks and web platforms reveals a deeper aspects of the chromatic language adopted in the interactive aspects of web 2.0.

If the first generation of Internet adopts a set of colours to indicate the different states of the interaction of a link or a button – i.e. link: blue, active link: red, visited link: purple – in Web 2.0, the semantic of colour becomes more complex. The UI project still involves a triad of colours whose meaning is related to the hierarchy of operable actions. A primary colour is chosen to highlight the major action triggers according to the corporate palette and brand hue, another colour –often in contrast with the main one– is used for the sub-actions, important but not essential. The third one is often a neutral or mute one and cover a wider range of interactions both "*negative*" – for example undo an action – or occasional utilities – such as the settings, or profile customization etc. This tertiary colour is often also used for the effect off or when a link or a button is disabled because you cannot use the function on that page or because it corresponds to the page where you are located.

WEB 2.0 SECOND GENERATION OF SOCIAL MEDIA



Dominant colour



Monochromatic version: red



Polychromatic



Monochromatic: other

Figure 2 - Web 2.0 second generation of social media: brand and UI colour. From top to bottom: Dominant colour; monochromatic version: red; polychromatic; monochromatic: other

FIRST GENERATION



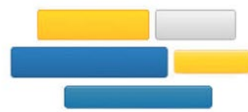
Facebook



Flick'r



Twitter



LinkedIn

SECOND GENERATION



Pinteres



Path

Figure 3 - An extract of "The Button Test" conducted by Mark Hemeon on social media UI

As you can see in Figure 3 the major players of the web 2.0 first generation are using the blue as the main colour – i.e. the primary hue of the corporate palette – a second contrasting colour often used as a secondary color in brand identity – the brand's magenta in Flick'r or a complementary yellow in Twitter – and a light grey as a neutral identification of utilities. On the other hand, the second generation of social media seems to reduce to a couple of hue – highlight vs neutral – simplifying the chromatic grammar of the graphical interface.

5. MOBILE OS: LOSING THE CHROMATIC GRAMMAR

The third revolution in the web is represented by the introduction of mobile devices —this means with the debut of iPhone in 2007 and of iPad in 2010— and the consequent shift between the world of desktop to the new mobile operating systems and applications. In the transition to mobile operating system Apple has become the standard de facto —at least for the Android world because Windows is

taking its own way— to refer to for developing single and commercial applications' interfaces. The iOS7 [4], in particular, is making a wide use of colour both with explicit labels or text explaining the effect of each buttons/action trigger in an interface language that abandoned definitively a mimetic approach to simulate the real world, that means skeuomorphism, 3D and shadows effects and a large use of iconographic symbols. The iOS7 seems to use for every system section colour, so for example the calendar uses red, the cyan email and so on. On one hand, this implies to use a different hue for each one, and secondly, that the semiotics generally attributed to colours such as red or green cannot be consistently applied to this interfaces. Also the typical triad of internet – blue, red and purple – or web 2.0 – seen in the in Hemeon's experiment – is abandoned in favour of a dual combination – for example red and cyan or red and green – but without applying a steady and consistent way. The result is a chromatic language ambiguous and confusing in several screens where the

same message is presented in different colours without constant reference to a clear and shared semiotics or meaning.

So, for example, by comparing the screenshot shown in Figures 4 and 5 we see the same button/message “undo” presented both in red – a warning message that I’m cancelling that means an irreversible action – in the first case and in cyan – a much more less alertive message just referring to the reverse action typical to empty a filled form instead of sending it or the abortion of a task – in the second one.

At the same time, the button that should be off (Figure 4: timer) and then according to the grammar of colours in which the Internet has accustomed us to “off” and neutral stands evidenced by the use red applied to the timer

icon.

Furthermore within the same screen (figure 4: set new alarm) 3 buttons with very different functions – cancel, save and delete – are all three red a very strong and alarming colour reserved to prohibitions, irreversible operations and permanent deletion of information.

Vice versa in Figure 5 are the same colour is an action “active” – saving a draft – either “cancel” – a passive one – the operation that allows to continue editing the text.

Finally in figure 5: new email message you may notice that the button “undo” and “send” are both cyan. The colour design pattern contradicts the basics rules of usability and the mental model that the user already have – embedded in their experience reinforced in many field of

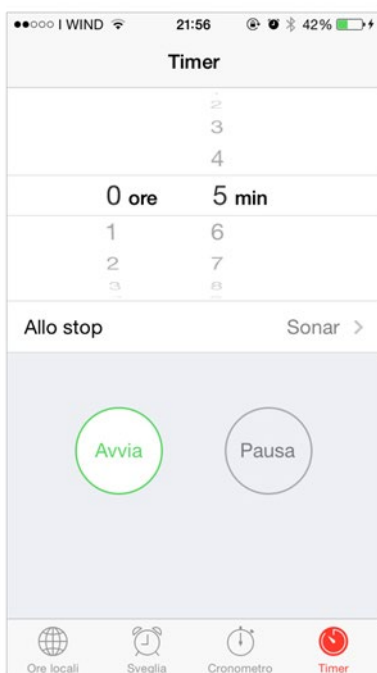


Figure 4 - The use of colours in iOS7: timer and alert setting



Figure 5 - The use of colours in iOS7: mail; create an email; delete an email

experience, not only the web – that to opposite behaviour of an action trigger, generally corresponds also an opposite use of colours or, at least, of visual handling of each elements.

6. CONCLUSIONS

The evolution of the internet brought to encode and evolve a chromatic language that has its roots on the one hand in the classic visual grammar, the other in the specific dynamics of this medium of mass communication. Abandoned the narrow range become a sort of a topos of the chromatic colour palette both corporate and for user interface the experiments of the second generation of web 2.0, however, it seems difficult to diversify and find chromatic identity more original.

The search becomes even more uncertain and somewhat more confusing – a *babel* rather than a new found *iris* – the new frontiers opened by the worlds of the mobile web 3.0. User experience & interface design should probably go back to the deep roots of the language of colour to their culturally established use and to the encoded and conventionally attributed meanings.

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CONFLICT OF INTEREST

No financial or personal interest have affected my objectivity, There are no potential conflicts of interest including financial, personal or other relationships with other people or organizations within three years of beginning the submitted work that could inappropriately influence, or be perceived to influence my work.

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