Scientific article

MAGIC: THE GATHERING COLOUR PIE AS A METAPHOR FOR MAPPING AND EVALUATION OF DESIGN PRACTICES

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In this article, *Magic: The Gathering*, a tactical collectible card game that has been called the most complex game in the world, is employed as a metaphor to aid in the understanding of the complex issues designers now face when dealing with social and environmental topics. The game mechanics are based on the so-called *MTG color pie*, which defines and clearly visually codes five basic ideologies and their associated values, which the game employs to maintain diversity, balance and interest. The ideologies/philosophies outlined in the MTG colour pie are a vivid reflection of real-world ideologies and therefore an excellent metaphor to aid in understanding the complexities of social values and the attendant economic and political tensions. Accordingly, the MTG colour pie is employed in this article as a tool for mapping and critically evaluating a number of modern design and artistic practices.

FIG. 1

MTG colour pie, source: zephyrepic.com, accessible at https://zephyrepic.com/blog/a-beginners-guide-to-magic-the-gathering-part-1-choosing-your-first-color/ (16 March 2024).

Introduction: Why do we need new lenses through which to evaluate design practices?

The rudimentary tool described in this article can be helpful in multiple ways: it can make it easier to understand complex problems, identify design and artistic practices that either offer solutions to these problems or contribute to them, and last but not least, highlight design as a field with a major influence on social and environmental conditions.

The problems we are facing are so complex, so tightly intertwined and interdependent that they have become intractable. As a result, it often happens that designers and other creators wishing to address such problems soon find themselves overwhelmed. Indeed, due to the sheer complexity, someone who wishes to act is easily paralysed or driven into despair. One example of the latter is the phenomenon of eco-anxiety, a psychiatric disorder that ends up afflicting some individuals as a result of grappling with environmental and climate change (Albrecht 2011). For

instance, when design students want to learn about the relevant issues, lacking an overall picture makes it difficult for them to decide what or when to start researching. In such cases, the tool outlined in this text can aid in the understanding of certain overarching values and power relations in society in which the current issues are embedded and thereby make it easier to engage with them on a deeper level.

In today's society, governed by policies that are no longer capable of keeping up with the exponential technological development and are even slower to grapple with the causes and consequences of environmental and climate change, there is an urgent need to find ways to act that go beyond the cumbersome decision-making apparatuses. Design as a field can offer tangible solutions to effectively intervene in emergencies, as well as to limit or prevent them, and beyond that, to create conditions that cultivate different behaviour and thus prevent emergencies from occurring in the first place. It should be stressed here that addressing the issues comprehensively requires employing good design solutions and strategies in all three of the aforementioned phases. Both the actors (designers) and the decision-makers who can support the actors need a thorough understanding of how design can be leveraged in each of these phases. The tool we are about to present can help us by showing, in a simple diagram, where and with what approaches design can respond.

The most complex game in the world as a metaphor for understanding complex global issues

Magic: The Gathering (hereafter MTG) is a strategy collectible card game published by Wizards of the Coast. It is a fantasy game created in 1993 by mathematician Richard Garfield (Jahromi 2018) and is considered to be the first game to combine card collection and trading with the building of personalised playing decks and interactive play (MTG Wiki). It was MTG that gave rise to the booming new genre of collectible card games in the 1990s, which includes the better-known, among some, Yu-Gi-Oh and Pokémon (Jahromi 2018). In MTG, players vie for victory in battles that incorporate magic spells, fantasy creatures and magic artefacts portrayed by playing cards (Hasbro). Players build personalised decks of cards to play with, with over 27,000 different cards currently available to choose from (MTG Wiki). The number of cards available is constantly

increasing, as several hundred new cards are released each year, up to around 2000 in recent years (Karsten 2023). This constant evolution of the game through the introduction of new cards is likely one of the reasons for its popularity, argues Jon Finkel, one of world's best MTG players, explaining that this is what allows long-time players to find joy in constantly discovering new things within the game (Jahromi 2018). To date, the game numbers more than 50 million players worldwide (Hasbro), who form a very cohesive and strong community (Jahromi 2018).

The enormous number of diverse playing cards is also what makes MTG so remarkably complex. In a 2019 study, a group of researchers used the concept of the Turing Machine to demonstrate that MTG is "the most computationally complex real-world game known in the literature" (Churchill et al. 2019, 7). The authors argue that an MTG game is non-computable, having found that in certain situations, the player has infinitely many moves available. The overall complexity of optimal play in MTG thus remains unknown.

The latter especially seems to make MTG an excellent metaphor for the world of today, when the cornucopia of available technologies makes it appear as through there is an infinite number of ways to act, yet the complexity of the problems we are facing is such that deciding how to tackle them has become an enormous challenge. Civilisational development is a double-edged sword; in his theory, Joseph Tainter, author of the book *The Collapse of Complex Societies*, states that a high degree of complexity has been the chief factor precipitating collapse of civilisations. The author points out that in order to orchestrate the increasingly specialised roles, ensure the supply of resources and maintain order, societies resort to establishing highly complex mechanisms and structures that are inherently high-maintenance, which leads to a decrease in the adaptability of civilisations and their increasing vulnerability to internal or external threats, such as natural disasters, epidemics and mass revolts (Ehrenreich 2020).

The complex challenges we have been facing in the last decades were dubbed *wicked problems* by design theorist Horst W. J. Rittel and professor of urban planning Melvin M. Webber in the 1970s. According to the authors' definition, key traits of such problems include that they are virtually impossible to exhaustively define at any given time—they can only be grasped gradually, during the process of their resolution; that they are open-ended, lacking a clear end point or a single "true" solution; that the number of potential solutions is never truly knowable; that every such problem is unique; that they can always be considered as a symptom of another problem; and that their emergence can be causally explained in numerous

different ways (Rittel and Webber 1973, 161–166). Typical wicked problems include climate change, terrorism and poverty.

And though it may seem that resolving such wicked problems requires magic of some sort, the game *Magic: The Gathering* is not invoked in this article as a manual for teaching magic spells; we intend rather to exploit the similarities between MTG's complexity and that of wicked problems to better understand these and seek out ways of addressing them.

In an article published in *The New Yorker* on the occasion of MTG's 25th anniversary, the author Neima Jahromi expresses concern that the proliferation of new playing cards and the game's increasingly complex rules, as well as a number of other elements responsible for the game's complexity, may end up discouraging some from playing. Jon Finkel assures him that, quite to the contrary, this is precisely the charm of the game, as it allows players "the pleasure of only partly understanding and acting anyway, and learning a little bit more about how to do better next time" (Jahromi 2018). This same attitude should be applied when dealing with wicked problems: the recognition that they only allow partial, gradual solutions should not deprive us of hope but give us the impetus to begin addressing them immediately and in as many different ways as possible—only then can we learn as we go how to solve them as effectively as possible in the future.

The five philosophies of the MTG colour pie that reflect the social values of the real world

One of the most foundational and iconic elements of MTG is the *MTG colour pie* (MTG Wiki). The concept is based on five colours—white, blue, black, red and green—each of which represents a particular philosophy, or ideology. In a 2018 interview, the game's creator, Richard Garfield, explained that he developed the concept as an amateur tabletop game designer in the 1980s for a game he called *Five Magics*. A system where different colours represent different elements and land types—in the case of MTG, red represents mountains and fire, black represents swamps and death, blue represents islands and water, white represents plains and the sun, and green represents forests and growth—was nothing unusual for the time, as many fantasy games were based on similar ideas (Jahromi

2018). What differentiates the MTG colour pie from other colour-based game systems are its very elaborate implementation and its far-reaching role in the game. In addition to enabling the great variety of playing cards, the colour pie is also the basis for the story, the game mechanics and game strategies. Mark Rosewater, MTG's chief designer since 2003, is convinced that the colour pie is "the heart of the game", as it generates constraints, defines the so-called flavour of the game, ensures balance and adds personality to the game (Rosewater 2003). Rosewater consequently sees the colour pie as one of the three main elements of the game that are responsible for its remarkable success.

The MTG colour pie diagram takes the form of a circle evenly divided into five segments. The colours in the pie are arranged according to their mutual relationships. The adjacent colours share some values, being able to provide mutual support with respect to certain goals; the most distant colours, meanwhile, are ideologically opposite. In addition to the symbols and colours representing the different philosophies, the more complex renditions of the MTG colour pie also feature their fundamental values and attributes that influence the play style (MTG Wiki). **FIG. 1**

Below, I will outline the characteristics of each colour making up the MTG colour pie with emphasis on their philosophies and values and less so on the specifics of MTG play strategies, as the latter are not essential in the context of this article. All five descriptions are derived from Rosewater's posts on the official MTG website from 2015.

The philosophy of the colour white centres on the common good, which is ensured through the enforcement of a rigid structure of rules and laws. A strong community is more important that individual preferences and the core values are cooperation and charity. The colour white's strength is in effective organisation and well-thought-out strategies; these, however, are only successful when all members of the community are working towards the same goal (Rosewater 2015a).

The colour blue is based on the idea that given the right education and tools, everyone has the potential to become anything. This colour is characterised by constant striving towards self-improvement and seeking of educational opportunities, and is the biggest advocate of technology. It uses the most advanced and best tools to achieve its goals and operates on the basis of well-informed decisions and a methodical approach. As a result, blue is slow and passive, as careful consideration prevents it from reacting quickly (Rosewater 2015b).

The colour black's central motif is power. This colour's ideology prioritises the needs and wants of an individual and therefore always strives

towards individual liberty. This manifests in greed, privatisation, opportunism, corruption and manipulation. Black knows neither compassion nor solidarity, being committed to the belief that only the strong should succeed, while the weaker ones fall. Black imposes no rules or restrictions, only intimidation, torture and murder. Due to its highly risky strategies, black poses the greatest threat to itself (Rosewater 2015c).

The chief characteristics of the colour red are emotion, spontaneity and action. Red revolves around fostering relationships and passions, which makes it reliable and responsive. At the same time, red is chaotic, tireless, brutal and violent; its strategy also includes emotional manipulation. Its rapid reactivity can escalate into impulsiveness and the rejection of long-term planning can become a problem (Rosewater 2015d).

The green philosophy is based on the conviction that the natural order of things is optimal. Green therefore does not want to change the world; instead, it lets nature run its course, supporting it where necessary. Underpinning green is the deterministic view that everyone is embedded in the web of life with a specific role to play. Green's strategy builds on interdependence, the ability to rejuvenate and accelerate natural processes. Its main values are life, growth, community, spirituality, wisdom and tradition. Green's extreme reliance on instinct and natural systems can be a weakness (Rosewater 2015e).

To sum up, in MTG, each colour has its strengths, weaknesses, advantages and limitations. Some players find this excessive and superfluous; Rosewater, however, insists that it is precisely the limitations and the clear and diverse characteristics of the colours that are key to interesting playing strategies. He adds that "each color has built in weaknesses that the opponent can exploit. But that doesn't mean you can't find creative solutions. In fact, finding creative solutions is what Magic is all about" (Rosewater 2003). Seeking creative solutions also happens to be the cardinal virtue of design, a virtue that can help us to deal effectively with the wicked problems in our society.

The MTG colour pie as a tool for mapping and evaluation of design practices

Just as the diverse characteristics of colours add challenge to the game in MTG, so the web of various influences, motives, agendas and ideologies in the real world leads to wicked problems. At the same time, the principle of colour diversity points the way to solutions—looking through the

lens of the colour pie, it becomes obvious that complex and heterogenous problems do not come with unambiguous, universal answers. Such wicked problems need to be approached in a transdisciplinary way and from different angles.

So let us map the MTG colour pie onto real-world issues and design or creative practices. Of course, just like in MTG, colours never occur singly in the real world. There have always been ideologies, political movements and socio-economic models that span all the colours of the MTG colour pie. The proportions are never as balanced as in a good MTG game, however. A similar, or perhaps even somewhat more obvious, imbalance is evident when it comes to design practices. The professionalisation and expansion of the design profession took place in the service of industrial production during the time of industrialisation. Of course, this does not mean that design had not existed prior to the industrial revolution, or that no other fields of design were developing alongside. It does, however, mean that the direction of design that serves commercial production has gained a major advantage, as it has been developing at an accelerated pace in parallel with technological development up to the present day.

Let us start with the colour that best illustrates the economic model of our current society—black. The ideology of black corresponds to a large extent with free-market neoliberalism. This socio-economic system sees growth as its primary objective and accordingly promotes competitiveness on the market and individualism in society. Seeing the pursuit of one's own interests as a virtue creates favourable conditions for consumerist behaviour, as it establishes the vicious cycle of demand and consumption (Salecl 2011, 9–14). Design likewise gets co-opted into the latter's service, collaborating in the production of marketable products and services that promote rapid and excessive consumption (Packard 1960, 62–64). Design practices that fit black's ideology are therefore those that focus on developing commercially successful products and services with no regard for any negative consequences these might have on people and the environment. This type of design employs various mechanisms that simultaneously produce and fulfil frivolous desires. The most prominent such mechanism is planned obsolescence, which is based on the three principles outlined by Vance Packard in his book *The Waste Makers*: obsolescence of function, obsolescence of quality and obsolescence of desirability (Packard 1960, 55). These principles have given rise to single-use products and low-quality products that are quickly destroyed, products subject to rapidly-changing trends and products that are not repairable. Due to the ubiquity of such products in our lives today, we have got so used to them that we tend to take them

for granted and do not consider them problematic. While some designers have been critical of such approaches since the very beginnings of industrialisation and mass production,[1] the situation in design has not radically changed so far.

At this point, it makes most sense to continue our exploration with the colour blue. In Europe, the values associated with this colour began to flourish in the 18th century with the Enlightenment. Much like the blue philosophy, the Enlightenment put emphasis on reason, science and materialism, which, together with the aforementioned industrialisation, paved the way for modern society. The period from the end of the 2nd World War until 2000 was marked by exponential socio-economic development, also known as the Great Acceleration (Steffen et al. 2011), which, on the one hand, brought numerous innovations and technological solutions now considered indispensable; on the other hand, this period was also associated with accelerated depletion of non-renewable resources, as well as environmental degradation in the form of climate change, biodiversity loss, deforestation, ocean acidification and so on (*ibid.*). This, of course, goes hand in hand with the previously described neoliberal ideology, which corresponds to the colour black. It is therefore no coincidence that in the colour pie, these two colours are adjacent. The ideology of blue is markedly ambiguous, since science and technology facilitate vast improvements of our lives at the same time that technology can directly or indirectly endanger them. The blue category therefore includes design and artistic practices that either make use of new technologies, such as artificial intelligence, robotics and digital fabrication, or are focused on the dissemination of knowledge through awareness-raising and educational activities.

If we go the opposite way to blue in terms of ideology and look through the red lens, which prioritises feelings, fostering relationships and spontaneity over reason, we can find, as in the case of blue, both design practices that serve the ends of capitalism and those oriented towards sustainability. In the first instance, design approaches based on a keen knowledge of human psychology and emotion are employed to create irresistibly attractive, addictive products to accelerate sales; in the second instance, product design is used to generate emotional attachment on the part of the user, which ensures long-lasting, sustainable use and genuine satisfaction. Jonathan Chapman has referred to the latter approach as *emotionally durable design* (2005).

[1]

See, for example, authors such as John Ruskin and William Morris.

Let's now examine the perspective of the colour white. Contrary to black, white puts the common good before the needs of the individual. In terms of social organisation, this is the logic that was followed by prehistoric human communities, as well as many political systems in the period since the emergence of first civilisations, in order to facilitate survival. This ideology, like the others, has two faces: in a centralised state, deciding what the common good is can quickly devolve into totalitarianism. On the other hand, common good can be achieved through decentralised, participatory decision-making, although this usually proves to be a very complex task. But this is precisely where design can make a big difference. Practices such as participatory design, co-design, inclusive design and design principles such as *nudge theory*, open source, do-it-yourself and others can help build the values associated with the colour white from the bottom up. Such approaches encourage cooperation, joint decision-making and care, which nurtures a sense of belonging and meaning in individuals.

Where white's ideology works towards the common good and so opposes the individualistic tendencies of black, the ideology of the colour green is reflected in the design and artistic practices struggling against capitalism's destructive tendencies in the fields of ecology and environmentalism. We can place such practices along a spectrum in terms of how embedded they are in the natural environment. Beginning with those less strongly embedded, we have approaches to sustainability that focus on reducing resource and energy consumption and the use of non-harmful materials; at the other end are approaches that are fully embedded in the natural environment, those that Bill Reed describes as regenerative, which mimic nature by actively and holistically improving the vitality of natural systems (Reed 2007).

A superb example of the latter is permaculture, which involves designing systems that build on an understanding of local natural conditions so that they help the local ecosystem to thrive, which ends up benefitting the human community. The largest example of such a project is the Great Green Wall initiative by the United Nations Convention to Combat Desertification, which aims to establish an ecosystem that is hoped to prevent desert expansion and improve living conditions for people and other living organisms in the area. The plan involves planting a belt of biodiverse vegetation expected to span the entire length of the African continent and is currently under development (UNCCD). From the start of the project in 2007 until December 2022, the project—according to estimations made at the African Economic Conference in Mauritius—has achieved 18% of its targets, which means that more than 20 million

hectares of land have been revitalised, 350,000 jobs created, and US$ 90 million earned through project activities (UNDP 2023).

This initiative is one of the proofs that human interests and activities are not inherently in conflict with the natural environment, as is often the impression in present times, with black as the dominant ideology. In the last decade, spurred by the increasingly obvious consequences of mankind's destructive activities, awareness of the natural ecosystems' importance for quality (co)existence has finally begun growing. But because we have ignored this for so long, lived so long at the expense of nature, we have forgotten along the way how to interact with nature, how to work with it. That is why today, in an attempt to restore the broken balance in the world, we should focus our efforts on approaches from the green part of the colour pie.

So as not to start with a single practical example, let me point out that the MTG colour pie was used as the criteria to build a selection of master's theses by students of the Academy of Fine Arts and Design, which are given in the form of articles in the next, fourth chapter of this publication. The projects presented in the master's theses were chosen to fit the ideology of blue, red, white and/or green in striving towards positive change either in society or in the environment. The selection presents works by students from various study courses at the Academy of Fine Arts and Design of the University of Ljubljana, namely Painting, Sculpture, Industrial Design and Visual Communication Design, because, as is evident from the previous overview of practices, design is understood here in the broadest sense of the word. All of the master's projects described here also vehemently transcend the narrow confines of the courses and professions from which they originate. And this is exactly how the authors of these works demonstrate a good grasp of the current situation: tackling wicked problems demands complex, transdisciplinary approaches.

The latter is not a coincidence, since design, as Richard Buchanan points out, is the discipline that is best positioned for addressing wicked problems. The author, moreover, argues that every design problem is a wicked problem in principle, because:

↪ design has no special subject matter of its own apart from what a designer conceives it to be. The subject matter of design is potentially universal in scope, because design thinking may be applied to any area of human experience. But in the process of application, the designer must discover or invent a particular subject out of the problems and issues of specific circumstances. This sharply

> contrasts with the disciplines of science, which are concerned with understanding the principles, laws, rules, or structures that are necessarily embodied in existing subject matters. Such subject matters are undetermined or under-determined, requiring further investigation to make them. But they are not radically indeterminate in a way directly comparable to that of design.

The ability to deal with wicked problems, which is encoded into the design process by default, together with the ability to think creatively, which enables creatives to look for alternatives, illustrates the extraordinary potential of the design and artistic profession to address the crises we are facing. Design and the arts are certainly vital for building a better future.

Conclusion: A new tool as a cry that reverberates in the future

The articles described in the next chapter are therefore practical examples of the practices I have tried to outline and map on the MTG colour pie, and proof that the Academy of Fine Arts and Design of the University of Ljubljana has already begun generating alternatives to conventional, "black" approaches. If anything, it is the academic environment, being independent from market forces, that allows the greatest freedom to find new paths, new approaches that challenge established practices. This is why I firmly believe that we need to encourage students to explore beyond the established economic and political frameworks and, rather than preparing them to maintain the status quo, equip them with as many tools as possible to critically interrogate the world and find solutions to the pressing problems identified. At the same time, I am convinced that radical change can begin through small changes that set an example and a direction, followed by an avalanche of more and bigger changes, like the snowball effect. So let this tool and articles presented in the next chapter serve the coming generations to start the ball rolling.

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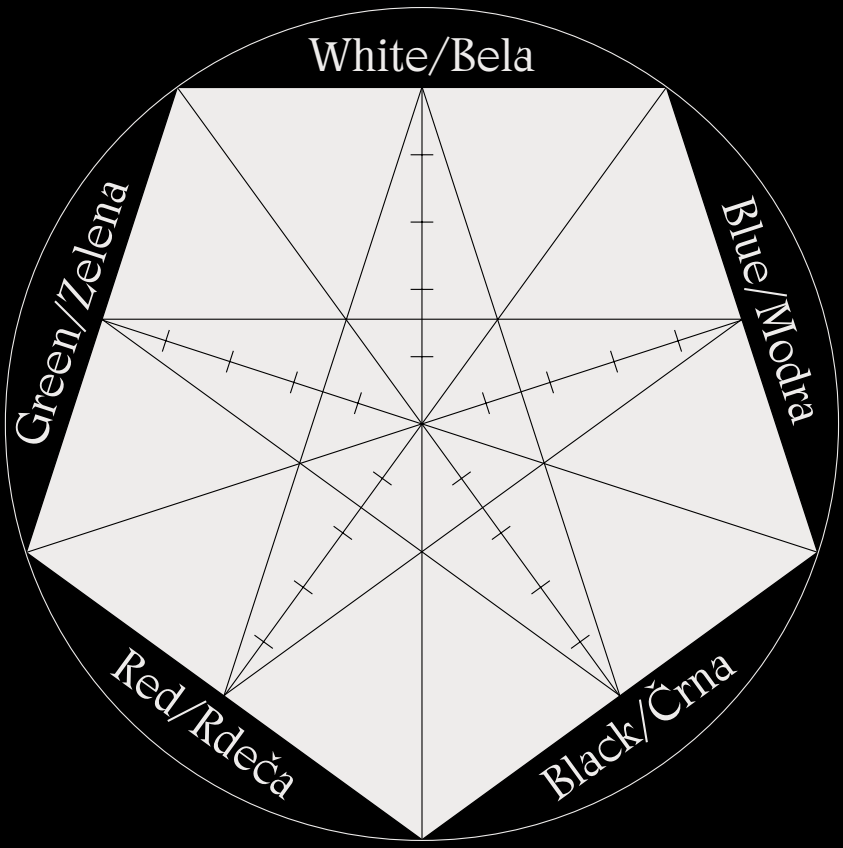
Colour Pie Scheme



Shema barvnega kolesa

Keywords

WHITE

participatory design, co-design,
inclusive design ...

BLUE

novel technologies, awareness
raising, education ...

BLACK

designing to stimulate
consumption, weapons design ...

RED

user-centred design, emotionally
durable design ...

GREEN

sustainable design, biodesign,
regenerative design ...

Ključne besede

BELA

participatorno oblikovanje, sooblikovanje,
vključujoče oblikovanje ...

MODRA

nove tehnologije, ozaveščanje,
izobraževanje ...

ČRNA

oblikovanje za spodbujanje potrošnje,
oblikovanje orožja ...

RDEČA

uporabniško usmerjeno oblikovanje,
čustveno vzdržljivo oblikovanje ...

ZELENA

trajnostno oblikovanje, biodesign,
regenerativno oblikovanje ...