ECHOES OF TOMORROW

ODMEVI JUTRIŠNJEGA DNE

ED. UR.
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co-editors/uredila
Žan Kobal, Barbara Predan

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Kazalo

Foreword

Pasts, Presents, Futures... Are Intertwining

For all the eyes, hands, mouths... there is not enough bread.
We look before, we look now and we look after.
Do we look outwards or inwards?
What do we see and what do we look at?
What do we really see and what do we really look at?
Do we live in our heads or in the world?
Do we see and look with our own eyes or through someone else's eyes?
Our eyes dream.
Modernists said: it is what it is; what you see is what you see.
Today, the opposite is true: what you see (an illusion) is not what you see.[1]

[1]
Excerpt from the artist's manifesto, 2012.

I expressed to Dr. Barbara Predan, my colleague and co-editor of this monograph, that I did not wish to deliver a mere courteous speech riddled with platitudes or simply extend a heartfelt welcome to the creators of this significant project. My brief contribution here serves as an attempt to connect and integrate our past reflections and creative work, not only in my role of educator, but also as creator and artist. It provides an integration of my work and our collective reflections over a sustained period extending to roughly eighteen years. I will attempt to produce a material, physical text—an *"avatar"* (which, in early computer systems, long before the advent of AI, initially referred to and took the form of a text)—and connect it to what lies ahead. In other words: a text as potential and a text as body, which is the embodiment of a subject—in this case me, and on no account just me, since as an educator, and much more so as Dean of the Academy of Fine Arts and Design of the University of Ljubljana—I think and work in the plural, within a community. It is not only "me" anymore, but "us": the academy is plural, it is a community. We teach, create and research together, as a community, as a collective subject.

We are increasingly aware that educating, teaching and researching consist of collaboration, convergence and cohesion—the connecting of different partners.② Our vocation requires collaboration; together we build the present and imagine the future. At the Academy, this is a frequent topic of our reflections and discussions; we write and create, engage in activities, draw, model, design, photograph and paint… about shared presents, because "the historical moment is nothing other than the present understood in its genesis: an 'after' inseparable from the 'before', that is" (Virno 2015). Virno concludes that "the 'now' exists only in relation to the potential past." The present is therefore something between past promises and an unfulfilled future.

The effects of the work that each of us undertakes have consequences at the level of the Academy, and, supposedly, also produce social consequences. We believe (naively, romantically (!?), in a world marked by profound inequalities) that this is indeed true—indeed! The question that is becoming increasingly important is: what to do, or rather: what not to do. Do nothing, pure nothing? … so, to do nothing, to not do anything. But even 'nothing' has to be marked, shown, articulated, formulated.

②

'Companion' might be an even more accurate word—an expression that remains here as a footnote.

For too many words, too many thoughts have already been expressed, and many more images have been sent out into the world. How is it now and what will become of them? The answer to this multitude could be emptiness and silence; yet here they are, in this endless cycle (of information and imagery), as always and repeatedly, and again—again words, comments, statements and images, photographs and endless... selfies (perhaps—I repeat what I have already expressed several times—this narcissistic, selfish and irresponsible form should really be banned!).

We should thoroughly consider our actions (*no selfies, please*) and, perhaps, talk and say as little as possible now but also later, tomorrow; or at least, do it as briefly and quietly as possible. Minus, less, less is more, less is better for us, for nature and for the animals. This—the bells are loudly tolling—should finally be clear to everyone! And of course, minus me, too, therefore I am finishing here, I am switching off the screen... Let us only create what is necessary, not aiming for the *most* necessary, but rather *the least* necessary ('the least' in terms of the amount of pollution of the media space and environment). Although a full stop was previously placed here, let me add: may the windows—and doors—open wide for the quality creations, projects and research presented in the following pages... Let us leaf through, look, read... and reflect, collaborate, create and work together... Collectively, we hold the power to imagine and shape our present (poised between past promises and an unfulfilled future)!

(to be continued)

— Alen Ožbolt, Dean of the Academy of Fine Arts and Design, University of Ljubljana

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Virno, Paolo. 2015. *Déjà Vu and the End of History*. London: Verso.

Predgovor

Preteklosti, sedanjosti, prihodnosti … se prepletajo

Za vse oči, roke, usta … ni kruha.
Gledamo prej, gledamo zdaj in gledamo potem.
Ali gledamo ven ali gledamo not?
Kaj vidimo in kaj gledamo?
Kaj zares vidimo in kaj zares gledamo?
Živimo v svojih glavah ali v svetu?
Ali vidimo, gledamo s svojimi ali s tujimi očmi?
Naše oči sanjajo.
Modernisti so rekli: je, kar je; to, kar vidiš, je to, kar vidiš.
Danes velja ravno obratno: kar vidiš (je slepilo), ni to, kar vidiš.①

①
Odlomek iz umetnikovega manifesta, 2012.

Sourednici te monografije, kolegici dr. Barbari Predan, sem povedal, da ne želim dati le vljudnostnega nagovora, puhlic in prijazno pozdraviti ustvarjalce tega pomembnega projekta. Moj kratki prispevek tukaj naj bi bil poskus povezovanja, integracija naših preteklih razmišljanj in ustvarjanj, ne le kot pedagoga, tudi kot ustvarjalca, umetnika. Združevanja mojega dela in našega razmišljanja v daljšem obdobju približno 18 let. Poskusil naj bi narediti snovno besedilo, telesno, *besedilo kot »avatar«* (ta je v zgodnjih računalniških sistemih, mnogo, mnogo pred AI, pomenil in najprej zavzemal obliko besedila!) in povezati s tem, kar prihaja. Torej besedilo kot potencial in besedilo kot telo, ki predstavlja utelešenost nekega subjekta, to je – v tem primeru mene, vendar pa ne več le mene, nikakor ne, saj kot pedagog – in še veliko bolj kot dekan UL ALUO – razmišljam in delam v množini, v skupnosti, ne več jaz, temveč mi: akademija je množina, je skupnost. In učimo, ustvarjamo, raziskujemo skupaj, skupnostno, kot kolektivni subjekt.

Vse bolj se zavedamo, da so izobraževanje in poučevanje in raziskovanje sodelovanje, zbliževanje in združevanje – povezovanje različnih partnerjev.② Naš poklic je sodelovanje, skupaj gradimo sedanjost in si skupaj zamišljamo prihodnost. O tem na akademiji veliko razmišljamo in govorimo, pišemo in ustvarjamo, delujemo, rišemo, modeliramo, oblikujemo, fotografiramo in slikamo … o skupnih sedanjostih, ker »zgodovinski trenutek dobesedno ni nič drugega kot sedanjost, ki jo razumemo v njeni genezi, namreč nek »potem«, ki je neločljiv od »prej« (Virno, 117). Virno sklene, »da »zdaj« obstaja zgolj in samo v odnosu do potencialne preteklosti«. Sedanjost je zato nekaj med preteklimi obljubami in neizpolnjeno prihodnostjo.

Učinki dela vsakogar od nas imajo na akademiji posledice in naj bi imeli tudi družbene posledice, verjamemo (naivno, romantično (!?) v svetu globokih neenakosti), da je to vendarle res – res! Vedno bolj postaja pomembno vprašanje, kaj narediti, ali pa še bolj, česa ne narediti. Narediti nič, čisti nič? … torej ne narediti, ne narediti ničesar. Vendar tudi nič je treba označiti, pokazati, ubesediti, oblikovati. Namreč, veliko in preveč besed, misli je bilo že izrečenih in še mnogo več podob poslanih v svet. Kako je zdaj in kaj bo potem z njimi? Odgovor na to množino bi lahko bili praznina in tišina; pa vendar so tu, v tem neskončnem (informacijskem in upodobljenem) krogotoku, kot vedno in vsakič znova, in spet, spet

②

Razmišljam, da je družabnik še boljša beseda, izraz, ki pa tu ostaja kot opomba.

besede, komentarji, izjave in podobe, fotografije in neskončno … *selfijev* (morda bi bilo treba – tu ponavljam že večkrat rečeno – to narcisoidno in sebično, neodgovorno obliko – res prepovedati!).

Nemara moramo zdaj in seveda tudi pozneje, jutri čim manj govoriti, izreči; in čim bolj premisliti, kaj delamo (*nobenih selfijev, prosim!*), če že, pa čim bolj kratko in čim tišje. Minus, manj, manj je več, manj je bolje za nas in za naravo in za živali. To bi moralo biti – *glasno bijejo zvonovi* – končno vsakomur jasno! Minus jaz, tudi, seveda, in saj tu končujem, ugašam ekran … Ustvarjajmo le tisto, kar je nujno, ne *najbolj* nujno, temveč tisto, kar je nujno *najmanj* (najmanj v smislu količine onesnaženja medijskega in okoljskega prostora). Tu je stala pika, pa vendar dodajam: naj se vendar odpre in razpre okno – in vrata – za dobra dela, projekte in raziskave, ki se predstavljajo na naslednjih straneh … listajmo, glejmo, berimo … in premislimo ter sodelujmo, ustvarjajmo, delajmo jih skupaj… skupaj si zamišljajmo našo (med preteklimi obljubami in neizpolnjeno prihodnostjo) sedanjost!

(se nadaljuje)

— Alen Ožbolt, dekan UL ALUO

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Virno, Paolo. 2023. *Déjà vu in konec zgodovine*. Ljubljana: Društvo za teoretsko psihoanalizo.

Introduction

Echoes of Encounters

Barbara Predan

I'm writing this introduction under the impression of a particular event: on International Women's Day, in the middle of Copenhagen, eight of us—all women—from eight European countries and working in different design-related fields, discussed the importance of curiosity, what it is we care about and what we should care about more, while at the same time looking forward. The title of the event was *Curious Encounters*, that is, the type of encounters that French philosopher Alan Badiou has identified as "contingent, chance element[s] of existence." When we experience such an encounter, Badiou continues, "something happens to you that nothing among your existing world's points of reference made likely or necessary. You encounter someone who you do not know and yet who strikes you, attracts you, enters into your life." It is, however, important to bear in mind, as Badiou points out, that there is no encounter without risk. Yet "if you try to reduce this insecurity then you destroy the encounter itself," you destroy the chance of a beginning, the chance of the potentiality, the chance to "give rise to shared consequences, shared innovations" (Petitjean 2014). The power is therefore in the potential of an encounter that can result—as the event itself has aptly demonstrated—not only in the sharing of knowledge but also in the creation of opportunities for the generation of new knowledge and experience.

If I were to sum up the essence of what was said at the event using an anecdote, I would certainly pick the one shared during the discussion by Simona Maschi, the co-founder of the Copenhagen Institute of Interaction Design. Responding to a question on how caring about something manifests in a focus on the future, she pointed to the construction of Florence Cathedral. At the end of the 13th century, when it was realised that the existing cathedral was no longer sufficient for the growing population of the city, the decision was made to build a new, bigger one. This in itself is not unusual; what is remarkable is that when they selected and approved the design of the new cathedral, they would have already been conscious of the fact that they lacked the knowledge to build such an edifice and that it would not be finished within their lifetimes. The most significant part of the story, Maschi stressed, is that the fact, known in advance, that no one involved would witness the results of their decision (the construction would take just over 140 years) posed no obstacle to the approval of the project. On the contrary, the decision was taken in the hope that future generations would benefit.

In other words, the power of such a decision resides in the fact that the foundation of your care is in working to secure benefits in the future despite knowing in advance that you will not live to see these results,

much less their downstream impacts. You are therefore building for the generations to come, able to transcend your own particular interests and find satisfaction in knowing that the fruits of your labours will be enjoyed by generations that, for the most part, will not even remember your name. In practice, this means transcending that *eternal desire* to have your name echo in immortality. As history teaches again and again, much of the heroic chest-thumping quickly fades away; what remains, ever present, are the reverberations of our actions. Moreover, effects that are often dismissed (especially when negative) at a time when bold ideas dominate end up being significant in the future. Here it is important to point out that it is not only the great endeavours, such as the construction of the cathedral in Florence, that reverberate in the future, but also our seemingly insignificant, spontaneous actions, as well as our passivity in the form of inaction. As we stand on the shoulders of the past, it is still up to all of us, time and time again, to make choices about which reverberations we wish to amplify like a tsunami and which ones to ignore, or even to help dissipate.

Thanks to our ability to make deliberate decisions, we are never—despite the daily deluge of dire projections in the context of climate change—facing just a single future. If we feel like we are, we are most likely caught in a loop of projections—as Hannah Arendt puts it, "present automatic processes and procedures, that is, of occurrences that are likely to come to pass if men do not act and if nothing unexpected happens; every action, for better or worse, and every accident necessarily destroys the whole pattern in whose frame the prediction moves and where it finds its evidence" (2013, 10–11). The feeling of powerlessness due to being trapped in a loop of projections is actually due to a sense of loss of *agency*. The underlying cause of this frequently lies in the way we act, as despite Audre Lorde's caution that "the master's tools will never dismantle the master's house" (2007), we all too often persist in this act of powerlessness.

Adding to that, Linda Tuhiwai Smith suggests that one of our tasks eventually is to question what is uncritically perceived as the (only) true knowledge, way of doing things and, ultimately, way of telling stories (2021). Everything reverberates, even the booming silence of indifference and wilful ignorance (Criado-Perez 2019). What also reverberates is the simple fact that for all our awareness of the situation we find ourselves in as a result of escalating climate (and other) change, we simply don't particularly care about it. As the authors of the *Lancaster Care Charter* point out:

> ↪ It is unlikely anyone would dispute the general intention of care as something that expresses our relationship to each other and the world. However, the same general agreement would have to be applied to the overwhelming evidence that we don't seem to care for much at all, or that the caring intentions and efforts of individuals are not reflected in collective outcomes—undermined, perhaps, by a more dominant, systemic lack of care. (Rodgers et al. 2019, 77)

The role that design ends up playing in this does not just represent an insignificant gesture. Design and art, in their position of translating messages (McLuhan 2001) can actively contribute both to exposing and dismantling of the systemic domination that deliberately promotes a lack of care. They can also open spaces and help co-design tools that will constitute an alternative to the existing tools, or, as Lorde would call them, the master's tools. After all, as the authors of the aforementioned document conclude, design can take on the role of "analyzing and synthesizing future visions" and is thus "best placed to serve as a means for developing ways of caring better for our world, our cities, our livelihoods, our relationships, and for each other" (Rodgers et al. 2019, 77). But in order to achieve this, as designer Sophie Falkeis exclaimed at the event mentioned at the beginning of the introduction, we must finally wake up and act. This interlude, albeit vital, does not apply to everyone, however. Many perpetually ignored individuals have been awake for a while, trying to attract our attention, wake us up from our slumber. Their methods range from the production of scientific knowledge to cutting-edge artistic and design achievements in a variety of media (from films, through immersive virtual reality exhibitions, such as those by Sophie Falkeis, to transformations of our environment through regenerative principles, and last but not least, data visualisation and designing nudges). We are also seeing more and more examples of the pent-up frustration that Jennifer Lawrence expressed so well, on behalf of all of us, in *Don't Look Up*.

This monograph, edited by Tamara Lašič Jurković, is an example of drawing on the former, presenting conceptual yet tangible alternatives to the status quo. In response to the open call "We Will Design – BASE Milano" by Milan's hybrid cultural centre BASE during the Design Week, which encourages designers to reflect on the possibility of creating a universal and reciprocal friendliness—or conviviality—, Lašič Jurković has carefully assembled a selection of master's projects—mostly by women artists who think, research, care and critically respond to the problems

of the community. She shows us that desirable future of which Ivan Illich writes in his book *Deschooling Society*:

> ↪ I believe that desirable future depends on our deliberately choosing a life of action over a life of consumption, on our engendering a lifestyle which will enable us to be spontaneous, independent, yet related to each other, rather than maintaining a lifestyle which only allows to make and unmake, produce and consume – a style of life which is merely a way station on the road to the depletion and pollution of the environment. The future depends more upon our choice of institutions which support a life of action than on our developing new ideologies and technologies. (Illich 2023, 52–53)

If nothing else, the Academy of Fine Arts and Design of the University of Ljubljana, with this selection of master's theses, clearly shows that it is a space that supports and encourages critical thought. This work, moreover, is in a sense a continuation of the exhibition that we curated at the Academy for the Milan Triennial in 2019, the difference being that with this monograph, we are expanding the field to include art. In this sense we are celebrating two anniversaries together: this year's 40th anniversary of higher education in the field of design at the University of Ljubljana, while at the same time turning our gaze towards the 80th anniversary of the Academy, which we will be celebrating next year, in 2025. On behalf of the generations yet to come, it is my wish that the Academy persists in its resistance to the brutal drive for growth that we are too often forced into by the social circumstances, and to stay on the path of degrowth and the evolution of pedagogical and research encounters.

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Uvodnik

Odmevi srečanj

Barbara Predan

Ta uvodnik nastaja pod vtisom dogodka, na katerem nas je na mednarodni dan žensk 8 žensk iz 8 evropskih držav in z različnih področij oblikovanja sredi Kopenhagna razpravljalo o pomenu radovednosti, kaj nam je mar in čemu bi bilo treba nameniti več skrbi – ob hkratnem usmerjanju pogleda naprej. Dogodek je nosil naslov *Curious Encounters*, torej tistih srečanj, ki jih francoski filozof Alain Badiou opredeli kot »slučajnost, naključni element obstoja«. Ob takšnem srečanju se nam po Badiouju zgodi »nekaj, kar zaradi referenčnih točk našega obstoječega sveta ni bilo verjetno ali potrebno. Srečamo nekoga, ki ga ne poznamo, a nas vseeno preseneti, pritegne, vstopi v naše življenje.« Pri tem pa se je, kot izpostavi Badiou, treba zavedati, da ni srečanja brez tveganj. A »če poskušamo omiliti to negotovost, potem uničimo srečanje samo«, uničimo možnost začetka, možnost potencialnosti, možnost »skupnih posledic, deljenih inovacij« (Petitjean 2014). Moč je torej v potencialu srečanja, katerega rezultat je lahko – kot je tudi v praksi manifestiral sam dogodek – ne le deljenje znanj, temveč tudi ustvarjanje možnosti za generiranje novih znanj in izkušenj.

Če poskušam z anekdoto povzeti bistvo povedanega na dogodku, bi zagotovo izpostavila tisto, ki jo je v razpravi razkrila Simona Maschi, soustanoviteljica inštituta Copenhagen Institute of Interaction Design. Na vprašanje o tem, kako se skrb manifestira v usmerjanju pogleda v prihodnost, je izpostavila primer gradnje stolnice v Firencah. Ko so konec 13. stoletja v mestu ugotovili, da obstoječa stolnica ne zadostuje za naraščajočo populacijo mesta, so se odločili zgraditi novo in večjo. Kar seveda ni nič posebnega, posebno je to, da so se v času izbora in potrditve načrta nove stolnice hkrati že zavedali, da pravzaprav še nimajo vsega znanja, da bi takšno stavbo sploh lahko zgradili, in bo čas gradnje presegel njihovo življenjsko dobo. Pri tem je po Maschi najpomenljivejši del v vsej zgodbi ravno to, da kljub temu, da so vnaprej vedeli, da rezultatov svojih odločitev dejansko ne bodo videli (gradnja je trajala dobrih 140 let), to ni bila ovira pri potrjevanju projekta. Prav nasprotno, odločitev so sprejemali v želji, da bodo prihodnji rodovi imeli korist.

Povedano drugače, moč takšne odločitve kulminira v tem, da skrb tvoriš na temelju, da s svojim delovanjem gradiš za prihodnost, tudi če že vnaprej veš, da v času svojega življenja ne boš doživel rezultata, kaj šele njegovih učinkov. Gradiš torej za generacije, ki prihajajo, pri čemer si sposoben preseči lastne portikularne interese in najdeš zadovoljstvo v tem, da bodo sadove uživale generacije, ki se tvojega imena večinoma sploh ne bodo spominjale. V praksi to pomeni, da presežeš tisto *večno željo*, da bi tvoje ime odmevalo v nesmrtnosti. Saj kot nas vsakič znova uči zgodovina, večji del herojskega in poimenskega trkanja po prsih hitro

izzveni, a kljub temu so odmevi naših dejanj ves čas prisotni. Še več, prisotni so učinki, ki so pogosto (sploh, če gre za negativne) v času smelih idej zanemarjeni, v prihodnosti pa, prav nasprotno, nezanemarljivi. Pri tem je pomembno izpostaviti, da odmevi niso rezultat zgolj velikih dejanj, kot je svojčas bila gradnja firenške stolnice, temveč v prihodnosti odmevajo tudi vsa naša navidezno nepomembna, spontana dejanja, kot tudi vsa naša pasivnost v obliki nedejanj. S tem, ko stojimo na ramenih preteklosti, je še vedno vsakič znova odvisno od vseh nas, da sprejemamo odločitve o tem, kateri odmev bomo kot cunami potencirali in katerega preslišali, ali mu še dodatno pomagali izzveneti.

Zaradi možnosti načrtnega sprejemanja odločitev nismo nikoli – kljub izjemno perečim napovedim, s katerimi se dnevno srečujemo v kontekstu podnebnih sprememb – soočeni z zgolj eno prihodnostjo. Če imamo vtis, da smo, smo najverjetneje ujeti v zanko projekcij – kot to opredeli Hannah Arendt – »sedanjih avtomatskih procesov in postopkov, se pravi tega, kar se bo najverjetneje pripetilo, če ljudje ne bodo delovali in če se ne bo zgodilo nič nepričakovanega: vsako dejanje in vsako naključje tako rekoč nujno uniči celoten vzorec, znotraj katerega se giblje napoved in znotraj katerega je dokazljiva« (2013, 10–11). Občutek nemoči zaradi ujetosti v zanko projekcij je pravzaprav posledica občutka izgube *delovalnosti* (*agency*). Razlog za to pa se pogosto skriva v načinu našega delovanja, saj kljub napotku Audre Lorde, da z gospodarjevimi orodji ne moremo razmontirati gospodarjeve hiše (2007), v tem dejanju nemoči prepogosto vztrajamo.

Linda Tuhiwai Smith ob tem še izpostavi, da je ena od naših nalog končno podvomiti o tem, kar se nekritično percipira kot (edino) pravo znanje, način delovanja in ne nazadnje način pripovedovanja zgodb (2021). Vse namreč odmeva, tudi zevajoča tišina spregledanosti in načrtne ignorance (Criado-Perez 2019). Odmeva pa tudi *preprosto* dejstvo, da kljub vsemu našemu zavedanju situacije, v kateri smo zaradi naraščajočih podnebnih (in drugih) sprememb, nam zanje v večji meri preprosto ni mar. Avtorji dokumenta *The Lancaster Care Charter* izpostavijo:

> »Le malo verjetnosti je, da bi kdo nasprotoval splošnemu pomenu skrbi kot nečesa, kar izraža odnos med nami in odnos do sveta. Vendar pa bi bilo treba enako splošno soglasje uporabiti pri vse bolj prisotnih dokazih, da nam sploh ni kaj dosti mar ali da se skrb in prizadevanja posameznikov nikakor ne odražajo v kolektivnih rezultatih – ki jih najbrž spodkopava dominantno, sistemsko pomanjkanje skrbi.« (Rodgers et al. 2019, 77)

Kakšno vlogo bo pri opisanem zavzelo oblikovanje, ni zanemarljiva gesta. Oblikovanje in umetnost namreč v svoji poziciji prevajanja sporočil (McLuhan 2001) lahko aktivno pripomoreta tako k razkrivanju in razgradnji sistemske dominance, ki načrtno spodbuja k pomanjkanju skrbi, kot lahko odpirata prostore in pomagata sooblikovati orodja, ki bodo tvorila alternativo obstoječim ali, kot bi jih poimenovala Lorde, gospodarjevim orodjem. Saj, kot še zaključijo avtorji prej omenjenega dokumenta, oblikovanje lahko prevzame vlogo »analiziranja ter sintetiziranja prihodnjih vizij« in s tem »je najprimernejše sredstvo razvijanja načinov, kako bolje skrbeti za naš svet, za naša mesta, za naše preživetje in drug za drugega« (Rodgers et al. 2019, 77). Zato, da bomo to dosegli, pa se moramo, kot je na dogodku, omenjenem na začetku, vzkliknila oblikovalka Sophie Falkeis, končno zbuditi in ukrepati. A ta nujno potreben medklic ne velja za vse. Številni preslišani posamezniki so že dalj časa zbujeni in na vse načine poskušajo ujeti našo pozornost, nas prebuditi iz sna. Metode pri tem so različne, od gradnje znanstvenih dognanj do vrhunskih umetniških in oblikovalskih rezultatov v raznovrstnih medijih (od filmov, razstav s poglobljeno navidezno resničnostjo, kakršne ustvarja Sophie Falkeis, pa vse do preoblikovanj našega okolja, temelječ na regenerativnosti, in ne nazadnje do vizualizacije podatkov ter oblikovanja dregljajev). Vse več pa je tudi nakopičene frustracije, ki jo je v filmu *Don't Look Up* tako dobro v imenu vseh nas izrazila Jennifer Lawrence.

Pričujoča monografija, ki jo je uredila Tamara Lašič Jurković, je rezultat prvega, saj pred nas postavlja konceptualne, a hkrati oprijemljive alternative obstoječemu. Sledeč pozivu z naslovom »We Will Design – BASE Milano« milanskega hibridnega kulturnega centra Base v času tedna oblikovanja, ki oblikovalce spodbuja k premisleku o možnosti vzpostavljanja vsesplošne in vzajemne prijaznosti, družabnosti (*conviviality*), je Lašič Jurković skrbno izbrala rezultate magistrskih del – v večji meri ženskih avtoric, ki mislijo, raziskujejo, skrbijo in se kritično odzivajo na probleme skupnosti. Pred nas je postavila tisto zaželeno prihodnost, o kateri piše Ivan Illich v knjigi *Razšolanje družbe*, ko izpostavi, da je

> ↪ »zaželena prihodnost odvisna od naše pripravljenosti, da zavestno izberemo življenje, ki temelji na delovanju namesto na potrošnji. S tem bi privzeli način življenja, ki nam dovoljuje biti spontani in neodvisni, vendar mesebojno povezani. Ne smemo se oklepati načina življenja, ki nam omogoča le ustvarjanje in uničevanje, proizvodnjo in potoršnjo, saj to predstavlja samo vmesno postajo na poti k izčrpavanju in onesnaževanju okolja. Prihodnost je bolj

kot od našega razvijanja novih ideologij ali tehnologij odvisna od naše izbire institutcij, ki spodbujajo dejavno življenje.« (Illich 2023, 104–105)

Če kaj, Akademija za likovno umetnost in oblikovanje Univerze v Ljubljani (UL ALUO) z izbranimi magistrskimi nalogami jasno kaže, da prostor kritične misli podpira in spodbuja. Še več, s tem delom se vzpostavlja svojevrstno nadaljevanje razstave, ki smo jo na UL ALUO leta 2019 kurirali za milanski trienale, s to razliko, da s pričujočo monografijo širimo polje tudi na umetnost ter tako skupaj praznujemo dve obletnici: letošnjo 40-letnico visokošolskega izobraževanja oblikovanja na Univerzi v Ljubljani, hkrati pa že usmerjamo pogled k 80-letnici Akademije, ki jo bomo praznovali naslednje leto, leta 2025. V imenu generacij, ki šele prihajajo k nam, želim Akademiji, da se še naprej zoperstavlja surovi gonji po rasti, v katero nas prepogosto sili okolica, in da ostane na poti odrasti ter evolucije pedagoških in raziskovalnih srečanj.

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Scientific article

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

Tamara Lašič Jurković

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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Znanstveni prispevek

BARVNO KOLO IGRE *MAGIC: THE GATHERING* KOT PRISPODOBA ZA MAPIRANJE IN KRITIČNO VREDNOTENJE OBLIKOVALSKIH PRAKS

Tamara Lašič Jurković

Magic: The Gathering, taktična družabna igra s kartami, ki velja za najkompleksnejšo igro na svetu, je v tem članku prispodoba za boljše razumevanje kompleksnih problemov, s katerimi se oblikovalci danes srečujemo pri obravnavi družbeno-okoljskih tematik. Mehanika igre temelji na t. i. barvnem kolesu MTG (*MTG color wheel* ali *color pie*), ki prek jasnega vizualnega kodiranja določa pet osnovnih ideologij s pripadajočimi vrednotami, ki omogočajo, da je igra raznovrstna, uravnotežena in vsebinsko zanimiva. Barvno kolo MTG z orisanimi ideologijami/filozofijami slikovito zrcali ideologije resničnega sveta, zato je odlična prispodoba za lažje razumevanje kompleksnosti družbenih vrednot in gospodarskopolitičnih tenzij, ki iz njih izhajajo. Kot tako je barvno kolo MTG v pričujočem prispevku uporabljeno za mapiranje in kritično vrednotenje nabora sodobnih oblikovalskih in umetniških praks.

FIG. 1

Barvno kolo MTG, vir: zephyrepic.com, dostopno na https://zephyrepic.com/blog/a-beginners-guide-to-magic-the-gathering-part-1-choosing-your-first-color/ (16. 3. 2024).

Uvod: zakaj potrebujemo nove prizme za vrednotenje oblikovalskih praks?

Zametek orodja, ki je predstavljen v tem prispevku, je lahko koristen z več vidikov: za lažje razumevanje kompleksnih problemov, prepoznavanje oblikovalskih in umetniških praks, ki k tem problemom bodisi prispevajo bodisi zanje iščejo rešitve, in ne nazadnje za izpostavljanje oblikovanja kot področja, ki ima velik vpliv na družbeno-okoljske razmere.

Problemi, s katerimi se srečujemo v današnjem svetu, so tako kompleksni, tako medsebojno prepleteni in soodvisni, da so postali neobvladljivi. Oblikovalci in drugi ustvarjalci, ki želijo takšne probleme naslavljati, se pri njihovem raziskovanju zato lahko hitro znajdejo v zagati. Še več, takšna kompleksnost lahko nekoga, ki želi ukrepati, popolnoma ohromi ali celo potisne v obup. Primer zadnjega je denimo pojav ekoanksioznosti, duševne motnje, ki se pri posameznikih kaže kot posledica spoprijemanja z okoljskimi in podnebnimi spremembami (Albrecht 2011). Kadar se denimo študenti oblikovanja želijo poučiti o problemih, se brez okvirne celostne slike težko odločijo, kaj oziroma kje začeti raziskovati.

Orodje, orisano v tem besedilu, lahko v takšnih primerih pomaga razumeti nekatere splošne vrednote in odnose moči v družbi, v katere so vpete aktualne problematike, in s tem olajša začetek poglabljanja vanje.

V današnji družbi, ki jo vodijo politike, ki ne morejo več slediti tempu eksponentnega tehnološkega razvoja, še počasneje pa se spoprijemajo z vzroki in posledicami okoljskih in podnebnih sprememb, je nujno treba iskati načine za ukrepanje tudi onkraj okornih odločevalskih aparatov. Oblikovanje je področje, ki lahko ponudi oprijemljive rešitve tako za učinkovito ukrepanje v nastalih urgentnih situacijah kot tudi za njihovo omejevanje oziroma preprečevanje in še dlje, za ustvarjanje pogojev, ki gojijo drugačno vedenje in s tem preprečujejo, da bi tovrstne urgentne situacije sploh nastale. Pri tem je treba poudariti, da za celovito obravnavo problematik potrebujemo dobre oblikovalske rešitve in strategije v vseh treh opisanih fazah. Tako akterji (oblikovalci) kot tudi odločevalci, ki lahko akterje v tem podprejo, pa morajo dobro razumeti, kako lahko oblikovanje ukrepa v vsaki od orisanih faz. Pri slednjem lahko orodje, ki bo predstavljeno v nadaljevanju, postane priročno, saj s pomočjo enostavnega diagrama pokaže, na katerih področjih in s kakšnimi pristopi se lahko odziva oblikovanje.

Najkompleksnejša igra na svetu kot prispodoba za razumevanje kompleksnih problemov v svetu

Magic: The Gathering (v nadaljevanju MTG) je strateška družabna igra s kartami založnika Wizards of the Coast. Gre za domišljijsko igro, ki jo je leta 1993 ustvaril matematik Richard Garfield (Jahromi 2018), in velja za prvo igro, ki je združila zbiranje in menjavo kart z ustvarjanjem personaliziranih igralnih kompletov ter interaktivno igro (MTG Wiki). Prav MTG je v devetdesetih letih povzročila razmah novega žanra zbirateljskih iger s kartami, v katerega se uvrščata tudi nekaterim bolj znani Yu-Gi-Oh in Pokémon (Jahromi 2018). V igri MTG se igralci za zmago potegujejo v bitki, ki vključuje čarobne uroke, namišljena bitja in magične artefakte, ki so upodobljeni na igralnih kartah (Hasbro). Igralci si za potrebe igranja sestavljajo personalizirane komplete kart (*card decks*), pri čemer lahko trenutno izbirajo med več kot 27.000 različnimi kartami (MTG Wiki). Število razpoložljivih kart se nenehno povečuje, saj vsako leto izide več sto novih kart, v zadnjih letih tudi

po približno 2000 (Karsten 2023). Prav dejstvo, da se igra z novimi kartami nadgrajuje in spreminja, je verjetno eden od razlogov za njeno priljubljenost. Saj, kot pravi Jon Finkel, eden izmed najboljših igralcev MTG na svetu, naj bi to dolgoletnim igralcem omogočalo užitek pri neprestanem odkrivanju novega znotraj igre (Jahromi 2018). Igra do danes šteje že več kot 50 milijonov igralcev po vsem svetu (Hasbro), ki tvorijo zelo povezano, močno skupnost (Jahromi 2018).

Zaradi ogromnega števila raznovrstnih igralnih kart pa je igra MTG tudi izredno kompleksna. V študiji iz leta 2019 je skupina raziskovalcev s pomočjo Turingovega stroja dokazala, da je igra MTG »računsko najkompleksnejša igra iz resničnega sveta, kar jih je poznanih v literaturi« (Churchill et al. 2019, 7). Avtorji študije trdijo, da je potek igre MTG neizračunljiv, ugotovili so namreč, da ima lahko igralec MTG v nekaterih situacijah na voljo neskončno število potez, zato celotna kompleksnost optimalnega poteka igre MTG ostaja uganka.

In prav zaradi slednjega se zdi igra MTG odlična prispodoba današnjega časa, ko je videti, da imamo zaradi vseh razpoložljivih tehnologij nešteto možnosti za ukrepanje, a se hkrati srečujemo s tako kompleksnimi problemi, da je odločanje o tem, kako se z njimi spoprijeti, postalo izredno zahtevno. Pri civilizacijskem razvoju gre namreč za dvorezni meč. Joseph Tainter, avtor knjige *The Collapse of Complex Societies*, v svoji teoriji trdi, da je visoka stopnja kompleksnosti civilizacij glavni razlog za njihov propad. Avtor izpostavlja, da se v družbah za usmerjanje vedno bolj specializiranih vlog, preskrbo z viri in vzdrževanje reda vzpostavljajo izredno kompleksni mehanizmi in strukture, ki so hkrati sami po sebi zahtevni za vzdrževanje, kar povzroča, da so civilizacije vedno manj prilagodljive in vedno bolj ranljive za notranje ali zunanje grožnje, kot so naravne katastrofe, epidemije ali obsežni ljudski upori (Ehrenreich 2020).

Kompleksne izzive, s katerimi se srečujemo v zadnjih desetletjih, sta v sedemdesetih letih prejšnjega stoletja teoretik na področju oblikovanja Horst W. J. Rittel in profesor urbanizma Melvin M. Webber poimenovala zagonetni problemi [*wicked problems*]. Kot sta definirala avtorja, za takšne probleme med drugim velja, da jih je praktično nemogoče opredeliti v celoti in naenkrat, temveč jih je mogoče spoznavati le postopoma, med procesom njihovega reševanja; da nimajo jasnega konca ali ene same prave rešitve; da število potencialnih rešitev zanje pravzaprav nikoli ni znano; da je vsak tak problem unikaten; da se vselej lahko obravnavajo kot simptom nekega drugega problema in da je mogoče vzroke za njihov nastanek opisati na številne različne načine (Rittel in Webber 1973, 161–166). Tipični zagonetni problemi so na primer podnebne spremembe, terorizem in revščina.

In čeprav se zdi, da bi za tovrstne zagonetne probleme potrebovali nekakšno čarovnijo, da bi jih sploh lahko razrešili, v tem članku igra *Magic: The Gathering* ni predstavljena z namenom učenja magičnih urokov, temveč bomo dejstvo, da MTG po kompleksnosti spominja na zagonetne probleme, izkoristili za boljše razumevanje teh in iskanje možnosti za spopadanje z njimi.

V članku, ki je izšel ob 25. obletnici MTG v tedniku *The New Yorker*, avtor Neima Jahromi izrazi pomislek, da bi lahko pospešeno širjenje MTG z novimi igralnimi kartami, vedno bolj zapletena pravila igre in številni drugi elementi, zaradi katerih je igra tako kompleksna, nekatere igralce odvrnili od igranja. A Jon Finkel mu zagotovi, da je prav nasprotno in je ravno to čar igre, saj igralcem omogoča »užitek le delnega razumevanja in ravnanja v vsakem primeru ter hkratnega postopnega učenja o tem, kako biti naslednjič boljši« (Jahromi 2018). Podobno bi moralo veljati pri obravnavanju zagonetnih problemov: zavedanje, da so rešljivi le deloma, postopoma, nam ne sme vzeti upanja za ukrepanje, temveč nam mora dati zagon, da jih začnemo naslavljati takoj in čim bolj različno, saj se bomo le tako lahko sproti učili, kako jih čim bolj učinkovito reševati v prihodnje.

Pet filozofij barvnega kolesa MTG, ki zrcalijo družbene vrednote resničnega sveta

Barvno kolo MTG je eden od najbolj temeljnih in ikoničnih elementov igre MTG (MTG Wiki). Gre za koncept petih barv – bele, modre, črne, rdeče in zelene – od katerih vsaka predstavlja določene filozofije oziroma ideologije. Kot pove avtor igre Richard Garfield v intervjuju leta 2018, je zametek koncepta razvil že v osemdesetih letih, ko je amatersko snoval različne družabne igre, med drugimi igro, ki jo je poimenoval *Five Magics*. Sistem različnih barv, ki ponazarjajo različne elemente in tipe pokrajin – v primeru MTG rdeča predstavlja gore in ogenj, črna močvirja in smrt, modra otoke in vodo, bela planote in sonce ter zelena rast in gozdove – za tisti čas ni bil nič posebnega, saj je veliko fantazijskih iger temeljilo na podobnih idejah (Jahromi 2018). Kar barvno kolo MTG loči od drugih igralnih barvnih sistemov, sta zelo podrobna razdelava koncepta in daljnosežnost njegove vloge v igri. Poleg tega, da barve omogočajo raznovrstnost igralnih kart, na barvnem kolesu temeljijo tudi zgodba, mehanika igre in igralne strategije. Mark Rosewater, ki je od leta 2003 glavni oblikovalec MTG, je prepričan, da je barvno kolo »srce igre«, saj ustvarja omejitve, definira t. i. okus igre, zagotavlja ravnovesje in igri dodaja osebnost (Rosewater 2003).

Na podlagi tega Rosewater barvno kolo vidi kot enega izmed treh glavnih elementov igre, ki so zaslužni za njen izjemni uspeh.

Diagram barvnega kolesa MTG zavzema obliko kroga, ki je enakomerno razdeljen na pet delov. Barve so v kolesu razvrščene glede na medsebojne odnose – sosednje barve si namreč delijo nekatere vrednote oziroma se lahko v nekaterih ciljih dobro podpirajo, v kolesu najbolj oddaljene barve pa si ideološko nasprotujejo. V kompleksnejših različicah barvnega kolesa MTG so poleg označenih simbolov in barv, ki predstavljajo različne filozofije, zapisane še njihove ključne vrednote in značilnosti, ki vplivajo na slog igre (MTG Wiki). (FIG. 1)

V nadaljevanju bom predstavila karakteristike vsake barve, ki sestavlja barvno kolo MTG, s poudarkom na njihovih filozofijah in vrednotah, ne pa toliko na specifikah, ki neposredno zadevajo strategije igranja MTG, saj slednje v kontekstu tega članka ni bistvenega pomena. Vseh pet opisov je povzetih po Rosewaterjevih zapisih na uradni spletni strani igre MTG iz leta 2015.

Filozofija bele barve temelji na skupnem dobrem, kar zagotavlja z vzpostavljanjem rigidne strukture pravil in zakonov. Močna skupnost je pomembnejša od individualnih želja posameznikov, ključni vrednoti pa sta sodelovanje in dobrodelnost. Moč bele barve je v dobri organizaciji in premišljenih strategijah, ki pa lahko uspešno funkcionirajo le, kadar si vsi člani skupnosti prizadevajo za isti cilj (Rosewater 2015a).

Modra barva temelji na ideji, da ima vsak posameznik potencial postati karkoli, če le ima na voljo ustrezno izobrazbo in orodja. Ta barva stremi k nenehnemu izpopolnjevanju in iskanju priložnosti za izobrazbo in je največja zagovornica tehnologije. Za doseganje svojih ciljev uporablja najnaprednejše, najboljše pripomočke in temelji na dobro premišljenih odločitvah, na metodološkem pristopu. Posledično je modra barva počasna, pasivna, saj ji natančen premislek onemogoča hitro odzivanje (Rosewater 2015b).

Glavni motiv črne barve je moč. Ideologija te barve prioritizira posameznikove potrebe in želje, zato vselej stremi k svobodi posameznika. Slednje se izraža v pohlepu, lastninjenju, oportunizmu, korupciji in manipulaciji. Črna barva ne pozna sočutja in solidarnosti, saj je zavezana prepričanju, da lahko uspejo le močnejši posamezniki, šibkejši pa odpadejo. Črna barva ne postavlja pravil in omejitev, izvaja le ustrahovanje, mučenje in uboj. Zaradi velike stopnje tveganja v svojih strategijah črna barva največjo nevarnost predstavlja sama sebi (Rosewater 2015c).

Glavna značilnost rdeče barve so čustva, spontanost in akcija. Rdeča temelji na negovanju odnosov in strasti, kar jo dela zanesljivo in odzivno.

Hkrati je rdeča barva kaotična, neutrudna, brutalna in nasilna, njena strategija vključuje tudi manipulacijo s čustvi. A hitra odzivnost se lahko prevesi v impulzivnost, to, da ne načrtuje dolgoročno, lahko predstavlja težavo (Rosewater 2015d).

Filozofija zelene barve izhaja iz prepričanja, da naravni red stvari predstavlja optimalno stanje. Zelena zato sveta ne želi spreminjati, temveč naravi prepušča, da dela po svoje, in jo pri tem le podpira, kjer je to potrebno. Zelena temelji na deterministočnem nazoru, da je vsakdo vpet v mrežo življenja z določeno vlogo, ki jo mora izpolniti. Strategija zelene barve gradi na soodvisnosti, sposobnosti pomlajevanja in pospeševanju naravnih procesov. Glavne vrednote so življenje, rast, skupnost, spiritualnost, modrost in tradicija. Skrajno zanašanje na instinkt in naravne sisteme lahko predstavlja šibkost zelene barve (Rosewater 2015e).

V igri MTG ima torej vsaka barva določene močne plati in slabosti, prednosti in omejitve. Nekaterim igralcem se slednje zdi pretirano, nepotrebno, vendar Rosewater vztraja, da so ravno omejitve in jasne, raznovrstne specifike barv ključne za zanimivo strateško igro. Temu doda, da ima vsaka barva »vgrajene šibke točke, ki jih lahko nasprotnik izkoristi. Vendar to ne pomeni, da ni mogoče najti ustvarjalnih rešitev. Pravzaprav je iskanje ustvarjalnih rešitev bistvo igre MTG« (Rosewater 2003). Ravno iskanje teh pa je tudi glavna vrlina oblikovanja, vrlina, ki se nam lahko pomaga učinkovito spopasti z zagonetnimi problemi naše družbe.

Barvno kolo MTG kot pripomoček za mapiranje in vrednotenje oblikovalskih praks

Tako kot v igri MTG raznovrstne karakteristike barv omogočajo zahtevnejšo igro, tako preplet najrazličnejših vplivov, motivov, agend in ideologij v resničnem svetu tvori zagonetne probleme. S tem pa princip raznovrstnosti barv hkrati kaže pot za iskanje rešitev – če pogledamo skozi prizmo barvnega kolesa, namreč postane jasno, da za kompleksne, raznovrstne probleme ne obstajajo enoznačni, univerzalni odgovori. K takšnim zagonetnim problemom je treba pristopati transdisciplinarno in z različnih koncev hkrati.

Preslikajmo torej barvno kolo MTG na problematike resničnega sveta in oblikovalske oziroma ustvarjalne prakse. Tako kot v igri MTG seveda tudi v resničnem svetu nikoli ni prisotna zgolj ena barva. Od nekdaj

obstajajo ideologije, politična gibanja in družbenoekonomski modeli, ki ustrezajo vsem barvam kolesa MTG. Je pa razmerje med njimi zagotovo bolj neuravnoteženo kot pri dobri igri MTG. Podobno, ali še nekoliko bolj očitno, je to neravnovesje pri prisotnosti oblikovalskih praks. Oblikovalski poklic se je namreč profesionaliziral in razmahnil šele v času industrializacije v podporo industrijski proizvodnji. To seveda ne pomeni, da oblikovanje kot aktivnost pred industrijsko revolucijo ni obstajalo in da se ob tem niso razvijala druga oblikovalska področja. Pomeni pa, da je oblikovalska smer, ki služi tržni proizvodnji, dobila veliko prednosti pred drugimi smermi, saj se je vzporedno s tehnološkim razvojem pospešeno razvijala vse do danes.

Začnimo torej z barvo, ki najbolje kaže gospodarsko ureditev današnje družbe, črno. Ideologija črne barve se izrazito ujema z neoliberalizmom, ki temelji na prostem trgu. Takšna gospodarsko-družbena ureditev kot glavni cilj zasleduje gospodarsko rast in v ta namen spodbuja konkurenčnost na trgu ter individualizem v družbi. Vrednota zasledovanja lastnih interesov namreč ustvarja ugodne razmere za potrošniško vedenje, saj omogoča začaran krog povpraševanja in potrošnje (Salecl 2011, 9–14). V službi slednjega je ujeto tudi oblikovanje, ki sodeluje pri proizvodnji takšnih tržnih izdelkov in storitev, ki spodbujajo hitro, prekomerno potrošnjo (Packard 1960, 62–64). Oblikovalske prakse, ki odgovarjajo ideologiji črne barve, so torej vse tiste prakse, ki so osredotočene na razvijanje tržno uspešnih izdelkov in storitev, brez ozira na negativne posledice, ki jih te povzročajo ljudem in okolju. Tovrstno oblikovanje uporablja različne mehanizme za sočasno ustvarjanje in izpolnjevanje trivialnih želja. Med njimi je najizrazitejša metoda načrtne zastarelosti, ki temelji na treh principih, ki jih Vance Packard opiše v knjigi *The waste makers*: funkcionalna zastarelost, materialna zastarelost in zastarelost zaželenosti (Packard 1960, 55). Rezultat teh principov so denimo izdelki za enkratno rabo in nekvalitetni izdelki, ki se hitro uničijo, izdelki, ki so podvrženi hitri menjavi trendov, in nepopravljivi izdelki. Tovrstni izdelki so danes tako vseprisotni v naših življenjih, nanje smo tako navajeni, da jih navadno štejemo za samoumevne in neproblematične. Čeprav so bili nekateri oblikovalci do takšnih pristopov kritični že od samih začetkov industrializacije in masovne proizvodnje,[1] se stanje v oblikovanju do danes še ni radikalno spremenilo.

[1] Glej na primer avtorje, kot sta John Ruskin in William Morris.

Na tej točki je najbolj smiselno nadaljevati s pogledom skozi prizmo modre barve. V evropskem prostoru so se tej barvi sorodne vrednote razmahnile v 18. stoletju z razsvetljenstvom. Podobno kot pri filozofiji modre barve je razsvetljenstvo poudarjalo razum, znanost in materializem, kar je, skupaj z že prej omenjeno industrializacijo, tlakovalo pot sodobni družbi. Od konca druge svetovne vojne pa do leta 2000 je potekal eksponenten družbenoekonomski razvoj, poimenovan tudi obdobje velike rasti (Steffen et al. 2011), ki je na eni strani prinesel številne inovacije in tehnološke rešitve, brez katerih si danes preprosto ne znamo več predstavljati življenja, na drugi strani pa to obdobje povezujemo tudi s pospešeno porabo neobnovljivih virov in škodljivimi vplivi na okolje, ki se kažejo v podnebnih spremembah, izgubi biotske raznovrstnosti, krčenju gozdov, zakisanju oceanov in še bi lahko naštevali (*ibid*.). Slednje gre seveda z roko v roki s prej opisano neoliberalno ideologijo, ki ustreza črni barvi, zato ni naključje, da sta barvi znotraj kolesa postavljeni ena zraven druge. Ideologija modre barve je izrazito dvolična, saj znanost in tehnologija hkrati omogočata izjemne izboljšave naših življenj, po drugi strani pa lahko tehnologija, obratno, naša življenja neposredno ali posredno ogrozi. V modro kategorijo tako spadajo oblikovalske in umetniške prakse, ki bodisi uporabljajo nove tehnologije, kot so umetna inteligenca, robotika in digitalna fabrikacija, bodisi temeljijo na širjenju znanja prek ozaveščanja in izobraževalnih aktivnosti.

Če se po ideologiji postavimo nasproti modri barvi in pogledamo skozi perspektivo rdeče, ki pred razumom prioritizira občutke, negovanje odnosov in spontanost, lahko v oblikovanju prav tako kot pri modri najdemo prakse, ki delujejo bodisi v prid kapitala bodisi v smeri trajnosti. V prvem primeru gre za oblikovalske prijeme, ki na podlagi dobrega poznavanja človeške psihe in čustev z namenom pospešene prodaje ustvarjajo izredno privlačne, zasvojljive produkte, v drugem primeru pa gre za oblikovanje izdelkov, ki omogočajo, da se uporabniki nanje čustveno navežejo, kar zagotavlja dolgotrajno, trajnostno uporabo in pristno zadovoljstvo. Slednji pristop po Jonathanu Chapmanu imenujemo čustveno vzdržljivo oblikovanje (*emotionally durable design*) (2005).

Postavimo se še v perspektivo bele barve. Ta, v nasprotju s črno, pred potrebe posameznika postavlja skupno dobro. S stališča družbene ureditve gre torej za logiko, ki so ji z namenom lažjega preživetja sledile tako pračloveške skupnosti kot tudi marsikatera politična ureditev vse od nastanka prvih civilizacij. Seveda se tudi pri tej ideologiji da prepoznati dva obraza: odločanje o skupnem dobrem se lahko pri centraliziranem načinu vodenja države hitro sprevrže v totalitarizem, na drugi strani

pa lahko skupno dobro dosegamo na decentraliziran, participatoren način odločanja, kar pa se navadno izkaže za zelo kompleksno nalogo. A ravno na tem področju lahko naredi oblikovanje veliko spremembo. Prakse, kot so participatorno oblikovanje, sooblikovanje, vključujoče oblikovanje in oblikovalski principi, kot so *nudge theory*, odprtokodnost, naredi sam in podobni, pomagajo zgraditi vrednote bele barve od spodaj navzgor. Takšni pristopi namreč spodbujajo sodelovanje, skupno odločanje in skrb ter s tem v posameznikih gojijo občutek pripadnosti in smisla.

Če ideologija bele barve skrbi za skupno dobro in se s tem postavlja po robu individualističnim težnjam črne barve, se ideologija zelene zrcali v oblikovalskih in umetniških praksah, ki se proti destruktivnosti kapitalizma borijo v ekologiji in okoljevarstvu. Tovrstne prakse lahko zvrstimo po spektru od manj do bolj vpetih v naravno okolje. Med prvimi najdemo trajnostne pristope, ki se osredotočajo na zmanjšanje porabe virov in energije ter uporabo neškodljivih materialov, bolj vpeti pristopi pa so tisti, ki jih Bill Reed označi kot regenerativne in delujejo na način, da po zgledu narave aktivno, celostno izboljšujejo vitalnost naravnih sistemov in so vanje popolnoma vpeti (Reed 2007).

Odličen primer slednjega je denimo permakulturno načrtovanje, ki na podlagi razumevanja značilnosti lokalnih naravnih pogojev snuje sisteme, ki pomagajo lokalnemu ekosistemu uspevati v vsem svojem potencialu, od česar pa ima koristi tudi vključena človeška skupnost. Najobsežnejši primer takšnega projekta je iniciativa konvencije Združenih narodov o boju proti dezertifikaciji za vzpostavitev Velikega zelenega zidu, katerega cilj je vzpostaviti ekosistem, ki naj bi preprečeval širjenje puščave in izboljšal življenjske razmere za ljudi in druge žive organizme na tem območju. Ta biotsko pestra zasaditev je načrtovana v obliki pasu, ki se bo raztezal po celotni geografski dolžini afriške celine in je trenutno v fazi razvoja (UNCCD). Od začetka projekta v letu 2007 do decembra 2022 je projekt – kot so ocenili na afriški ekonomski konferenci na Mavriciju – dosegel 18 % zadanih ciljev, kar pomeni, da je bilo revitaliziranih že več kot 20 milijonov hektarjev zemlje, ustvarjenih 350.000 služb in 90 milijonov ameriških dolarjev zaslužka s projektnimi aktivnostmi (UNDP 2023).

Opisana iniciativa je eden od dokazov, da človeški interesi in aktivnosti niso nujno v navzkrižju z naravnim okoljem, kot se v današnjih, ideološko črnih časih velikokrat zdi. V zadnjem desetletju se zaradi vedno bolj očitnih posledic destruktivnega delovanja človeštva zavedanje o pomenu naravnih ekosistemov za kvalitetno (so)bivanje na tem planetu končno širi. A ker smo to tako dolgo ignorirali, ker smo tako dolgo živeli na račun narave, smo po poti pozabili, kako delovati vzajemno, kako

z naravo sodelovati. Ravno zato bi se morali danes čim bolj posvetiti pristopom iz zelenega dela barvnega kolesa, da poskusimo znova vzpostaviti porušeno ravnovesje v svetu.

Da ne ostanemo zgolj na enem praktičnem primeru, naj poudarim, da so bile po kriteriju barvnega kolesa MTG izbrane magistrske naloge študentk in študentov Akademije za likovno umetnost in oblikovanje, ki so v obliki člankov predstavljene v naslednjem, četrtem poglavju te publikacije. Projekti predstavljenih magistrskih nalog so bili izbrani tako, da ustrezajo ideologiji modre, rdeče, bele in/ali zelene barve in si prizadevajo za pozitivne spremembe bodisi v družbi bodisi v okolju. Nabor predstavlja dela študentov z različnih študijskih smeri UL ALUO, natančneje iz slikarstva, kiparstva, industrijskega oblikovanja in oblikovanja vizualnih komunikacij, saj, kot je razvidno iz prejšnjega orisa praks, je oblikovanje tu razumljeno v najširšem pomenu besede. Vsi opisani magistrski projekti tudi odločno prehajajo ozko začrtane okvire smeri oziroma strok, iz katerih izhajajo. In ravno v tem se kaže, da avtorice in avtorji teh del dobro razumejo razmere današnjega časa: za pristopanje k zagonetnim problemom potrebujemo kompleksne, transdisciplinarne pristope.

Slednje pa ni naključje, saj, kot izpostavi Richard Buchanan, je oblikovanje disciplina, ki je najprimernejša za obravnavo zagonetnih problemov. Še več, avtor trdi, da so načeloma vsi oblikovalski problemi pravzaprav zagonetni problemi, saj:

> ↪ »oblikovanje nima posebne lastne tematike, razen tega, kar si oblikovalec sam zamisli. Tematika oblikovanja je potencialno po obsegu univerzalna, saj je oblikovalsko mišljenje mogoče uporabiti na kateremkoli področju človeške izkušnje. Toda v procesu izvajanja rešitve mora oblikovalec sam odkriti ali izumiti določeno temo iz težav in vprašanj specifičnih okoliščin. To je v ostrem nasprotju z znanstvenimi disciplinami, ki se ukvarjajo z razumevanjem načel, zakonov, pravil ali struktur, ki so nujno utelešene v obstoječih vsebinah. Takšne tematike so nedoločene ali premalo določene, zato je potrebna nadaljnja preiskava, da bi jih ugotovili. Vendar pa nikoli niso radikalno nedoločene na način, ki bi bil neposredno primerljiv z oblikovanjem.« (1992, 16–17)

Sposobnost obravnave zagonetnih problemov, ki je privzeto vkodirana v oblikovalski proces, skupaj s sposobnostjo ustvarjalnega mišljenja, ki ustvarjalcem omogoča iskati alternativo, ponazarja izjemen potencial oblikovalske in umetniške stroke za naslavljanje kriz, s katerimi

se srečujemo. Oblikovanje in umetnost sta zagotovo področji, ki sta ključni za vzpostavljanje boljše prihodnosti.

Sklep: novo orodje kot krik, ki sproži odmeve v prihodnosti

Prispevki v naslednjem poglavju so torej praktični primeri praks, ki sem jih poskušala orisati in pozicionirati znotraj barvnega kolesa MTG, in dokazujejo, da na Akademiji za likovno umetnost in oblikovanje Univerze v Ljubljani že nastajajo alternative konvencionalnim, črnim pristopom. Če katero, je ravno akademsko okolje tisto, ki zaradi neodvisnosti od sil trga omogoča največ svobode pri iskanju novih poti, novih pristopov, ki kljubujejo ustaljenim praksam. Ravno zato trdno stojim za mnenjem, da moramo študente spodbujati pri raziskovanju izven okvirjev ustaljenih gospodarskopolitičnih okvirjev in jih, namesto da jih pripravljamo za vzdrževanje statusa quo, raje opremiti s čim več orodji za kritično preizpraševanje sveta in iskanje rešitev na zaznane pereče probleme. Hkrati sem prepričana, da se korenite spremembe lahko začnejo dogajati tako, da začnemo z manjšimi spremembami, ki kažejo zgled in smer, tem pa jih sledi vedno več in vedno večje, kot pri učinku snežne kepe. Naj torej predstavljeno orodje in članki v naslednjem poglavju služijo generacijam, ki prihajajo, da začnejo valiti kepo.

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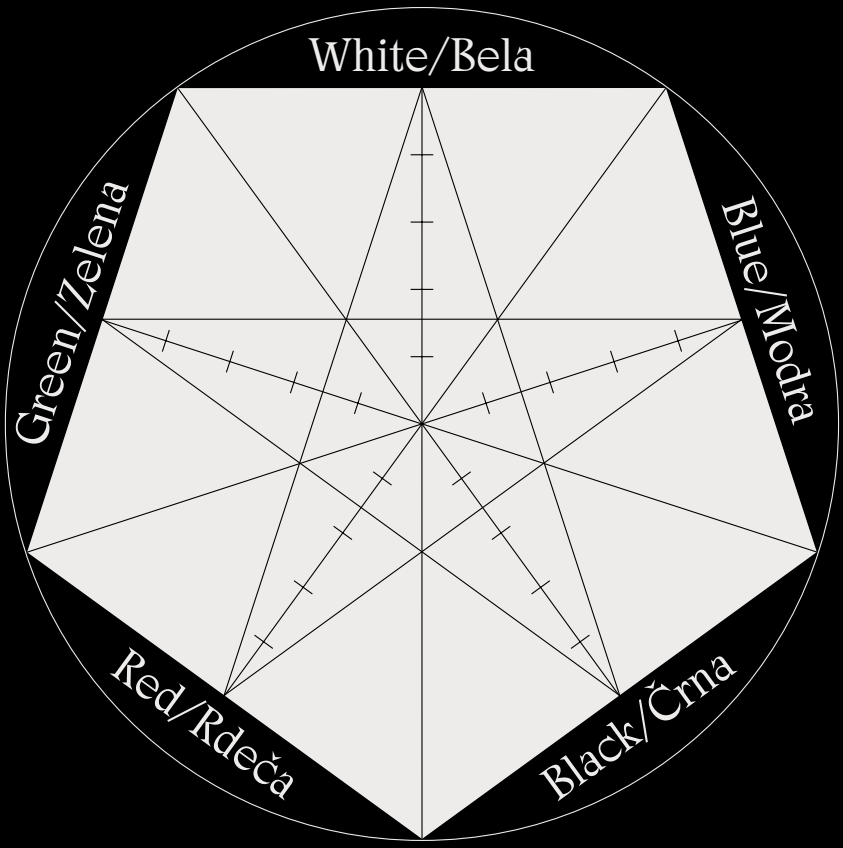
Colour Pie Scheme



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 ...

ECHOES OF TOMORROW

ODMEVI JUTRIŠNJEGA DNE

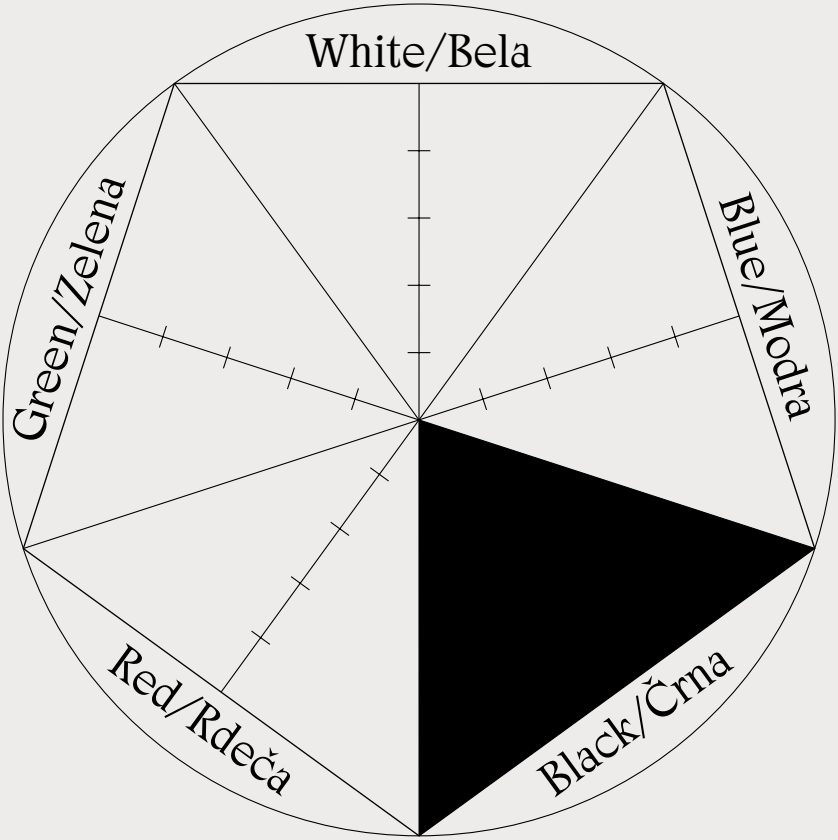
CASE STUDY

1

ŠTUDIJA PRIMERA

Mapping

Mapiranje



WHITE

BLUE

BLACK

consumption, economic growth, capital, unscrupulous, murder, exploitation, weapons, death, immoral, evil

RED

GREEN

BELA

MODRA

ČRNA

potrošnja, ekonomska rast, kapital, brezobzirnost, umor, izkoriščanje, orožje, smrt, nemoralno, zlo

RDEČA

ZELENA

Case Study 1

WHITE BLUE **BLACK** RED GREEN

THROUGH THE EYES OF YOUNG DESIGNERS: HOW BLEAK IS THE PRESENT AND IS THERE HOPE FOR THE FUTURE?

AUTHORS	Group of first-year master's students: Luka Bernik, Žiga Dolinar, Matevž Gortnar, Gal Grobovšek, Luka Janežič, Hana Klincov, Marko Škrbić, Rin Togo and Ana Topole
MENTORS	Assoc. Prof. Dr. Barbara Predan and Tch. Asst. Tamara Lašič Jurković
SUBJECT	History and Theory of Critical Design I
STUDY PROGRAMME AND COURSE	Industrial Design and Applied Arts, Industrial Design
ACADEMIC YEAR	2023/2024

As an industrial designer, I cannot but reflect that we are responsible for the current situation. We have created billions of attractive products with planned obsolescence and low-quality materials, all for the sole purpose of stimulating economic growth. (Dolinar 2023)

STARTING POINT

Conviviality

In the winter semester of the academic year 2023/24, the course History and Theory of Critical Design I started rather pessimistically. First-year master's students were tasked to examine the role of the design profession today and in the future. The starting point of the assignment was, however, encouraging: students had to expand on the theme of the BASE Milano call for entries titled *In-Difference: Design, Spatial Activism, Convivialism*,① which, in order to create the conditions for quality coexistence, urges building on convivialist principles such as collaboration, intercultural dialogue, equality and ecological responsibility (BASE Milano 2023). But the optimism pervading the concept of convivialism raised a number of critical concerns among the students. During the first meeting on 9 October 2023, focused on the presentation of the central theme, some students immediately expressed scepticism towards the possibility of maintaining hope for a better future in today's world.

This sharp concern was likely a result of the fact that everyone was still reeling from the devastating floods that swept through much of Slovenia in early August 2023 and are now considered the worst natural disaster in the country's history since its independence (Kovač 2024).

① After the submission of an exhibition proposal in response to the *We Will Design 2024* call for proposals, issued by the BASE Milano cultural centre, *Echoes of Tomorrow* was selected to be showcased during Milan Design Week 2024.

Moreover, just two days prior to our meeting, the Israeli-Palestinian conflict had escalated, culminating in Israel's siege of Gaza. This led many scholars to warn, as early as 15 October, of the potential for genocide in Gaza (Twailr 2023). As the students followed these events, they became increasingly aware that the situations described were not mere coincidences or exceptions, but rather a sign that similar humanitarian and natural disasters will become more frequent in the future.

CRITICAL EXAMINATION OF THE ISSUE

Who and "what" is a designer today?

A critical stance was actually desired for the assigned task. One of the first assignments required the students to answer the question "Who and 'what' is a designer today?" To find the answers, they were asked to refer to Potter's book *What is a Designer*, in which the author states:

> ↪ If society is geared to satisfactions on the cheap, the designer has a special responsibility to straighten himself out in that respect; to decide where he stands. When real needs are neglected, and artificial ones everywhere stimulated into an avid hunger for novelty, sensation, and status-appeal, largely (but not wholly) for reasons of private or public profit; then here is his own nature, his own society. He is involved, and he must decide how best to act. (Potter 2003, 35–36)

To this regard, Matevž Gortnar and Gal Grobovšek (2024) underline:

> ↪ The designer's work is largely embedded in a market economy, where decisions about investment, production and distribution, and the prices of goods and services are chiefly influenced by the interaction of supply and demand forces. Such a system, reinforced by human greed, requires design that conforms to its terms, i.e. terms that promote unlimited growth. These terms include non-compliance with health and environmental standards, underpayment of workers and planned obsolescence, among others. Such an approach frequently has adverse environmental impacts, as the overexploitation of finite natural resources generates increasing amounts of waste [...]. [At the same time, as Potter argues], good design solutions that consider the concerns and terms

> of environmentally responsible design often go unrealised due to being less commercially viable or even unviable (2003, 32).

In addition, Luka Bernik (2023) observes that "most design decisions prioritise convenience, consumption and disposability over sustainability and ecological responsibility." For this reason, Bernik further on intensifies his criticism in Victor Papanek's manner, stating that "consumer culture leads to wasteful and environmentally damaging practices, essentially to murder. There is nothing more immoral than killing people; murder is a malicious act, and bad design is just that. Murder" (*ibid.*). Moreover, Bernik also argues that while it may not be immediately apparent that this type of design is basically murder as its effects are indirect and, in most cases, delayed, this does not alter the highlighted fact (*ibid.*). Marko Škrbić (2023) further illustrates this by providing a very obvious example of how design can be linked to murder:

> ↪ Take, for example, the design of land mines. A land mine is intended to be hidden just below the surface of the earth and to explode when light pressure is applied to its top. The fact that hidden land mines blow off the legs of unsuspecting adults, children and animals, raises questions about the morality of those involved in commissioning, designing, manufacturing, advertising, distributing, selling and using the product.

This is a textbook example of the paradox Vilém Flusser writes about, arguing that designers cannot actually avoid acting immorally. He, in fact, states: "Between pure good ('moral' good), which is good for nothing, and applied good ('functional' good), there can be absolutely no compromise, because in the end everything which is good in the case of applied good is bad in the case of moral good" (Flusser 1999, 33). This idea can be applied to the landmine example: if it is well designed (functional good), it means that it will effectively kill an unsuspecting human, which is in exact opposition with moral good. Flusser claims that Evil is disguised within every functional object, and the only difference lies in the extent to which this is obvious (*ibid.*).

This can be confirmed by the example provided by Rin Togo (2023), which, according to the author, casts doubt on the possibility of achieving swift and drastic positive change. A solution with an otherwise good and responsible intention has become exploited by its users for harmful consumption practices. As Togo explains:

↪ The Japanese flea market app *Mercari* has gained over 20 million monthly users, which is approximately one-sixth of Japan's population (Mercari 2023). Mercari's mission is to drive social prosperity by promoting the recirculation of limited resources, which aligns with ontological design principles (Fry 2012). However, this app has led to the emergence of new consumer behaviour among youth: purchasing many new items to resell them at a higher price, subsequently allocating the profits to purchase more new items intended for resale.

Luka Janežič (2024), who similarly draws on Tony Fry's work, expresses the opinion that this mindset and behaviour leads to social collapse; as Fry regrettably highlights: "[t]he combination of our numbers, technology and profligate use of planetary resources ensures the continued globalization of the nihilistic character of our world (de)formation" (Fry 2012, 141). Janežič (2024) expands this idea, stating:

↪ Bad design, characterised by a lack of consideration for the environment and society, causes irreparable damage to our planet. From poorly designed products that contribute to pollution and waste to unsustainable production processes that deplete natural resources, existing design practices are driving us closer to the brink of ecological and social collapse."

Hana Klincov (2023) point outs that the cause of this unscrupulous human behaviour is the dichotomy between humankind and nature, arguing that "humanity has enslaved the nature from which it derives. It treats it ruthlessly and without considering the necessity to cooperate with it, rather than dominate it." Considering students' views, the challenge highlighted by Fry (2012, 136) remains relevant: "In order for there to be a future for us, we have to make it by overcoming our negation—'we' have to overcome the unsustainable defuturing being that we are."

RESPONSE TO THE IDENTIFIED ISSUES

What should design look like to enable positive social change?

The semester assignment for History and Theory of Critical Design I primarily aimed to encourage students to begin critically reflecting on their

actions and their consequences for the world. As Fry (2020, 10) writes in his book *Defuturing: A New Design Philosophy*:

> ↪ Fundamentally, we act to defuture because we do not understand how the values, knowledge, worlds and things we create go on designing after we have designed and made them. [...] [W]hat is being said is that we have very little comprehension of the complexity, ongoing consequences and transformative nature of our impacts.

In what follows, Fry (2020, 239) presents an ultimatum: if we are unable or unwilling to realise how our actions are leading to defuturing, we must not even attempt to create solutions or engage in design practice. The duration of one academic semester is insufficient for a comprehensive understanding of the current world situation. Yet, to move beyond mere criticism, students were tasked with proposing alternative approaches after having thoroughly pondered on the state of the world and design. In light of what they had read and discussed, students were challenged to envision the social transformations necessary for a better future and to outline the characteristics of design that would facilitate or promote these changes.

The proposals are most effectively summed up by Rin Togo (2023), who, in the process of exploring solutions, points out that "up until now, numerous tools, services, and applications have primarily targeted the enhancement of individual's capabilities such as speed, accuracy, and clarity." Togo acknowledges that these innovations have greatly facilitated communication and various other tasks; however, she emphasises that the development of such tools has led to certain drawbacks, as illustrated by the example of Google Maps app: "Google Maps, for instance, has substantially diminished opportunities to ask for directions from passersby on the street" (*ibid.*). The author argues that as result "we are missing out on new encounters and discoveries that might occur through those conversations" (*ibid.*). Togo concludes: "By doubting the present dichotomy that convenient/comfortable is entirely good and in-convenient/ugly is inherently bad, and focusing on the richness that lies within inconvenience, it is possible to create new convivial value" (*ibid.*).

In defining this new perspective or criterion for assessing design quality, the author coins the term 'convivialability'. She provides a further explanation of this concept by describing it as a way of creating space

for users' imagination, creativity and active engagement (*ibid.*). Moreover, it involves the discovery and development of relationships that promote enhanced coexistance. A similar opinion is expressed by Gortnar (2023), who emphasises that in design "[t]he focus should be on creating technological solutions that enrich, rather than replace, the physical experiences." In addition, Škrbić (2023), when discussing technological development, draws attention to Ivan Illich's guidelines for progress, which also correspond to the principles of convivialism: "People need new tools to work with rather than tools that 'work' for them. They need technology to make the most of the energy and imagination each has, rather than more well-programmed energy slaves" (Illich 2009, 17). Grobovšek (2023), drawing on Fry (2012), poses an even more radical demand on designers:

> ↪ Ideally, designers should disengage from the system—emphasis being on the need to go beyond applying slight adaptations from within—and begin to act autonomously, adopting a critical stance towards their previous work. First and foremost, they should act with respect for the source that provides us with the means to satisfy our basic needs: the planet where we live. [...] Radical change is needed, which will not be dictated by capital.

The reflections made throughout "History and Theory of Critical Design I" coursework are further encapsulated by the words of Barbara Predan and Gaja Mežnarić Osole, which are highlighted by Žiga Dolinar and Ana Topole in their final semester paper. "As hopeless as the situation is today, it seems that it is indeed this abyss of hopelessness that may provide fertile ground for the emergence of radical yet creative thought, which will create distance from the status quo and point out the necessity to evaluate an alternative way of life" (Predan and Mežnarić Osole 2018). This is, after all, the purpose of the present monograph.

To avoid "gazing long into the abyss"—as Nietzsche warned—let us conclude on a brighter note by borrowing Žižek's answer to the question of how radical change will begin to happen on a global scale: "I'm a pessimist in the sense that we are approaching dangerous times. But I'm an optimist for exactly the same reason. Pessimism means things are getting messy. Optimism means these are precisely the times when change is possible" (Žižek 2012).

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Študija primera 1 BELA MODRA ČRNA RDEČA ZELENA

KAKO TEMEN JE DANAŠNJI ČAS SKOZI OČI MLADIH OBLIKOVALCEV IN ALI ŠE OBSTAJA UPANJE ZA PRIHODNOST?

AVTORJI Skupina študentov 1. letnika magistrskega študija: Luka Bernik, Žiga Dolinar, Matevž Gortnar, Gal Grobovšek, Luka Janežič, Hana Klincov, Marko Škrbić, Rin Togo in Ana Topole

MENTORICI izr. prof. dr. Barbara Predan in asist. Tamara Lašič Jurković

PREDMET Razvoj in teorija kritičnega oblikovanja I

ŠTUDIJSKI PROGRAM IN SMER Industrijsko in unikatno oblikovanje, Industrijsko oblikovanje

ŠTUDIJSKO LETO 2023/2024

»Kot industrijski oblikovalec se ne morem izogniti razmišljanju, da smo odgovorni za današnje razmere. Ustvarili smo na milijarde privlačnih izdelkov z načrtno omejenim življenjskim ciklom ter nizkokakovostnimi materiali, vse izključno zaradi spodbujanja ekonomske rasti.« (Dolinar 2023)

IZHODIŠČE

Konvivializem

Zimski semester študijskega leta 2023/24 se je pri predmetu Razvoj in teorija kritičnega oblikovanja I začel precej pesimistično. Študenti prvega letnika magistrskega študija so v nalogi morali preizpraševati vlogo oblikovalskega poklica danes in v prihodnosti. Izhodišče naloge je bilo sicer spodbudno: izhajati so morali iz razpisa BASE Milano z naslovom *In—Difference: Design, Spatial Activism, Convivialism*,① ki za vzpostavljanje pogojev za kvalitetno sobivanje poziva h grajenju na konvivialističnih načelih, kot so sodelovanje, medkulturni dialog, enakopravnost in ekološka odgovornost (BASE Milano 2023). A optimizem, ki prežema koncept konvivializma, je pri študentih vzbudil prenekatere kritične pomisleke. Že na prvem srečanju 9. oktobra 2023, takoj po predstavitvi izhodiščne teme, so se nekateri začeli spraševati o tem, kako v današnjem svetu sploh še lahko ohranjamo kakršnokoli upanje na boljšo prihodnost.

Na ta ostri pomislek je verjetno vplivalo to, da so bili vsi še pod vplivom uničujočih poplav, ki so v začetku avgusta 2023 pustošile po večjem delu Slovenije in danes veljajo za najhujšo naravno nesrečo v zgodovini samostojne države (Kovač 2024). Poleg tega se je le dva dni pred našim

① Na razpis *We Will Design 2024*, ki ga je razpisalo razstavišče BASE Milano za razstavljanje na Milanskem tednu oblikovanja 2024, je bil sprejet razstavni predlog *Echoes of Tomorrow/ Odmevi jutrišnjega dne*.

srečanjem poglobil izraelsko-palestinski konflikt, ki se je kmalu zatem razvil v silovito izraelsko obleganje Gaze, za katero so številni strokovnjaki že 15. oktobra opozarjali, da gre za primer izvajanja genocida (Twailr 2023). Ob spremljanju vseh teh dogajanj so se študenti več kot očitno zavedali, da opisani situaciji nista le naključji oziroma izjema, temveč bodo tovrstnim humanitarnim in naravnim katastrofam priča vse pogosteje.

KRITIČNO PREČENJE PROBLEMA

Kdo in »kaj« je danes oblikovalec?

A kritična pozicija je bila za dano nalogo pravzaprav dobrodošla. Ena izmed prvih nalog je od študentov namreč zahtevala, da odgovorijo na vprašanje, kdo in »kaj« je danes oblikovalec. Pri iskanju odgovorov so si morali pomagati s Potterjevo knjigo *Kaj je oblikovalec*, v kateri je avtor zapisal:

> »Če je družba usmerjena k zadovoljstvu s cenenim, ima oblikovalec posebno odgovornost, da se sam opredeli glede tega; da se odloči za svoje stališče. Ko se prave potrebe zanemarjajo, umetne pa vsepovsod spodbujajo v požrešno lakoto po novostih, senzaciji in statusu, večinoma (ne pa v celoti) zaradi zasebnega ali javnega dobička, potem je to njegova narava, njegova družba. Vključen je vanjo in odločiti se mora, kako najbolje ravnati.« (Potter 2018, 38)

V tem oziru sta Matevž Gortnar in Gal Grobovšek izpostavila:

> »Oblikovalec je pri svojem delu večinoma vpet v tržno gospodarstvo, v katerem na odločitve o naložbah, proizvodnji in delitvi ter na cene dobrin in storitev vplivajo predvsem interakcije sil ponudbe in povpraševanja. Takšna ureditev, podkrepljena s človeškim pohlepom, zahteva oblikovanje po svojih pogojih – to je pogojih, ki spodbujajo neomejeno rast. Torej pogojih, kot so neupoštevanje zdravstvenih in okoljskih standardov, podplačevanje delavcev, načrtna zastarelost ipd. Tako delovanje ima pogosto negativen vpliv na okolje, saj prekomerna raba omejene količine naravnih virov, ustvarjanje vedno več odpadkov [...]. [Medtem pa – sledeč Potterju –] dobre oblikovalske rešitve, ki upoštevajo vprašanja in pogoje okoljsko odgovornega oblikovanja, pogosto kot tržno manj ali celo nesmiselne niso realizirane (2018, 35).« (2024)

Luka Bernik je dodal, da »večina oblikovalskih odločitev na prvo mesto postavlja priročnost, potrošnjo in enkratno uporabo namesto trajnosti in ekološke odgovornosti« (2023). Zato je Bernik svojo kritiko v maniri Victorja Papaneka še zaostril, ko je zapisal, da »potrošniška kultura vodi k potratnim in okoljsko škodljivim praksam, v bistvu k umoru. Nič ni bolj nemoralnega kot ubijanje ljudi – umor je zlonamerno dejanje in slabo oblikovanje je prav to. Umor« (*ibid.*). Bernik je ob tem še izpostavil, da to, da je tovrstno oblikovanje pravzaprav umor, morda ni očitno na prvi pogled, saj so posledice posredne in se v večini primerov začnejo kazati s časovnim zamikom, vendar to po njegovem mnenju ne spremeni izpostavljenega dejstva (*ibid.*). Marko Škrbić je ob tem dodatno ilustriral zelo očiten primer tega, kako je oblikovanje lahko povezano z umorom:

> ↪ »Za primer vzemimo oblikovanje kopenske mine. Kopenska mina je namenjena temu, da se skrije tik pod površjem zemlje in eksplodira ob pritisku. Dejstvo, da skrite kopenske mine ob tem raznesejo noge nič hudega slutečim odraslim, otrokom in živalim, postavlja pod vprašaj moralo vseh ljudi, ki so sodelovali pri naročanju, oblikovanju, proizvodnji, oglaševanju, distribuciji, prodaji in uporabi tega izdelka.« (2023)

Slednje je šolski primer paradoksa, o katerem piše Vilém Flusser, ki trdi, da se oblikovalci pravzaprav nikakor ne moremo izogniti nemoralnemu delovanju. Namreč, kot zapiše: »Med absolutnim dobrim ('moralnim' dobrim), ki ni dobro za nič, in uporabnim dobrim ('funkcionalnim' dobrim) nikakor ne more obstajati kompromis, saj vse, kar je dobro v primeru uporabnega dobrega, je slabo v primeru moralnega dobrega« (Flusser 1999, 33). Ali če preslikamo na primer kopenske mine: če je ta dobro oblikovana (funkcionalno dobro), pomeni, da bo učinkovito ubila nič hudega slutečega človeka, kar je v popolnem nasprotju z moralnim dobrim. Flusser trdi, da se v vsaki funkcionalni stvari skriva zlo, razlika je le, do katere mere je to očitno (*ibid.*).

To lahko potrdimo s primerom, zaradi katerega je Rin Togo podvomila o možnosti hitrih in radikalnih sprememb na bolje. Gre za rešitev s sicer dobrim, odgovornim namenom, ki pa so jo uporabniki začeli izkoriščati za škodljive potrošniške prakse, saj, kot je pojasnila, na Japonskem obstaja

> ↪ »Aplikacija za prodajo stvari iz druge roke, ki se imenuje Mercari in jo na mesečni ravni uporablja 20 milijonov ljudi, kar predstavlja približno eno šestino japonske populacije (Mercari 2023). Poslanstvo

podjetja Mercari je doseganje družbene blaginje s spodbujanjem krožne rabe omejenih virov, kar je v skladu z načeli ontološkega oblikovanja (Fry 2012). Vendar pa je zaradi te aplikacije med mladimi vzniknilo novo potrošniško vedenje – nakupovanje številnih novih izdelkov z namenom hitre preprodaje po višji ceni in uporaba zaslužka za nakupovanje še več novih izdelkov, namenjenih preprodaji.« (2023)

Luka Janežič je, prav tako naslanjajoč se na Tonyja Frya, zapisal, da tovrstna miselnost in delovanje po njegovem mnenju vodita k družbenemu propadu, saj, kot je boleče izpostavil Fry, »kombinacija našega števila, tehnologije in ekstenzivne rabe planetarnih virov zagotavlja nadaljnjo globalizacijo nihilističnega značaja naše (de)formacije« (Fry 2012, 141). K temu je Janežič dodal:

↪ »Slabo oblikovanje, za katero je značilno pomanjkanje upoštevanja okolja in družbe, povzroča nepopravljivo škodo našemu planetu. Od slabo oblikovanih izdelkov, ki prispevajo k onesnaževanju in odpadkom, do netrajnostnih proizvodnih procesov, ki izčrpavajo naravne vire, nas obstoječe oblikovalske prakse potiskajo bližje robu ekološkega in družbenega propada.« (Janežič 2024)

Kot vzrok za tovrstno brezobzirno človeško ravnanje je Hana Klincov izpostavila dihotomijo med človekom in naravo, saj je zatrdila, da je »človek zasužnjil naravo, iz katere izhaja. Z njo ravna brez milosti in brez pomisleka, da je treba z njo sodelovati, ne pa nad njo vladati« (2023). Sledeč študentskemu mnenju je pred nami še naprej ostal aktualen izziv, ki ga je izpostavil Fry: »Da bi za nas obstajala prihodnost, jo moramo ustvariti tako, da premagamo svoje zanikanje – premagati moramo nevzdržno izničevalno bitje, kakršno smo« (Fry 2012, 136).

ODGOVOR NA PREPOZNANO

Kakšno naj bo torej oblikovanje, da bo omogočilo pozitivne družbene spremembe?

Glavni namen semestrske naloge pri predmetu Razvoj in teorija kritičnega oblikovanja I je bil študente spodbuditi, da začnejo kritično

razmišljati o svojem delovanju in vplivu tega na svet. Saj, kot je dejal Fry v knjigi *Defuturing: A New Design Philosophy*:

> »V bistvu delujemo *proti prihodnosti* (angl. *defuture*), ker ne razumemo, kako se vrednote, znanje, svetovi in stvari, ki jih ustvarjamo, sami oblikujejo naprej, po tem, ko smo jih oblikovali in naredili. [To] kar želim povedati, je, da je naše razumevanje kompleksnosti, nadaljnjih posledic in transformativne narave naših vplivov zelo omejeno.« (Fry 2020, 10)

V nadaljevanju nas je Fry postavil pred ultimat, naj, če ne znamo ali nismo sposobni uvideti, kako si z lastnim delovanjem *odvzemamo prihodnost*, niti ne poskušamo ustvarjati rešitev oziroma oblikovati (Fry 2020, 239). Čas enega študijskega semestra je seveda prekratek za celostno razumevanje današnjih razmer v svetu. Pa vendar – da ne bi ostali izključno pri kritiki – so študenti po tem, ko so pregnetli svoje misli o stanju sveta in oblikovanja, dobili za nalogo predlagati načine za drugačno delovanje. Upoštevajoč vse prebrano in predebatirano, so si morali zamisliti, kakšne družbene spremembe potrebujemo za boljšo prihodnost in kakšno naj bo oblikovanje, da bo te spremembe omogočilo oziroma spodbudilo.

Predlagano je najbolje strnila Rin Togo, ki je pri iskanju rešitev izpostavila, da so do danes »številna orodja, storitve in aplikacije primarno naslavljali izboljšanje posameznikovih sposobnosti, kot so hitrost, natančnost in jasnost« (2023). Togo se je zavedala, da so tovrstne inovacije občutno olajšale medsebojno komunikacijo in marsikatera druga opravila, vendar je ob tem izpostavila, da smo z razvojem takšnih orodij postali tudi za marsikaj prikrajšani, kar je ponazorila s primerom aplikacije Google Maps: »Google Maps je bistveno zmanjšal priložnost za povpraševanje po navodilih za pot ljudi, ki jih srečamo na ulici.« (*ibid.*) Zaradi slednjega po mnenju avtorice »zamujamo nova srečanja in odkritja, ki bi se lahko zgodila skozi pogovore z neznanci« (*ibid.*). Togo je sklenila: »Če podvomimo o obstoječi dihotomiji, da je priročno/udobno popolnoma dobro in nepriročno/grdo v osnovi slabo ter se namesto tega osredotočimo na dragocene izkušnje, ki se skrivajo znotraj nepraktičnega, lahko vzpostavimo novo konvivialno vrednoto« (*ibid.*).

Ta novi pogled, kriterij za prepoznavanje kvalitete oblikovanja, je poimenovala s skovanko »convivialability«. Če slednje opišemo z nekaj več besedami, gre, kot je pojasnila avtorica, za način ustvarjanja

prostora za domišljijo, ustvarjalnost in aktivnost uporabnikov (*ibid.*). Še več, gre za odkrivanje in razvijanje odnosov, ki nam bodo omogočili boljše sobivanje. Podobno je razmišljal Gortnar, ki je poudaril, da bi se morali oblikovalci osredotočiti na oblikovanje tistih prostorov in orodij, »ki nas bogatijo, namesto da zgolj zamenjujejo fizične izkušnje« (2023). Škrbić pa je pri obravnavi tehnološkega razvoja izpostavil smernice za napredek Ivana Illicha, ki prav tako ustrezajo načelom konvivializma: »Ljudje potrebujejo nova orodja za delo, in ne orodij, ki 'delajo' namesto njih. Tehnologijo potrebujejo zato, da kar najbolje izkoristijo energijo in domišljijo vsakega, namesto [da ustvarjamo] še več dobro programiranih energetskih sužnjev« (Illich 2009, 17). Grobovšek, znova zgledujoč se po Fryu (2012), je pred oblikovalce postavil še nekoliko radikalnejšo zahtevo:

> ↪ »Oblikovalec bi, idealno, moral izstopiti iz sistema – s poudarkom, da ga ne bi poskušal le nekoliko prilagoditi od znotraj – in začeti delovati neodvisno, kritično do tega, kar je počel pred tem. V prvi vrsti bi moral delovati z obzirom do tega, kar nam daje sredstva za izpolnitev osnovnih potreb – planeta, na katerem živimo. […] Potrebna je radikalna sprememba, ki ne bo diktirana s strani kapitala.« (2023)

Razmisleke, ki so nastali pri predmetu Razvoj in teorija kritičnega oblikovanja I, dodatno povzamejo besede Barbare Predan in Gaje Mežnarić Osole, ki sta jih v svoji končni semestrski nalogi izpostavila Žiga Dolinar in Ana Topole: »Naj je torej današnje stanje še tako brezupno, se zdi, da se ravno v tem breznu brezupa kažejo možnosti za radikalne, a hkrati ustvarjalne misli, ki bodo vzpostavile distanco do obstoječega in izkazale nujnost premisleka o alternativah življenja« (Predan in Mežnarić Osole 2018). Ne nazadnje je temu namenjena tudi pričujoča monografija.

In da ne bomo – kot bi rekel Nietzsche – predolgo zrli v brezno, si za nekoliko svetlejši konec izposodimo še Žižkov odgovor na vprašanje, kako se bodo po njegovem mnenju začele dogajati korenite spremembe na globalni ravni: »Sem pesimist v smislu, da se približujemo nevarnim časom. Vendar pa sem optimist iz točno istega razloga. Pesimizem pomeni, da se stvari zapletajo. Optimizem pomeni, da so prav to časi, ko je sprememba mogoča« (Žižek 2012).

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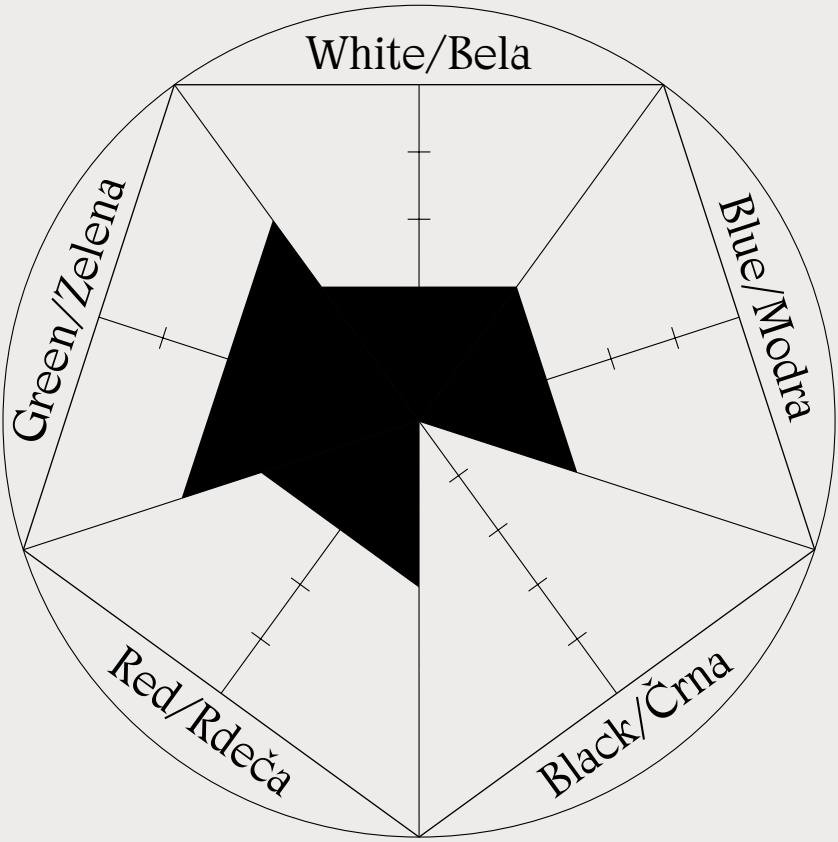
CASE STUDY

2

ŠTUDIJA PRIMERA

Mapping

Mapiranje



WHITE
participation, care

BLUE
awareness-raising, learning

BLACK

RED
change in relationships, empathy

GREEN
plant rights, post-humanism, ecology

BELA
participacija, skrb

MODRA
ozaveščanje, učenje

ČRNA

RDEČA
spreminjanje odnosov, empatija

ZELENA
pravice rastlin, posthumanizem, ekologija

Case Study 2

WHITE BLUE BLACK RED GREEN

ABANDONED PLANTS SANCTUARY

AUTHORS	Eva Jera Hanžek and Anamari Hrup
THEORETICAL MENTOR	Asst. Prof. Dr. Petja Grafenauer
PRACTICAL MENTOR	Prof. Žiga Kariž, MA
STUDY PROGRAMME	Painting
YEAR	2018

Although the domestication of ornamental plants dates back over 2000 years, it was only with the advent of industrialization and capitalism that we entered the so-called "great era of ornamental plant domestication". Ornamental plants have become a commodity, which in Western society has led to a consumerist (use-it-and-throw-it-away) attitude towards plants. However, scientific discoveries of the last two decades have become increasingly incorporated in contemporary ecological and social discourses, revealing a tendency to consider plants as autonomous living beings with certain rights, which requires a substantial change in the mindset of the general public. This raises the question: can contemporary participatory art practices act as catalysts, fostering change in the relationship between humans and plants?

STARTING POINT

Relationship human–plant

Hanžek and Hrup point out that the "great ornamental plants domestication era" did not occur somewhere in the distant past but is happening today. Capitalism generates the surpluses that sustain ornamental gardening, and the continuous introduction of novelties has become a trend that

only a minority of participants in the consumer cycle seem to be aware of and reflect upon its consequences. As a result, in an extremely short period, a multitude of variations and fashionable plants intended exclusively for mass commercial sale has been cultivated, a phenomenon that Hanžek and Hrup define a *biological Disneyland*.

Instrumentalising and exploitative attitude towards everything animate and inanimate in our environment is underpinned in the West by a long history of anthropocentric perceptions of the world (Ramos 2016, 116). These views have been strongly influenced by Aristotle's concept of the hierarchy of souls, according to which plants, incapable of perception and conscious movement, occupy the lowest position (Bakke 2012, 17). This hierarchical concept also holds a political dimension:

> ↪ [A]fter the birth of animals, plants exist for their sake, and [...] the other animals exist for the sake of man, [...] for food, and for the provision of clothing and various instruments. Now if nature makes nothing incomplete, and nothing in vain, the inference must be that she has made all animals for the sake of man." (Aristotle 1943, 65–66)

It is in this division between humans and other animals (and other living beings) that Hanžek and Hrup identify the key argumentation in favour of our presumed spiritual superiority, which is justifying our behaviour towards nature; this attitude is further explained by the dualistic perception of nature and culture as being in eternal binary opposition. Culture, as an array comprising products of humanity, encompasses everything connected with human work and creativity, be it art or language, and stands in contrast to nature, considered as everything that constitutes the non-human world: plants, animals, rocks and forces of nature.

According to Hanžek and Hrup, the belief that humanity is not only separate from nature, but also that aesthetics is associated exclusively with rational thinking—a capability unique to humans—is supported by a distinctly anthropocentric worldview, which, in the light of social reality, ecological crisis, crisis of values and general digitalisation of society, requires a thorough reconsideration. Lawyer Polly Higgins, author of the proposal for a *Universal Declaration of Planetary Rights* to the United Nations, draws parallels between the current global ecological crisis and the post-World War II humanitarian crisis that prompted the adoption of the *Universal Declaration of Human Rights*. As Higgins argues for a transformative shift in personal awareness and general attitude towards

the planet, comparable to the revolution brought about by Copernicus, she simultaneously advocates for a transition from human-centred mechanistic system to a more holistic one and envisions a change in the relationship between humans and plants (Ackroyd and Heather, 2011, 63–71).

CRITICAL EXAMINATION OF THE ISSUE

Plants rights

Discussions in relation to the rights and dignity of plants are also spurred by findings in the fields of neurobiology. According to Bakke, research on plant intelligence, root brains, plant memory and other related topics suggests the existence of previously unrecognised capabilities of plants and dimensions of their functioning. These could be described with terms that some recognise and others vehemently reject; i.e. awareness, sensitivity, active responding to the environment and interacting, ability to communicate and even intelligence, which post-anthropocentric and post-humanistic theories include in their reflections. Nevertheless, human–plant ethics is still a controversial topic, because, as Matthew Hall writes, "contemporary Western action toward plants does not acknowledge their sentient, intelligent, autonomous status" (Bakke 2012, 9).

What emerges in the light of the ecologic crisis and scientific findings is the clear need for establishing a new type of relationship that acknowledges the different nature and otherness of plants (and animals) as well as accepts the ontological fact that they do not exist for human enjoyment and consumption (Marder 2013, 34). Hanžek and Hrup contend that in this context the question of plant rights emerges as one of the most important challenges faced by researchers from the fields of philosophy, ethics and the natural sciences and, potentially, also by the legislative branch of government. Another question on which different authors express different views is whether there will be a general shift in mindset that will provide a sufficiently solid basis for a resulting change in attitude towards plants and the environment, as well as whether there will be a need for legal and legislative changes.

Marder advocates for the necessity of political and economic reorganisation of the system, leading to the "liberation" of plants, whose well-being will not be in contrast with human interests; this change entails shifting the thinking away from efficient systems of food and goods production towards a system based on solidarity and cohabitation with other living beings (Marder 2013, 30–31). An example of legislative change

is the constitution of Ecuador, which was approved by a large majority of voters in 2008. It legally recognised the rights of nature, granting it "the right to integral respect for its existence and for the maintenance and regeneration of its life cycles". In addition, it specifies that all persons have the legal obligation to guarantee the exercise of these rights on behalf of ecosystems.

Conversely, in the article *Plant Autonomy and Human Plant Ethics*, Matthew Hall proposes that the key to addressing the problem lies in shifting attitudes towards plants on a daily, individual level rather than in introducing legislative changes. In this context, he refers to the reflections on morality by the philosopher Zygmunt Bauman, who states that ethics does not stem from adhering to certain rules and laws; rather, an individual's internal moral impulse determines their attitude towards others and other. Moral rules and standards have the opposite effect: they limit the moral impulse and reduce ethical responsibility, ultimately making us less moral instead of more moral (Bauman 2007). Hall suggests it is premature to promote legislation changes in this field; instead, we first need to focus on our everyday, ingrained and backgrounded behaviour toward plants that threatens many species of plants and animals (Hall 2009, 170–171).

RESPONSE TO THE IDENTIFIED ISSUES

Interspecies transition, co-existence and connection

In 2008, a group of researchers and scientists from the fields of biology, biotechnology, agriculture, practical philosophy and theology produced the *Rheinauer Theses on the Rights of Plants*, which aim to provide guidance on navigating ethical issues in the human–plant relationship. While acknowledging the differentness that may always remain beyond our full understanding, the document seeks to better define plants and protect their uniqueness by formulating a set of rights and theses, which require the capability to perceive the plant's uniqueness, approaching it respectfully, and exclude treating plants as objects for use without limits (Blauen Institut 2008).

But what exactly does this mean and how do we establish and maintain respectfulness in human–plant relations? "Caring means becoming subject to the unsettling obligation of curiosity, which requires knowing

FIG. 2

APS, *Contract on plant adoption n. 006*, 2016, mixed technique on paper, 21 × 29.7 cm, APS archive.

ZZR, *Pogodba o posvojitvi rastline št. 006*, 2016, mešana tehnika na papir, 21 x 29,7 cm, arhiv ZRR.

FIG. 3

APS, *Adopt a Piece of Your Own Lawn*, 2016, event, GalerijaGallery, Ljubljana.
ZZR, *Posvojite kos čisto svoje zelenice*, 2016, dogodek, GalerijaGallery, Ljubljana.

FIG. 4

APS, *Autumn refuge at MGLC*, 2016, installation, International Centre of Graphic Arts (MGLC), Ljubljana.

ZZR, *Jesensko zatočišče v MGLC*, 2016, instalacija, MGLC, Ljubljana.

FIG. 5

APS, *Green Fingers on a Green Passe-partout*, 2018, workshop, Museum of Contemporary Art Metelkova (MSUM), Ljubljana.

ZZR, *Zeleni prstki na zelenem paspartuju*, 2018, delavnica, MSUM, Ljubljana.

more at the end of the day than at the beginning (Haraway 2008, 36). In this regard, Hrup and Hanžek identify contemporary participatory art practices as possible methodologies for discovering the potential for inter-species transition, co-existence and connection. In open, interdisciplinary practices, the authors recognise the potential for promoting sympathy, empathy and identification with "other" as a means of supporting closer connections and establishing relationships with the non-human other. By re-examining eco-socio-political and economic paradigms, such practices offer an alternative to the authoritarian and unidirectional delivery of knowledge, replacing it with active empowerment by means of collective consciousness.

Hrup and Hanžek put these ideas to the test in the project *Abandoned Plants Sanctuary* (APS).[1] The long-standing interdisciplinary project combines art and ecology, and through organising actions, events and exhibitions engages with the local art scene and social space. At the time of writing the master's thesis, the project was centred around a fictitious non-profit organization dedicated to supporting plants (particularly ornamental potted plants) in urban settings. Each plant that comes to the sanctuary is treated as an autonomous being with its own needs that must be met for it to live a flourishing and happy life. By signing the adoption contract, the new caretaker symbolically commits to caring for the plant by providing the right conditions for its healthy growth and development. (FIG. 2–4)

By adopting the structure of a pet shelter, Hanžek and Hrup conceive a "world of play", which, despite being only slightly different from the familiar existing forms, creatively generates a completely new experience. This invites individuals to participate, deviating from their daily routines and transcending the conventional patterns of behaviour; in this way, they acquire a personal experience which offers them the opportunity to perceive reality from a different perspective. This raises questions about the relationship between humans and plants, ethics, environmental protection and anthropocentric models of existence. However, the authors do not provide answers; instead, these emerge spontaneously during events, happenings, workshops and public debates through participation of the public.

①

Since 2016, the Abandoned Plants Sanctuary has been operating as a cultural association. As of writing this publication, the project has been in existence and active for almost eight years. At the end of 2020, after being hosted for two years at Teren Experimental Space, the sanctuary moved to the Krater Creative Lab, where it operates as an affiliated independent project (krater.si).

One such event, organized under the auspices of APS and held in collaboration with GalerijaGallery, was titled *Adopt a Piece of Your Own Lawn*. During the exhibition, the Sanctuary collaborated with the gallery on the maintenance of the 12 m² section of lawn displayed at the exhibition, which had to be tended, watered and removed after the exhibition. APS thus organised a closing event at which visitors could "save a piece of lawn", giving it a new lease of life. The event featured a picnic on the lawn, which grew smaller and smaller over time as the artists gradually placed the pieces of lawn into boxes accompanied by an adoption contract. Besides the opportunity to adopt a piece of lawn, visitors could also view an exhibition displaying prints of abandoned plants and a drawing of the lawn itself. (FIG. 3)

Drawing is the unifying element of most of APS's activities, which utilise plant drawing as one of the main models through which artists and participants can communicate with plants in an unconventional manner. Drawing, traditionally considered the most direct expression of the artist, is in this case turned into a medium, a means of establishing contact with the plant. Through attention comparable to reistic observation and as such focused solely on the physical appearance of the plant, i.e. on tracing the contours of its leaves or flowers, twigs, dried leaves and similar, the participant connects with the essence of the plant, which would be unattainable by the rational mind. In workshops such as *Green Fingers on a Green Passe-partout* and *Green Lessons*, participants establish new relationships with plants by drawing and active observation, which is furthermore supported by the simple tasks of plant care. (FIG. 5)

The practice of the *Abandoned Plants Sanctuary* actively blurs the boundaries between art, ecology, pedagogical processes and everyday life. Instead of focusing on the final product, it prioritizes the process of creating a work of art, which by means of its participatory nature enables change in both the individual and the environment, and promotes the establishment of new relationships. APS activity prompts us to consider what new and different conditions and circumstances are proposing and, by focusing on the plant as an autonomous being, encourages us to reflect on the positioning of nature as an equal and key identity of social activity.

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Študija primera 2 BELA MODRA ČRNA RDEČA ZELENA

ZAVETIŠČE ZA ZAVRŽENE RASTLINE

AVTORICI	Eva Jera Hanžek in Anamari Hrup
MENTORICA TEORETIČNEGA DELA	doc. dr. Petja Grafenauer
MENTOR PRAKTIČNEGA DELA	prof. mag. Žiga Karič
ŠTUDIJSKA SMER	Slikarstvo
LETO	2018

Kljub 2000-letni zgodovini udomačevanja okrasnih rastlin smo šele s pojavom industrializacije in kapitalizma vstopili v t. i. veliko dobo udomačevanja okrasnih rastlin. Te so postale komoditeta, kar je v zahodni družbi povzročilo potrošniški (uporabi in zavrzi) odnos do rastlin. A znanstvena odkritja zadnjih dveh desetletij so v sodobne ekološke in družbene diskurze privedla težnje po upoštevanju rastlin kot avtonomnih živih bitij z določenimi pravicami, kar zahteva preskok v miselnosti obče javnosti. Ob tem se poraja vprašanje, ali lahko sodobne participatorne umetniške prakse delujejo kot katalizatorji sprememb v odnosu med človekom in rastlino?

IZHODIŠČE

Odnos med človekom in rastlino

Hanžek in Hrup izpostavita, da se t. i. velika doba udomačevanja okrasnih rastlin ni zgodila nekje v daljni zgodovini, temveč poteka ravno zdaj. Kapitalizem ustvarja presežke, ki podpirajo okrasno vrtnarjenje, nenehno pojavljanje novosti je postal trend, za katerega se zdi, da se ga zavedajo in njegove posledice kažejo le redki od udeležencev potrošniškega krogotoka. Posledično smo v ekstremno kratkem času vzgojili množice variacij in modnih rastlin, ki so namenjene zgolj množični prodaji

v komercialne namene, pojavu, ki ga Hanžek in Hrup opredelita kot »biološki Disneyland«.

Naš instrumentalizirajoči in izkoriščevalski odnos do vsega živega in neživega okoli nas je v zahodnem svetu podprt z dolgo zgodovino antropocentričnega dojemanja sveta (Ramos 2016, 116). Tega je močno zaznamoval Aristotelov koncept hierarhije duš, po katerem rastline, ki so nezmožne zaznavanja in zavestnega premikanja, zavzemajo najnižje mesto (Bakke 2012, 17). Ta hierarhični koncept ima seveda tudi politično dimenzijo:

> ↪ »Ko se rastline razvijejo, obstajajo zaradi živali in druge živali obstajajo zaradi človeka: [...] zaradi hrane in drugih življenjskih pripomočkov, da iz njih pridobivamo obleko in druga orodja. Če torej narava ničesar ne počne niti nesmotrno niti zaman, je vse živali nujno naredila zaradi ljudi.« (Aristoteles 2010, 136)

Ravno v tej ločnici med človekom in drugimi živalmi (in preostalimi živimi bitji) Hanžek in Hrup prepoznata ključno utemeljitev naše duhovne vzvišenosti, ki upravičuje naše ravnanje do narave ter je še nadaljnjo podprto z dualističnim dojemanjem narave in kulture kot večnim binarnim nasprotjem. Kultura, kot nabor produktov človeka, zavzema vse, kar je povezano z njegovim delom in ustvarjanjem, naj bo to umetnost ali jezik, in je v nasprotju z naravo, ki je obravnavana kot vse, kar sestavlja nečloveški svet: rastline, živali, kamenje, naravne sile.

Hanžek in Hrup poudarjata, da pogled, da je človek ločen od narave in še dlje ter da je estetika povezana le z racionalnim razmišljanjem, ki ga je zmožen samo človek, podpira izrazito antropocentričen pogled na svet, ki pa zaradi družbene realnosti, ekološke krize, krize vrednot in splošne digitalizacije družbe zahteva temeljit premislek. Pravnica Polly Higgins, avtorica predloga o *Splošni deklaraciji planetarnih pravic Združenim narodom*, postavlja vzporednice med trenutno globalno ekološko krizo in humanitarno krizo po drugi svetovni vojni, ki je prinesla *Splošno deklaracijo o človekovih pravicah*. Higgins pravi, da bo potreben obrat v osebnem zavedanju in globalnem odnosu do planeta, primerljivem tistemu iz časov Kopernika. Pri tem zagovarja prehod iz mehanicistično antropocentričnega sistema v holistično ekološkega in predvidi spremenjen odnos med človekom in rastlino (Ackroyd in Heather 2011, 63–71).

Pravice rastlin

Diskusije okoli vprašanj o pravicah in dostojanstvu rastlin odpirajo tudi dognanja v nevrobiologiji. Kot trdi Bakke, raziskave rastlinske inteligence, koreninskih možganov, spomina in drugih sorodnih tem nakazujejo obstoj do zdaj nepriznanih zmožnosti in razsežnosti delovanja rastlin. Te bi lahko opisali s pojmi, ki jih nekateri priznavajo, drugi pa vehementno zavračajo; zavedanje, senzibiliteta, aktivno odzivanje na okolje in delovanje, sposobnost komunikacije in celo inteligenca, ki jih postantropocentrične in posthumanistične teorije vključujejo v svoje razmisleke. Kljub vsemu je etika v odnosu med človekom in rastlino še vedno kontroverzna tema, saj, kot zapiše Matthew Hall, »zahodno ravnanje z rastlinami ne priznava njihovega čutečega, inteligentnega in avtonomnega statusa« (Bakke 2012, 9).

V luči ekološke krize in znanstvenih dognanj postane jasna potreba po vzpostavitvi drugačnih odnosov, ki priznavajo drugačnost in drugost rastlin (in živali) ter sprejemajo ontološko dejstvo, da te ne obstajajo zaradi človeškega užitka in potreb (Marder 2013, 34). Hanžek in Hrup menita, da postane vprašanje pravic rastlin v tem kontekstu eden od najpomembnejših izzivov, s katerimi se srečujejo raziskovalci v filozofiji, etiki, naravoslovnih znanostih ter potencialno tudi zakonodajni veji oblasti. Ali se bo zgodila splošna sprememba v miselnosti, ki bo dovolj dobra podlaga za posledično drugačen odnos do rastlin in okolja, ali bodo potrebne pravne in zakonodajne spremembe, pa je drugo vprašanje, na katero imajo različni avtorji različne poglede.

Marder zagovarja nujnost politične in ekonomske reorganizacije sistema, ki bo privedla do »osvoboditve« rastlin, katerih dobrobit ne bo v nasprotju s človekovimi potrebami; torej prehod od miselnosti, kako vzpostaviti učinkovit sistem produkcije hrane in dobrin, k sistemu, ki bo temeljil na solidarnosti in sožitju z drugimi živimi bitji (Marder 2013, 30–31). Eden od primerov zakonodajnih sprememb je ustava, ki so jo v Ekvadorju z veliko večino izglasovali leta 2008. Ta pravno priznava pravice narave in ji dodeljuje »pravico do obstoja, ohranjanja in obnavljanja svojih življenjskih ciklov«, pri čemer smo ljudje pravno zavezani, da te pravice v imenu ekosistemov tudi uveljavljamo (Constitute Project 2021).

Po drugi strani pa Matthew Hall v članku *Plant Autonomy and Human Plant Ethics* vidi glavno rešitev problema v spremembi odnosa do rastlin

na vsakodnevni, individualni ravni, in ne v spremembi zakonodaje. Pri tem se sklicuje na razmišljanja o moralnosti filozofa Zygmunta Baumana, ki pravi, da etika ne izhaja iz spoštovanja določenih pravil in zakonov, temveč je posameznikov notranji moralni impulz tisti, ki določa njen/njegov odnos do drugih in drugega. Moralna pravila in vodila imajo, po Baumanu, ravno nasproten učinek: omejujejo ta moralni impulz in zmanjšujejo etično odgovornost ter nas posledično delajo manj namesto bolj moralne (Bauman 2016). Hall trdi, da je še prezgodaj za zakonodajne spremembe na tem področju, najprej se moramo osredotočiti na naš vsakdanji zakoreninjeni odnos do rastlin, ki posledično vodi do ogrožanja mnogih vrst rastlin in živali (Hall 2009, 170–171).

ODGOVOR NA PREPOZNANO

Medvrstno prehajanje, postajanje in zbliževanje

Leta 2008 je skupina raziskovalcev in znanstvenikov s področja biologije, biotehnologije, kmetijstva, praktične filozofije in teologija pripravila dokument *Rheinauer teze o pravicah rastlin*, katerega namen je pomoč pri navigiranju etičnih vprašanj v odnosu med človekom in rastlino. Dokument ob priznavanju drugačnosti, ki nam bo verjetno vedno ostala izven dosega razumevanja, poskusi bolje definirati rastline in zaščititi njihovo unikatnost s formuliranjem tez in pravic. Te zahtevajo sposobnost zaznavanja edinstvenosti rastline in njeno spoštljivo obravnavanje ter izključujejo ravnanje z rastlinami samo kot s predmeti brez kakršnihkoli omejitev (Blauen Institut 2008).

Vendar – kaj točno to pomeni in kako vzpostaviti in ohraniti spoštovanje v človeško-rastlinskih odnosih? »Skrb, negovanje, ki izhaja iz vznemirljive obveze radovednosti in poznati in vedeti več na koncu vsakega dneva, je mogoče odgovor« (Haraway 2008, 36). V tem pogledu Hrup in Hanžek identificirata sodobne participatorne umetniške prakse kot možne metodologije za odkrivanje zmožnosti medvrstnih prehajanj, postajanj in zbliževanj. V odprtih, interdisciplinarnih praksah avtorici vidita potencial spodbujanja simpatije in vživljanja, identifikacije z »drugim«, ki nas približujejo in vzpostavljajo razmerja z nečloveškim drugim. Takšne prakse se s preizpraševanjem eko-družbenopolitičnih in ekonomskih paradigem ponudijo kot alternativa avtoritarnemu enosmernemu podajanju znanja in ga nadomestijo z aktivnim opolnomočenjem prek kolektivne zavesti.

Hrup in Hanžek te ideje postavita pod preizkušnjo v projektu Zavetišče za zavržene rastline (ZZR).[1] Dolgoletni interdisciplinarni projekt povezuje umetnost in ekologijo ter s svojimi akcijami, dogodki in razstavami deluje v lokalnem umetnostnem in družbenem prostoru. V osrčju projekta je bila med nastajanjem magistrske naloge fiktivna neprofitna organizacija, ki se zavzema za pomoč rastlinam (predvsem okrasnim lončnicam) v urbanem okolju. Vsaka rastlina, ki pride v zavetišče, je obravnavana kot avtonomno bitje z lastnimi potrebami, ki morajo biti izpolnjene za njeno uspešno in srečno življenje. Ob podpisu posvojitvene pogodbe se nov skrbnik simbolično zaveže, da bo za rastlino skrbel tako, da ji bo zagotovil primerne razmere za uspešno rast in razvoj. (FIG. 2–4)

Skozi asimilacijo strukture zavetišča za domače živali Hanžek in Hrup ustvarita »svet igre«, ki se le rahlo razlikuje od poznanih oblik obstoja, a igrivo ustvari povsem novo izkušnjo. Ta povabi udeležence, da s participacijo odstopijo od vsakodnevne rutine in gredo onkraj konvencionalnih vzorcev obnašanja ter skozi lastno izkušnjo dobijo možnost drugačnega pogleda na realnost. Pri tem se odpirajo vprašanja o odnosu med človekom in rastlino, etičnosti, skrbi za okolje ter antropocentričnih modelih bivanja, a avtorici zanje ne ponujata odgovorov – ti se spontano oblikujejo ob dogodkih, *happeningih*, delavnicah in javnih razpravah, skozi participacijo javnosti.

Eden izmed takšnih dogodkov, ki so nastali pod okriljem ZZR, je *Posvojite kos čisto svoje zelenice* v sodelovanju z GalerijaGallery. Zavetišče je med razstavo sodelovalo z galerijo pri vzdrževanju 12 kvadratnih metrov velikega kosa zelenice, razstavljenega na razstavi. Zelenico je bilo treba negovati in zalivati, po razstavi pa odstraniti. Tako je ZZR organiziral zatvoritveni dogodek, na katerem so obiskovalci lahko »rešili kos zelenice« in ji s tem omogočili nadaljnje življenje. Na dogodku je potekal piknik na zelenici, ki je sčasoma postajala čedalje manjša, saj sta umetnici kose zelenice postopoma pospravljali v škatle, opremljene s posvojitveno pogodbo. Poleg posvojitve kosa zelenica so si obiskovalci lahko ogledali razstavljene grafike zavrženih rastlin in risbo dotične zelenice. (FIG. 3)

Risba povezuje večino dejavnosti ZZR, ki uporabi dejavnost risanja rastlin kot enega izmed glavnih modelov, prek katerega lahko tako umetnici kot tudi udeleženci nekonvencionalno vzpostavijo komunikacijo

①

Zavetišče za zavržene rastline od leta 2016 deluje kot kulturno društvo. V času nastanka pričujoče publikacije torej projekt obstaja in aktivno deluje že skoraj osem let. Konec leta 2020 se je po dveh letih gostovanja na Eksperimentalnem prostoru Teren preselil v ustvarjalni laboratorij Krater, kjer deluje kot pridružen samostojni projekt (krater.si).

z rastlinami. Risba, ki je, tradicionalno gledano, najbolj neposreden izraz umetnice ali umetnika, se tu spremeni v medij, sredstvo za doseganje stika z rastlino. Prek pozornosti, ki je sorodna reistični in torej usmerjena zgolj na pojavnost rastline, sledenje konturam njenih listov ali cvetov, vejic, posušenih listov in podobno, se udeleženec poveže z esenco rastline, ki je z racionalnim umom ni možno doseči. Udeleženci na delavnicah, kot sta Zeleni prstki na zelenem paspartuju in Zelene urice, tako skozi risbo in aktivno opazovanje vzpostavljajo nove odnose z rastlinami, še dodatno podprtimi s preprostimi opravili skrbi za rastline. (FIG. 5)

Praksa Zavetišča za zavržene rastline aktivno zabrisuje ločnice med umetnostjo, ekologijo, pedagoškimi procesi in vsakdanjim življenjem. Namesto končnega dela prioritizira proces nastanka umetniškega dela, ki s svojo participatorno naravno omogoča spremembe v posamezniku in okolju, ter spodbuja vzpostavljanje novih odnosov. S svojim delom ZZR pomaga razmišljati, kaj nam predlagajo novi, drugačni pogoji in okoliščine, ter nas z osredotočenostjo na rastlino kot avtonomnim bitjem spodbuja k razmisleku o pozicioniranju narave kot enakovredne in ključne identitete družbene dejavnosti.

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MAGISTRSKO DELO

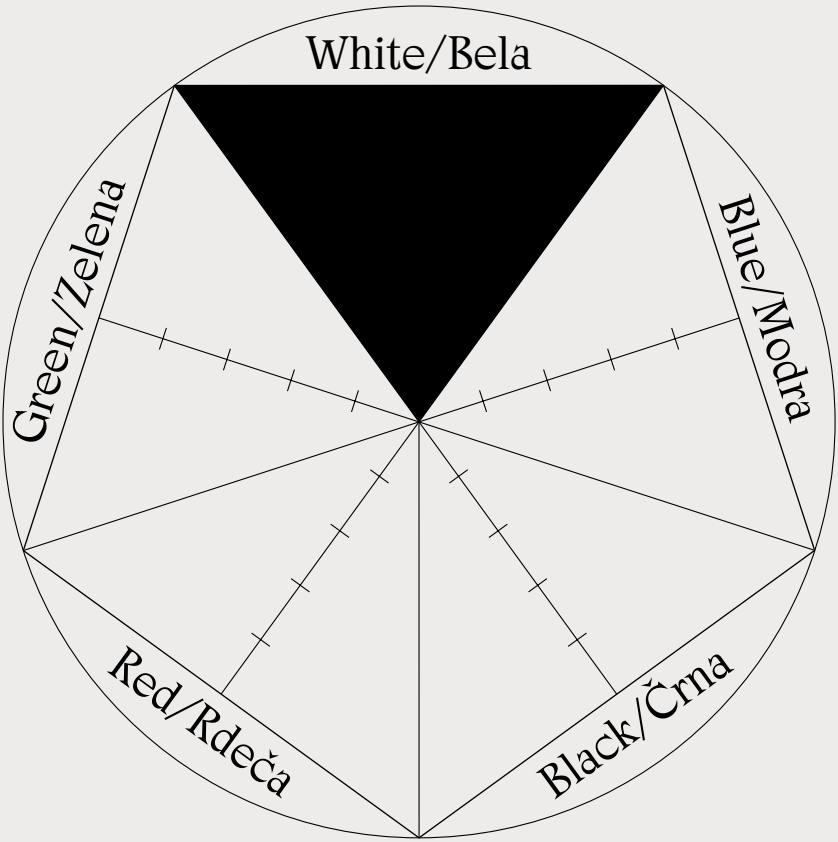
CASE STUDY

3

ŠTUDIJA PRIMERA

Mapping

Mapiranje



WHITE

health, community, planning, participation, security, solidarity, integration of minorities, equality

BLUE

BLACK

RED

GREEN

BELA

zdravje, skupnost, načrtovanje, participacija, varnost, solidarnost, vključevanje manjšin, enakopravnost

MODRA

ČRNA

RDEČA

ZELENA

Case Study 3

WHITE BLUE BLACK RED GREEN

SPENDING TIME OUTSIDE AS A PART OF HUMAN DEVELOPMENT

AUTHOR	Nina Ninković Gašić
MENTOR	Prof. Boštjan Botas Kenda
CO-MENTOR	Asst. Prof. Emil Kozole
STUDY PROGRAMME AND COURSE	Visual Communication Design, Graphic Design
YEAR	2022

For years, cities have been losing their urban identity, green spaces, parks and other public spaces to accelerated construction of combined commercial-residential buildings. This process has been making cities less and less liveable. The current project showcases various ways of empowering children as important agents of change in urban environments.

STARTING POINT

The inactive urban lifestyle

Since the mid-20th century, the global population has more than tripled, from 2.5 billion in 1950 to nearly 7.9 billion in 2021 (UN 2022), which spurred a worldwide and rapidly growing trend of urbanisation. Today, urban centres are home to approximately 55% of the world's population, and the United Nations estimates that this figure will reach 68% in 2050 (UN 2018). These phenomena will have far-reaching effects on our quality of life, health and living environment.

In her master's thesis, Ninković Gašić shows that urban environments are designed according to human needs, primarily for protection against elemental forces and external environmental factors, and in line with different patterns of behaviour, ways of working and lifestyles. In comparison with rural environments, they offer more possibilities in terms of the development of personal potential—such as improved social life, education and employment opportunities. The author, accordingly, argues that cities are inextricably linked to humans, as we are the ones who represent, create, shape and change them. Human development is also inextricably linked to its environment, both in the social and spatial sense. How we communicate, move and spend our leisure time depends to a large extent on our surroundings and the environment in which we live.

Living in an urban environment, however, also brings many challenges. According to Tim Gill, former director of the Children's Play Council, the cities we have built in the last 40 years are not sustainable, as they do not promote healthy habits. Poor planning, meanwhile, keeps many away from nature, parks, shops, schools and libraries (2021, 6). In its action plan on physical activity, the World Health Organization (WHO) points out that many rapidly growing cities are now burdened with heavy traffic and cramped neighbourhoods and high-rise housing projects, leading to negative effects such as social alienation, noise and violence. All of this, of course, has a negative impact on people's physical and mental health and well-being (WHO 2022). As a result, many western countries struggle with increased levels of physical inactivity—the WHO notes that due to urbanisation, increased use of technology, and changes in transport patterns and cultural values, the proportion of physically inactive people in the population of many countries has reached 70%. In some, this figure is higher still (*ibid.*).

The scale of the health issues resulting from the modern, sedentary, urban living has become so great that sedentary lifestyle could now be considered an epidemic. What makes this all the more worrying is that, in practice, this means that one in four adults and three in four adolescents—aged 11 to 17 years— worldwide currently do not meet the global recommendations regarding physical activity made by the WHO (WHO 2018). Moreover, WHO identifies physical inactivity as the fourth leading risk factor for global mortality. In the US, where 82% of the population lives in urban areas, past projections of human life expectancy now seem falsely optimistic. This is because children are now expected to live shorter and less healthy lives than their parents (Xu et al. 2015, 1–5).

CRITICAL EXAMINATION OF THE ISSUE

The child as a stranger in their home environment

Historically, urban planning has failed to adequately take into account vulnerable groups, including children, even though the latter tend to be the ones most affected by poor planning. This is especially the case for those in low-income neighbourhoods. Children are excluded from decisions about the environment they will grow up in, even though their needs should be at the centre of attention. This was recognised in 2016 at the

FIG. 6

A workshop in the Dragaš drawing school, 2022, author's archive.
Delavnica v šoli risanja Dragaš, 2022, arhiv avtorice.

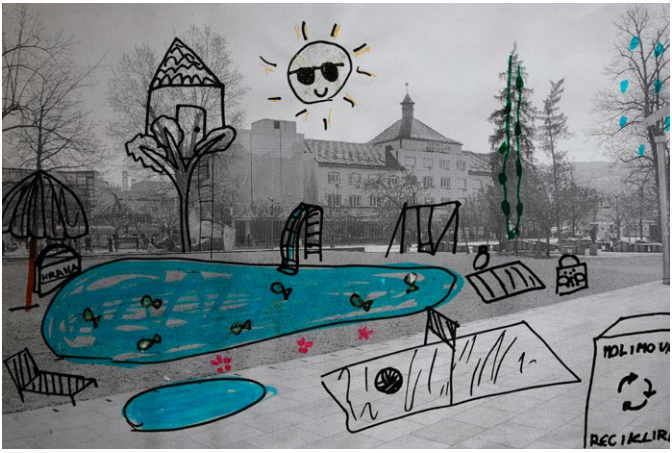


FIG. 7

A child's drawing created at the workshop in the Dragaš drawing school, 2022, author's archive.
Otroška risba, nastala na delavnici v šoli risanja Dragaš, 2022, arhiv avtorice.

FIG. 8

A child's drawing created at the SKC Kids workshop, 2022, author's archive.
Otroška risba, nastala na delavnici SKC Kids, 2022, arhiv avtorice.

FIG. 9

Nina Ninković Gašić, *Greva ven!* [*Let's Go Outside!*], 2022, author's archive.
Nina Ninković Gašić, *Greva ven!*, 2022, arhiv avtorice.

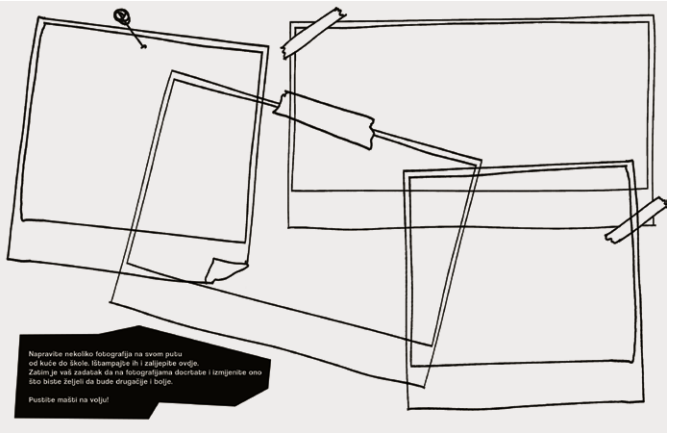


FIG. 10–11

Nina Ninković Gašić, *Greva ven!* [*Let's Go Outside!*], 2022, author's archive.
Nina Ninković Gašić, *Greva ven!*, 2022, arhiv avtorice.

United Nations *Habitat III* Conference on Housing and Sustainable Urban Development, where participants unanimously agreed that cities must provide equal rights and opportunities for people of all ages (Habitat III 2021).

In his handbook *Shaping Urbanisation for Children*, Jens Aerts points out that without properly planning for children, the urban environment becomes dysfunctional and fragmented, which impacts the development of future generations (Aerts 2018, 21). On the other hand, as Ninković Gašić notes, cities whose streets and other amenities and facilities are developed with the needs of children and families in mind better serve everyone who uses them, including older adults and people with disabilities, as well as young people of working age. Child-friendly urban planning responds to the central argument that cities should be good places for children to grow up in, with a healthy environment for living and playing. One of the aims of this planning approach is therefore to broaden our current understanding of what planning for children means. The goal should be an inclusive approach that includes and respects all aspects of a child's life, not just play.

There are numerous studies and statistics showing that children today play and socialise outdoors much less and are under much more parental supervision than previous generations. In 2017, *The Guardian* published a study showing that 75% of British children spend less time outdoors than prisoners who spend at least an hour a day outdoors (Carrington 2017). The study *Planned housing environments and children's outdoor play: Is child-friendliness possible?* by the authors Rashed Bhuyan and Tracey Skelton, as many as 72% of parents said that when they were their age, they independently played and engaged in physical activity outdoors more than their children do nowadays.

This is not a new trend, however; the authors of the book *One False Move: A Study of Children's Independent Mobility* note that in the various urban environments in the west this trend has been observed for several decades (Hillman et al. 1990, 106–112). Particularly notable is the decline in children's so-called independent mobility, meaning the freedom of children to move and play in their local environment unaccompanied by adults. Many factors influence independent mobility, including the age and gender of children, the proximity and accessibility of favoured destinations, the habits and attitudes of the parents, and their perception of safety (Shaw 2015, 5–50). The aforementioned study by Hillman et al. also showed that in England, in the period between 1971 and 1990, the independent mobility of children, specifically walking and biking to school, already declined from 80% to a worrisome 9%.

The underlying causes that have contributed to this situation, reinforcing the logic of containment, are many and mainly a side effect of wider economic, cultural and social changes (Hillman et al. 1990, 23). The latter is further elaborated by Tim Gill, who cites the growth in road traffic, parents' longer working hours, the decline in the quantity and quality of public space, and the growth of indoor leisure activities as key reasons for change. All of this, in Gill's view, has further coincided with, and arguably been the trigger for, increasingly risk-averse attitudes—what Frank Furedi has called a culture of fear: "a generalised and insidious anxiety about safety that has found expression in fears for children even though they are statistically safer than at any point in human history" (Gill 2007, 14). Ninković Gašić sees such practices as counterproductive for the child, as they make it harder for them to integrate into their local communities, which can lead to apathy towards their surroundings.

Ninković Gašić adds that this trend can result in a deterioration of children's psycho-physical state and mutual social relations, as well as erosion of healthy attitudes towards nature. Derr et al. further point out that greenery around homes, schools and nearby parks is particularly important for children, as it is associated with increased physical activity, a reduction in stress, depression and aggression, better concentration and impulse control, better academic performance, better coping strategies, more imaginative and socially cooperative play, and a stronger sense of connectedness and care for nature (2018, 15).

The environment we live in must therefore be seen as the key determinant of children's health, behaviour and development (WHO 2022) and positive action must be taken to build a better urban infrastructure. Ninković Gašić points out that global change hinges on the younger generations, who represent the future and must therefore be involved in it If children do not engage with nature while growing up, they are unlikely to ever understand the human dependence on the natural world (Moore 2014, 7). The environmentally friendly habits and relationship with nature that children develop in childhood will become their baseline, something that will shape their future.

RESPONSE TO THE IDENTIFIED ISSUES

The child—an active participant in the urban environment

For Nina Ninković Gašić, the key to a different approach to designing urban environments is in the premise that children should be empowered to create their own environment. When we involve children in the design of public spaces, it is important that we do not regard them as future citizens, but as equal citizens who exist here and now. Many children's rights advocates[1] believe that children and adolescents are not just people who *will eventually become* adults, but that they are a unique group who can already make a significant contribution to society just as they are. Urban renewal is, of course, a long and complex process, and big changes at city or national level often require a lot of time, resources and political effort. Yet, as Derr et al. write, when it comes to changing our current unsustainable trajectory, knowledge, political will and efforts to change citizens' behaviour are just as important as clean technology and resource efficiency (Derr et al. 2018, 31).

But changes can also be made at the community and individual level, as Ninković Gašić points out. Small changes like these, which can happen immediately, without waiting for procedures, budgets or performance evaluations, are important first steps that can take us towards new ideas, illustrate possibilities and pave the way for potential major projects that require larger investments.

↪ "Strategies such as 'pedibus' initiatives can encourage children to walk to school safely, and the creation of urban gardens can provide both healthy foods and venues for social interaction and physical activity. Many of these measures to improve environmental health also help people to be more physically active and eat a healthier diet, so reducing obesity and diseases like diabetes and heart disease." (WHO 2018)

Ninković Gašić stresses the vital importance of children's participation in such initiatives, as this is the only way to democratise the city.

[1] See, for instance, Movshovich 2014 and UN 2021.

By including children, the mindset that has led to cities being designed almost exclusively around the needs of its adult, productive population changes, giving a voice to those who previously went unheard in the city planning process. Children have similar needs as some other categories of citizens, such as the elderly and people with disabilities. The author asserts that to foster urban development, creative ideas are needed—children's ideas. While it may not always be possible to implement their ideas immediately, it is the adults' responsibility to recognise the potential of children's innovations. She also considers the participation of children to have a strong educational aspect, as it helps to create a sense of community, thereby helping children to experience the city as their own.

To figure out how to improve urban design to meet children's needs, we first need to understand what children and families want from their cities (Buss et al. 2014, 24). In this spirit, Ninković Gašić organised two workshops in Banja Luka. In collaboration with the Dragaš drawing school, under the guidance of Renato Rakić, the workshop participants freely created drawings on the following subjects: mesto po mojem (the city as I would build it), prostor za igro (space to play) and kaj bi rad spremenil v svojem mestu (what I would like to change in my city). In the informal context of the workshop, the children were able to express their thoughts and feelings. Supporting them in this was drawing, developing not only their motor and drawing skills, but also their awareness of their surroundings, both visual and conceptual (Hope 2008, 23). **FIG. 6–7**

In the second workshop, which was organised together with the Sportsko kreativni centar Kids (SKC Kids—Kids Sports and Creative Centre), led by Mirna Vujanović and Nataša Simić, the participants were immersed in an urban environment. On walks from the school to the nearest park and back, the children pointed out what they liked about the environment and what they would change. During the walk, Ninković Gašić took photographs of the locations they passed by and talked about. She then printed the photographs, slightly lightened, on a larger format. The children were then given these photographs so they could draw their ideas, freely expressing what they wished to change or add. **FIG. 8**

Making use of the experience gained at the workshops, Ninković Gašić created a tool that encourages children to interact meaningfully with their environment, to get to know it better, identify with it and reshape it according to their actual needs. The result is a handbook entitled *Greva ven!* [*Let's Go Outside!*], which is intended to help children take their first steps towards involvement in the improvement of the urban environment. The handbook aims to help children develop—step by step and

day by day—the habit of observing their surroundings in order to broaden their knowledge and perspectives. It spurs creativity, provides them with important information about their environment and their rights and responsibilities, and encourages them as they take the first steps towards building a relationship with design, architecture and urbanism. With the help of a creative task, children are encouraged to take action in their city and in doing so discover that they can be effective agents of change. While the handbook guides them through the tasks, the emphasis is on free play and exploration. The publication does not steer children towards predetermined behaviour, nor does it offer suggestions on what to do or how to play, but rather on how to spend more time outside, play more, pay attention to their surroundings, and in doing so, become more free. It encourages children to write, draw, be active and engage in dialogue, and is intended for long-term use in their free time.

The practices employed by Ninković Gašić encourage a spontaneous and free approach that puts children's needs first. Through problem-solving, they encourage self-expression, imagination and creative thinking. Through dialogue, play and art, the children are taught important lessons about their environment, taking care of oneself and others, as well as how to approach problems from various perspectives. Such practices produce good results in the development of the environment in which children grow up, and can help children develop self-confidence and the ability to express their wishes and needs. (FIG. 9–11)

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Študija primera 3 BELA MODRA ČRNA RDEČA ZELENA

PREŽIVLJANJE ČASA ZUNAJ, KOT DEL ČLOVEŠKEGA RAZVOJA

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LETO	2022

V mestih smo že leta priča pospešeni gradnji poslovno-stanovanjskih objektov na račun mestne identitete, zelenih površin, parkov in drugih javnih površin. Mesta zaradi tega postajajo vedno manj prijazna za življenje. Pričujoč projekt predstavi načine opolnomočenja otrok kot pomembnih nosilcev sprememb v urbanih okoljih.

IZHODIŠČE

Neaktivno urbano življenje

Od sredine 20. stoletja do danes se je število svetovnega prebivalstva več kot potrojilo – z 2,5 milijarde leta 1950 na skoraj 7,9 milijarde leta 2021 (UN 2022), kar je povzročilo hitro rastoč trend urbanizacije po vsem svetu. Danes v urbanih središčih živi približno 55 % svetovnega prebivalstva, po ocenah Združenih narodov pa naj bi se ta številka do leta 2050 povzpela do 68 % (UN 2018). Ti pojavi bodo imeli daljnosežne učinke na kakovost našega življenja, zdravja in življenjskega okolja.

Ninković Gašić v svojem magistrskem delu oriše, da so urbana okolja oblikovana v skladu s človekovimi potrebami, prvenstveno za zaščito pred naravnimi silami in zunanjimi dejavniki okolice, ter z različnimi vzorci obnašanja, načini dela in življenja. V primerjavi z ruralnimi okolji ponujajo več možnosti pri razvoju osebnih potencialov – kot so možnost boljšega socialnega življenja, izobraževanje in zaposlitev. Avtorica zatrdi, da so mesta torej neločljivo povezana s človekom, saj smo prav mi tisti, ki ga predstavljamo, tvorimo, oblikujemo in spreminjamo. Prav tako pa je človekov razvoj neločljivo povezan z njegovim okoljem, tako družbenim kot prostorskim. Način, na katerega komuniciramo, se gibljemo, preživljamo prosti čas, je precej odvisen od naše okolice in okolja, v katerem živimo.

Toda življenje v urbanem okolju prinaša tudi številne izzive. Po Timu Gillu, nekdanjem direktorju Sveta za otroško igro, mesta, ki smo jih

ustvarili v zadnjih 40 letih, niso trajnostna, saj ne spodbujajo zdravih navad, hkrati pa je zaradi slabega načrtovanja veliko ljudi oddaljenih od narave, parkov, trgovin, šol in knjižnic (2021, 6). Svetovna zdravstvena organizacija (SZO) v akcijskem načrtu za promocijo fizične aktivnosti izpostavlja, da so danes številna hitro rastoča mesta obremenjena z gostim prometom, utesnjenimi četrtmi in blokovskimi naselji, kar lahko povzroči negativne posledice, kot so socialna odtujenost, hrup in nasilje. Vse to pa seveda negativno vpliva tako na fizično kot psihično zdravje in počutje ljudi (WHO 2022). Mnoge države v zahodnem svetu se bojujejo s povečano stopnjo fizične neaktivnosti, saj so, kot še ugotavlja SZO, zaradi urbanizacije, povečane uporabe tehnologije ter sprememb v prometnih vzorcih in kulturnih vrednotah dosegle 70-odstotno raven fizične neaktivnosti populacije. Pri nekaterih pa je ta številka še višja (*ibid.*).

Obsežnost zdravstvenih težav, ki izhajajo iz sedečega, sodobnega, urbanega življenja, je postala tako velika in globoka, da danes sedeči življenjski slog dosega razsežnosti epidemije. Slednje je še toliko bolj skrb vzbujajoče, ker to v praksi pomeni, da po vsem svetu eden od štirih odraslih in trije od štirih mladostnikov, starih od 11 do 17 let, trenutno ne izpolnjujejo globalnih priporočil za fizično aktivnost, ki jih je podala SZO (WHO 2018). Še več, SZO opredeljuje fizično neaktivnost kot četrti vodilni dejavnik tveganja za globalno umrljivost. V ZDA, kjer 82 % prebivalstva živi v urbanem okolju, danes nekdanje projekcije o podaljševanju človeškega življenja delujejo zmotno optimistične. Predvideva se namreč, da bo življenje otrok krajše in manj zdravo od življenja njihovih staršev (Xu et al. 2015, 1–5).

KRITIČNO PREČENJE PROBLEMA

Otrok kot tujec v domačem okolju

Urbanistično načrtovanje je v zgodovini premalo upoštevalo ranljive skupine, vključno z otroki, čeprav so zaradi slabega načrtovanja verjetno najbolj prizadeti ravno oni – zlasti tisti v okoljih z nizkimi dohodki (Gill 2021, 4). Otroci so izključeni iz odločanja o okolju, ki jim je namenjeno, čeprav bi prav njihove potrebe morale biti v središču pozornosti. Slednje je bilo leta 2016 prepoznano na konferenci Združenih narodov Habitat III o trajnostni urbanizaciji, na kateri so udeleženci zavzeli enotno stališče, da morajo mesta zagotavljati enake pravice in možnosti ljudem vseh starostnih skupin (Habitat III 2021).

Jens Aerts v priročniku z naslovom *Shaping urbanization for children* izpostavi, da brez ustreznega načrtovanja za otroke urbano okolje postane nefunkcionalno in razdrobljeno, slednje pa vpliva na razvoj prihodnje

generacije (Aerts 2018, 21). Po drugi strani pa, kot ugotavlja Ninković Gašić, mesta, katerih ulice in druge vsebine so oblikovane ob upoštevanju potreb otrok in družin, bolje služijo vsem, ki jih uporabljajo, tako starejšim odraslim osebam in invalidom kot tudi mladim, delovno sposobnim ljudem. Do otrok prijazno urbanistično načrtovanje upošteva osnovni argument, da morajo biti mesta dobra, vključevati morajo zdrava okolja za življenje, igro in odraščanje otrok. Zato je eden od ciljev takšnega načina načrtovanja razširiti naše dosedanje razumevanje, kaj pomeni načrtovanje za otroke. Cilj mora postati vključujoč pristop, ki bo zajel in spoštoval vse vidike otrokovega življenja, ne le igro.

Številne študije in statistike dokazujejo, da se otroci danes veliko manj igrajo in družijo na prostem ter da so pod veliko večjim nadzorom staršev kot generacije pred njimi. Dnevnik *The Guardian* je leta 2017 objavil raziskavo, ki je pokazala, da 75 % britanskih otrok preživi na prostem manj časa kot zaporniki, ki so na svežem zraku vsaj eno uro na dan (Carrington 2017). V študiji *Načrtovana stanovanjska okolja in otroška igra na prostem: Ali je mogoča otroku prijazna ureditev?* avtorjev Rasheda Bhuyana in Tracey Skelton je kar 72 % staršev povedalo, da so se pri isti starosti na prostem igrali in samostojno gibali več, kot to počnejo njihovi otroci danes (2014, 284).

Ne gre pa za nov trend, saj, kot pojasnijo avtorji knjige *One false move: A study of children's independent mobility*, je ta trend v različnih urbanih okoljih zahodnih držav opazen že nekaj desetletij (Hillman et al. 1990, 106–112). Pri tem je še zlasti treba omeniti upad t. i. neodvisne mobilnosti otrok, t. i. svobode otrok, da se v svojem lokalnem okolju gibljejo in igrajo brez spremstva odraslih. Na samostojno mobilnost vpliva veliko dejavnikov, med drugim starost in spol otrok, bližina in dostopnost želenih destinacij, navade in stališča staršev ter njihovo dojemanje varnosti (Shaw 2015, 5–50). Prej omenjena študija avtorjev Hillman et al. pa je še pokazala, da se je v Angliji že v obdobju med letoma 1971 in 1990 samostojna mobilnost otrok, oziroma hoja in kolesarjenje v šolo, zmanjšala s skoraj 80 % na skrb vzbujajočih 9 %.

Razlogov, ki so prispevali k temu stanju in okrepili logiko *omejevanja*, je veliko in so posledica širših gospodarskih, kulturnih in družbenih sprememb (Hillman et al. 1990, 23). Zadnje dodatno ubesedi Tim Gill, saj kot ključne razloge navede povečanje cestnega prometa, daljši delovni čas staršev, upad obsega in kakovosti javnega prostora in razmah prostih dejavnosti v zaprtih prostorih kot spremembe. Vse to je po Gillu še dodatno sovpadalo in bilo verjetno tudi sprožilec vse močnejšega odpora do tveganja in tega, kar je sociolog Frank Furedi imenoval kultura strahu, tiste »posplošene in zahrbtne tesnobe glede varnosti, ki se kaže v strahu za otroke,

čeprav so ti statistično bolj varni kot kdaj prej v človeški zgodovini« (Gill 2007, 14). Ninković Gašić zazna takšne prakse kot neproduktivne za otroka, saj mu otežujejo integracijo v lokalne skupnosti, kar lahko privede do apatije do lastne okolice.

Ninković Gašić še poudari, da je posledica takega trenda lahko poslabšanje psihofizičnega stanja otrok in medsebojnih socialnih odnosov, pa tudi razdiranje zdravega odnosa do narave. Derr et al. še dodatno izpostavijo, da so rastlinje okoli domov in šol ter bližnji parki za otroke še posebno pomembni, saj so povezani z večjo telesno aktivnostjo, zmanjšanjem stresa, depresije in agresije, boljšo koncentracijo in nadzorom impulzov, boljšim učnim uspehom, boljšim spopadanjem z izzivi, bolj domiselnim in bolj družbeno kooperativnim igranjem ter močnejšim občutkom povezanosti in skrbi za naravo (2018, 15).

Okolje, v katerem živimo, je zato treba obravnavati kot ključni določevalec zdravja, obnašanja in razvoja otrok (WHO 2022) ter začeti sprejemati pozitivne ukrepe za izgradnjo boljše urbane infrastrukture. Ninković Gašić izpostavi, da so za spremembe na svetovni ravni pomembne zlasti mlajše generacije, ki morajo biti v te spremembe vključene, saj prav te po njenem mnenju predstavljajo prihodnost. Če se otroci med odraščanjem ne bodo ukvarjali z naravo, je precej verjetno, da ne bodo nikoli razumeli človeške odvisnosti od sveta narave (Moore 2014, 7). Okoljevarstvene navade in odnos z naravo, ki se ga otroci naučijo v otroštvu, bodo zanje postali nekaj običajnega, nekaj, kar bo oblikovalo njihovo prihodnost.

ODGOVOR NA PREPOZNANO

Otrok – aktivni udeleženec v urbanem okolju

Ključ k drugačnemu pristopu snovanja urbanih okolij Ninković Gašić zgradi na izhodišču, da moramo otrokom omogočiti, da si tudi sami ustvarjajo svoje okolje. Pri tem je pomembno, da ko v procese oblikovanja javnih prostorov vključujemo otroke, teh ne vključujemo kot bodočih državljanov, temveč kot enakopravne državljane, ki obstajajo tukaj in zdaj. Številni zagovorniki otrokovih pravic[1] menijo, da otroci in mladostniki niso le osebe, ki *šele bodo* postale odrasli, temveč so edinstvena skupina,

[1] Glej na primer Movshovich 2014 in UN 2021.

ki prav taka, kot je, že lahko veliko prispeva družbi. Prenova urbanega okolja je seveda dolgotrajen in kompleksen proces, velike spremembe na ravni mesta ali države pa pogosto zahtevajo veliko časa, sredstev in politike. Toda, kot zapišejo Derr et al., znanje, politična volja in spreminjanje vedenja meščanov so za spreminjanje naše trenutno netrajnostne usmeritve prav tako pomembni kot čista tehnologija in učinkovita raba virov (Derr et al. 2018, 31).

Spremembe pa lahko uvedemo tudi na ravni skupnosti in posameznika, saj so, kot še poudari Ninković Gašić, takšne manjše spremembe, ki se lahko zgodijo takoj, brez čakanja na postopke, proračune ali meritve uspešnosti, pomembni prvi koraki, s katerimi lahko pridemo do novih idej, predstavimo možnosti in tlakujemo pot morebitnim velikim projektom, ki zahtevajo večja vlaganja.

> ↪ »Strategije, kot so pobude 'pešbus', lahko otroke spodbudijo k varni hoji v šolo, ustvarjanje urbanih vrtov pa lahko zagotovi tako zdravo hrano kot prostor za socialno interakcijo in fizično aktivnost. Mnogi od teh ukrepov za izboljšanje zdravja življenjskega okolja pomagajo tudi ljudem, da so bolj fizično aktivni in uživajo bolj zdravo hrano, s čimer se zmanjšajo prekomerna teža in bolezni, kot so sladkorna bolezen in bolezni srca.« (WHO 2018)

Ninković Gašić izpostavi bistven pomen sodelovanja otrok pri takšnih pobudah, saj le to lahko privede do demokratične ureditve mesta. Način razmišljanja, zaradi katerega so se pri oblikovanju mesta upoštevale skoraj izključno potrebe odraslih, produktivnih prebivalcev, se z vključitvijo otrok spremeni in da glas tistim, ki prej pri zasnovi mest niso bili slišani. Potrebe otrok so podobne tistim, ki jih imajo tudi druge kategorije meščanov, na primer starejših in invalidnih oseb. Avtorica trdi, da so za spodbujanje mestnega razvoja potrebne ustvarjalne ideje – ideje otrok. Čeprav njihovih idej ni vedno mogoče izvesti takoj, so odrasli tisti, ki morajo prepoznati potencial otroških inovacij. V sodelovanju otrok pa vidi tudi močan izobraževalni vidik, saj pomaga vzpostavljati občutek skupnosti, zaradi česar otrok začne doživljati mesto kot svoje.

Če želimo ugotoviti, kako izboljšati urbanistično zasnovo, da bi izpolnila potrebe otrok, moramo najprej razumeti, česa si otroci in družine želijo od svojih mest (Buss et al. 2014, 24). V duhu tega je Ninković Gašić organizirala dve delavnici v Banjaluki. V sodelovanju s šolo risanja Dragaš, pod vodstvom Renata Rakića, so udeleženci delavnice svobodno ustvarjali risbe na teme *mesto po mojem*, *prostor za igro* ter *kaj bi rad spremenil v svojem*

mestu. Neformalen okvir delavnice je omogočil otrokom izraziti svoje misli in občutke, pri tem pa jim je bila risba opora, s čimer otroci niso razvijali le svojih motoričnih in risarskih sposobnosti, temveč tudi svoje zavedanje okolice, tako vizualno kot konceptualno (Hope 2008, 23). (FIG. 6–7)

V drugi delavnici, organizirani v sodelovanju s Športno kreativnim centrom Kids, ki ga vodita Mirna Vujanović in Nataša Simić, so bili udeleženci vpeti v urbano okolje. Med sprehodi od šole do najbližjega parka in nazaj so otroci izražali, kaj jim je v okolju všeč in kaj bi spreminjali. Med sprehodom je Ninković Gašić fotografirala lokacije, mimo katerih so šli, o njih so se pogovarjali, nato pa je fotografije rahlo posvetljene natisnila na večjem formatu. Otroci so potem te fotografije dobili in nanje narisali svoje ideje ter popolnoma svobodno izrazili, kaj bi tam želeli spremeniti ali dodati. (FIG. 8)

S pomočjo izkušenj, pridobljenih na delavnicah, je Ninković Gašić ustvarila pripomoček za spodbudo otrokom, da sami vzpostavijo smiselno interakcijo s svojim okoljem, ga bolje spoznajo, se z njim poistovetijo in ga preoblikujejo v skladu s svojimi resničnimi potrebami. Nastal je pripomoček *Greva ven!*, da bi otrokom pomagal pri prvih korakih vključevanja v izboljševanje urbanega okolja. Cilj priročnika je, da otroci korak za korakom in iz dneva v dan osvajajo navado opazovanja okolice, z namenom širitve znanja in pogledov. Spodbuja jih k ustvarjalnosti, jim posreduje pomembne informacije o njihovem okolju, pravicah in dolžnostih ter jih opogumi pri prvih korakih gradnje odnosa do oblikovanja, arhitekture in urbanizma. S pomočjo ustvarjalne naloge so otroci opogumljeni izvajati akcije v svojem mestu, pri čemer odkrivajo, da so lahko učinkoviti nosilci sprememb. Čeprav jih priročnik vodi skozi naloge, pa je poudarek na prosti igri in raziskovanju. Publikacija otrok ne usmerja k vnaprej določenemu vedenju, niti jim ne ponuja predlogov, kaj naj počnejo in kako naj se igrajo, temveč kako naj več časa prebijejo zunaj, se igrajo več, so pozorni na svoje okolje in so pri tem svobodnejši. Otroke spodbuja k pisanju, risanju, udejstvovanju in dialogu, namenjena pa je dolgoročni uporabi v prostem času.

Prakse, ki jih uporablja Ninković Gašić, spodbujajo spontan in svoboden pristop, pri čemer so potrebe otrok na prvem mestu. Z reševanjem problemov spodbujajo samoizražanje, domišljijo in ustvarjalno razmišljanje. Z dialogom, igro in umetnostjo se otroci učijo pomembnih lekcij o svoji okolici, skrbi zase in za druge, pa tudi tega, kako k težavam pristopati z različnih vidikov. Takšne prakse zagotavljajo dobre rezultate pri razvoju okolice, v kateri otroci odraščajo, poleg tega pa lahko pomagajo otrokom razviti samozavest ter sposobnost izražanja želja in potreb. (FIG. 9–11)

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MAGISTRSKO DELO

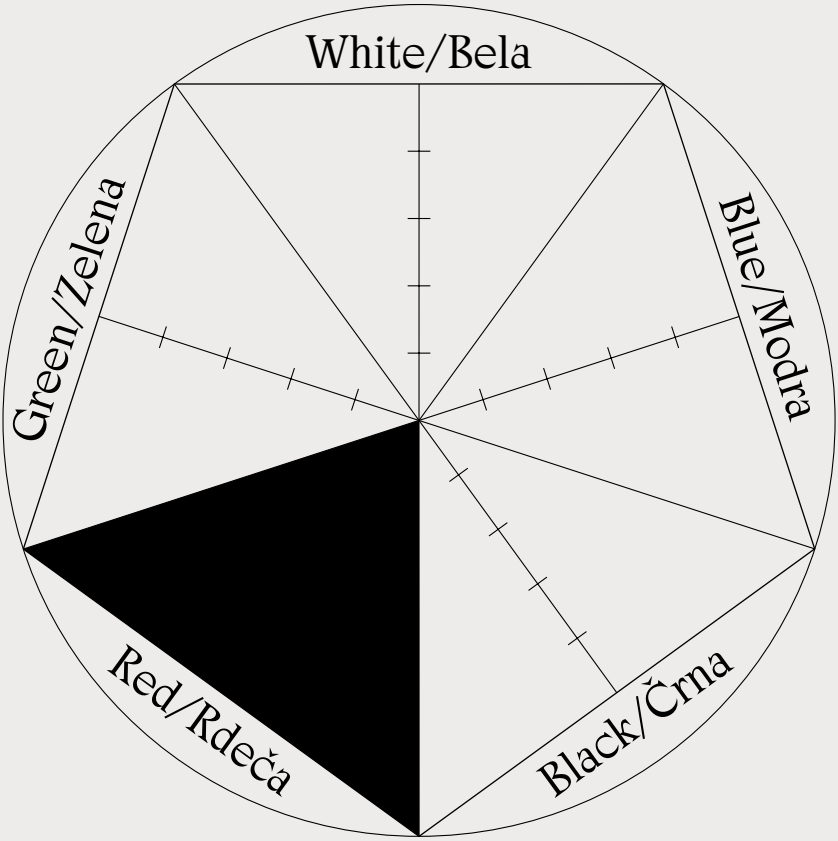
CASE STUDY

4

ŠTUDIJA PRIMERA

Mapping

Mapiranje



WHITE

BLUE

BLACK

RED

rebellion, freedom, time for oneself, action, expression, spontaneity

GREEN

BELA

MODRA

ČRNA

RDEČA

upor, svoboda, čas zase, akcija, izražanje, spontanost

ZELENA

Case Study 4

WHITE BLUE BLACK **RED** GREEN

I LITTER, THEREFORE I AM

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STUDY PROGRAMME	Sculpture
YEAR	2021

Our society is primarily defined as a consumerist society, as mass production and consumption underlie not only the economy but also lifestyles and cultural models. This becomes evident when we observe how politics, the market, and the media implicitly and explicitly emphasise the importance of consumption for our existence. The present study highlights the relationships between art, consumerism and waste. Waste is associated with luxury and excess; at the same time, it represents the potential for reuse. How can rubbish be used as a medium to draw attention to certain topics?

STARTING POINT

Consumerism and emptiness

Consumption is generally perceived as a process of satisfying people's needs, yet on the other hand, "consumerism is not just the process of consumption, but also a mode of production, the production of culture and identities" (Kurdija 2000, 11). Consumption can be broken down into three types: utilitarian-rational consumption, status consumption, and individual consumption. Economics is characterised by its conception of consumption as rational action; desires are supposed to stem from the functional needs of the individual. This, however, excludes consumption as a cultural practice. Sociological research, on the other hand, highlights the irrational aspects of consumption, as people's preferences vary

depending on their environment and status. As Erhatič points out, in addition to consumerism, mass production also plays a significant role. She goes further, arguing that they need to be considered as a whole. Or, as the economist Victor Lebow explained in 1955:

> Our enormously productive economy demands that we make consumption our way of life, that we convert the buying and use of goods into rituals, that we seek our spiritual satisfaction and our ego satisfaction in consumption. We need things consumed, burned up, worn out, replaced and discarded at an ever-increasing rate. (Kimberley 2013)

Drawing on Bauman and Campbell, Passini argues:

> As Bauman (2007) pointed out, with the passage from mere consumption to consumerism, there was a sort of 'consumerist revolution' that, for many people, has elevated consumption to one of the purposes of their existence (Campbell, 1989). Even if this emphasis on consumption as a raison d'être clearly does not concern everyone in capitalist societies, [...] some effects of consumerism on everyday life and on the interaction with others may well regard us all, because consumerism is part of the society and the culture with which we must relate day-in, day-out. Within an economic perspective, consumerism refers to economic policies that place an emphasis on consumption and to the belief that free choice by consumers should dictate a society's economic structure. However, is this supposed freedom of choice real, or are people turned into slaves of consumption and therefore made less free? Indeed, the paradox is that consumerism is a culture of experimentation that—by urging the continuous purchase of the 'new' and dissatisfaction with the 'old,' and by changing so rapidly that the new is already old—leads to a culture of eternal dissatisfaction: An 'apparently endless pursuit of want' (Campbell, 1989, p. 37). (Passini 2013, 370)

Rubbish, stuff and its value

> The question of art's engagement with respect to consumerism is still, or perhaps even increasingly, relevant today. Capitalism and politics go hand in hand. Consumerism in general, as well as consumer centres, which include the distribution centres of the culture industry, are fighting an enemy that has already been defeated, namely the thinking subject. Consumption has become a central activity in contemporary social life. (Tratnik 2016, 136–137)

At this point, Erhatič lucidly transforms Descartes's most quoted saying *Cogito, ergo sum* (I think, therefore I am) into "I litter, therefore I am". To Descartes, the proof of man's existence is that one thinks, even if they are in error. Now, however, it appears that the proof of our existence will remain for centuries in the form of discarded packaging. Despite the fact that the fundamental principle of Western society and science is rationalism, which challenges us to doubt everything, we have managed to somehow forget this, relieving ourselves of the responsibility for our own actions. Consumption and rubbish are the defining features of our society, impacting nature, economy, ecosystems, social structures, and our values. In this context, "the phenomenon of rubbish comes to the forefront not only as a by-product of production processes but as an integral part of the cycles of production and consumption" (Pye 2010, 9). Every day, we dump unwanted material into our toilets and waste bins, we flush it down and carry it away to get rid of it. Rubbish is on the streets, in factories, rivers, lakes, oceans—even orbiting the world in the form of so-called space debris.

In other words: "Our trash is like a covenant; what we throw away speaks of our values, habits and lives. [...] Our trash is part of us, whether we acknowledge it or not" (Lukas 2012, 25). There is a well-known saying "You are what you eat". A slightly less familiar but no less relevant derivative is "You are what you consume," which asserts that we can construct our identity based on what and how we buy and consume. A. J. Weberman paraphrased this as: "You are what you throw away" (Dreifus 1971).

In *Rubbish Theory*, Michael Thompson adopts an anthropological approach to objects and carefully describes in-between states in which value is ambiguous. Roughly speaking, he describes three categories of objects, which he classifies according to their social value: transient

(those whose value diminishes over time, i.e. most ordinary goods); durable (those whose value increases or is maintained over time); and a third, the category of *rubbish*, whose value is not entirely clear, or which is in an in-between state. These objects can potentially follow a path of apparent transition from transience to durability. Transient objects, on the other hand, gradually lose their value during their expected life span, slowly sliding into the category of rubbish (1979, 9–10).

One of the key ways that objects can shift from the category of rubbish to the category of the durable is through the act of finding. "The find" is a central term in many consumer activities in the context of the non-new, the second-hand, the used. The collector can thus be seen as a kind of explorer. This "hunting" is described by Gabriel and Lang as "the secret of getting something for free, in a world where everything has to be paid for" and presupposes a kind of "triumph over the system" (Gabriel et al. 2015, 67).

A *find* refers to a discovery and presupposes that something has been overlooked or hidden. The concept of a find also suggests that the found object has properties that others (or even we ourselves) have overlooked in the past, and as such it is closely related to the concept of "bringing to light", where a find can refer to the properties of objects as well as to the objects themselves (Parsons 2007, 392). It is this thought, Erhatič asserts, that can point us towards the objects' potentials, as the objects may have been there all along, but suddenly appeared useful to us. Perhaps we simply brought some of their aspects to light. The transition of an item from having little or no value (rubbish) to having lasting, durable value, can be triggered by a relatively small shift in the way we look at, see or perceive something. This shift is mainly in that we begin thinking in terms of movement, of circulation, moving away from the linear consumer mindset of demand-supply/production (Cooper 2008, 2).

RESPONSE TO THE IDENTIFIED ISSUES

Finding ways to resist

"Nothing is inherently trash," argues Strasser (1999, 5) in reference to Douglas's observation that "Shoes are not dirty in themselves, but it is dirty to place them on the dining table; food is not dirty in itself, but it is dirty to leave cooking utensils in the bedroom, or food bespattered on clothing; similarly, bathroom equipment in the drawing room; clothing

lying on chairs; outdoor things indoors; upstairs things downstairs [...] and so on" (2003, 36). This, as Erhatič points out, simply explains that our perception of objects changes in the context of their use and location, which serves to illustrate that rubbish only catches people's attention when it is in the wrong place.

Erhatič therefore asserts that value is not an intrinsic property of objects, but contingent on our ways of seeing and placing them. On this basis, the revaluation of objects can be achieved through three practices: finding objects, displaying objects, and transforming and reusing objects. Each of these practices changes the way we view the moved object, which shifts from being seen as valueless "rubbish" to a "durable object" of increasing value (Parsons 2007, 393). Such practices can also be very interesting and practical in the artistic field, since at certain moments, art can throw us off balance, trapping us in the strangeness and the unknown. Art can help us see, and it is for this reason that it can be understood "as one of the few venues open to revealing the essence of the state of society"; as such, "art enables us, as summarised by Louis Althusser, to see the reality of an existing ideology, despite itself being a part of that ideology" (Mattick 2013, 269).

In her master's thesis, Erhatič, building on these analytical and theoretical foundations, created four works of art, which evolved from one to another in a process analogous to recycling—both in terms of reusing material and recycling ideas. They were based on the following starting points, which served a kind of code of ethics for their production:

- ↪ I start with what I can get for free—pick up, find, acquire—without financial input.
- ↪ I haven't got a studio of my own, nor any way of storing my work, so I have to keep recycling it.
- ↪ I avoid generating extra rubbish for the sake of my idea, my expression, the need for exhibitions and so on.
- ↪ I do not use substances or materials that are toxic or harmful to health or the environment.

The first work, entitled *How much packaging you need ...*, highlights the problem of packaging, both from the point of view of the excessive amount of materials used for packaging, and from the point of view of the persistence of these materials, which continue to exist in the form of rubbish for decades, even centuries, after use. The work consists of concrete castings of cardboard boxes that form a monumental sculpture in a satirical glorification of rubbish. **FIG. 12**

Erhatič once again used cardboard boxes in her next work, entitled *The Wall*, using them as building blocks to form a wall that divided the exhibition space into two parts. In the middle of the wall, a gaping hole was torn open, a symbol of rebellion against the values dictated by consumer culture. The artist reused these very cardboard boxes in her next work, the performance and installation *Transformation*, by tearing them apart and grinding them into paper pulp, which she then used to make large sheets of thin paper by hand. In doing so, Erhatič transformed the material into one with the opposite physical properties—a compact, opaque material became lightweight and translucent—demonstrating that waste can be a valuable material resource for reuse. In doing so, the author used the long and arduous process of production to highlight the fact that, compared to capitalist hyper-production, sustainable action requires more effort and time. (FIG. 13–14)

The handmade sheets of paper were finally reused by the artist for the exhibition/installation *May Your Time Be Long* at the Alkatraz Gallery. The large sheets were hung throughout the exhibition space so that they formed corridors for visitors to walk through. With the blank pieces of handmade paper undulating soothingly in the air, the artist offered visitors a chance to calm down. The exhibition highlighted the importance of taking time for ourselves and our thoughts in today's fast-paced, consumer-oriented world overflowing with products and information. (FIG. 15)

The four works also represent the author's practical manifestation of one of the ways in which the system can be rebelled against. She goes on to say that today, dedicating oneself to something can be a form of rebellion—whether it is creating, listening to music, visiting a gallery, acquiring knowledge, new skills... All of this means taking time for oneself. It is a non-material investment that stands in diametrical opposition to a society that rewards instant gratification, solutions and results. The system teaches us to settle for largely material goods or instant services without thought or excessive effort. But it is only when we put in hours and hours of effort and patience that we grow, learn, develop and are satisfied with the result. Everything else only serves as a distraction, a short-lived pleasure.

FIG. 12

Doroteja Erhatič, *Koliko embalaže potrebuješ …* [*How much packaging you need…*], 2018, concrete, 245 × 60 × 40 cm, Rožna dolina, next to student dorm No 5, Ljubljana.

Doroteja Erhatič, *Koliko embalaže potrebuješ …*, 2018, beton, 245 × 60 × 40 cm, Rožna dolina, pri študentskem bloku št. 5, Ljubljana.

FIG. 13

Doroteja Erhatič, *Zid* [*The Wall*], 2019, cardboard boxes,
410 × 310 × 50 cm, sculpture studio at the Academy
of Fine Arts and Design of the University of Ljubljana.

Doroteja Erhatič, *Zid*, 2019, kartonaste škatle,
410 × 310 × 50 cm, kiparski atelje UL ALUO.

FIG. 14

Doroteja Erhatič, *Pretvarjanje* [*Transformation*], 2019, performance and installation, international biennial exhibition TRANS-FORM:ACTION, part of the TRANSFORM project, at the Museum of Contemporary Art Metelkova, Ljubljana.

Doroteja Erhatič, *Pretvarjanje*, 2019, performans in instalacija, bienalna mednarodna razstava TRANS-FORM:ACTION, projekta TRANSFORM, v Muzeju sodobne umetnosti Metelkova, Ljubljana.

FIG. 15

Doroteja Erhatič, exhibition *Naj ti bo čas dolg* [*May Your Time Be Long*], 2019, Alkatraz Gallery, Metelkova Art Centre, Ljubljana.

Doroteja Erhatič, razstava *Naj ti bo čas dolg*, 2019, Galerija Alkatraz, AKC Metelkova mesto, Ljubljana.

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Študija primera 4 BELA MODRA ČRNA RDEČA ZELENA

SMETIM, TOREJ SEM

AVTORICA	Doroteja Erhatič
MENTOR TEORETIČNEGA DELA	doc. dr. Tomislav Vignjević
MENTOR PRAKTIČNEGA DELA	prof. Alen Ožbolt
SOMENTORICA	doc. mag. Maja Smrekar
ŠTUDIJSKA SMER	Kiparstvo
LETO	2022

Naša družba je primarno opredeljena kot potrošniška, saj na množični proizvodnji in potrošnji ne temelji le gospodarstvo, temveč tudi življenjski in kulturni modeli. To je jasno, če pogledamo, kako politika, trg in mediji implicitno in eksplicitno poudarjajo pomen potrošnje za naš obstoj. Pričujoča raziskava odkriva odnose med umetnostjo in potrošništvom ter odpadki. Slednji so povezani z razkošjem in presežkom, hkrati pa pomenijo potencial za ponovno uporabo. Kako se smeti lahko uporabljajo kot medij za opozarjanje na določene teme?

IZHODIŠČE

Potrošništvo in praznina

Potrošnja je na splošno percipirana kot zadovoljevanje človekovih potreb, toda »potrošništvo ni samo proces trošenja, marveč tudi oblika produkcije, produkcija kulture in identitet« (Kurdija 2000, 11). Potrošnjo lahko razdelimo v tri sklope, to so utilitarno-racionalna potrošnja, statusna potrošnja in individualna potrošnja. Pojmovanje potrošnje kot racionalnega delovanja je značilno za ekonomijo, pri čemer pa potrošnjo kot kulturno prakso izključuje, saj naj bi želje izhajale iz posameznikovih funkcionalnih potreb. Sociološko proučevanje na drugi strani izpostavlja neracionalne vidike potrošnje, saj preference ljudi variirajo glede na okolje in položaj. Kot izpostavi Erhatič, poleg potrošništva pomembno vlogo igra tudi množična proizvodnja. Še več, opozori, da ju je treba obravnavati kot celoto. Ali kot že leta 1955 pojasni ekonomist Victor Lebow:

↪ »Naše izjemno produktivno gospodarstvo zahteva, da potrošnja postane naš način življenja, da kupovanje in uporabo dobrin spremenimo v obrede, da v potrošnji iščemo duhovno zadovoljstvo in zadovoljstvo svojega ega. Stvari moramo vedno hitreje porabljati, iztrošiti, nadomeščati in zavreči.« (Kimberley 2013)

Naslanjajoč se na Baumana in Campbella, Passini trdi:

↪ »Kot je izpostavil Bauman (2007), se je s prehodom od navadne porabe k potrošništvu zgodila nekakšna 'potrošniška revolucija', ki je za mnoge ljudi potrošnjo povzdignila v enega od ciljev svojega obstoja (Campbell 1989). Četudi ta poudarek na potrošnji kot *raison d'être* ne zadeva vseh posameznikov v kapitalističnih družbah, [...] se nekateri učinki potrošništva na vsakdanje življenje in interakcijo z drugimi tičejo vseh nas, ker je potrošništvo del družbe in kulture, s katero smo povezani na vsakodnevni ravni. Znotraj ekonomske perspektive se potrošništvo nanaša na gospodarske politike, ki poudarjajo potrošnjo, in prepričanje, da bi morala svobodna izbira potrošnikov določati gospodarsko strukturo družbe. Toda, ali je ta domnevna svoboda izbire resnična ali so ljudje spremenjeni v sužnje potrošnje in zato manj svobodni? Paradoks je v tem, da je potrošništvo kultura eksperimentiranja, ki s spodbujanjem nenehnega kupovanja 'novega' in nezadovoljstva s 'starim' ter s tako hitrim spreminjanjem, da je novo takoj že zastarelo, vodi v kulturo večnega nezadovoljstva: v 'navidezno neskončno zasledovanje želje' (Campbell 1989, 37).« (Passini 2013, 370)

KRITIČNO PREČENJE PROBLEMA

Smeti, stvari in njihova vrednost

↪ »Vprašanje angažiranosti umetnosti v razmerju do potrošništva je danes še vedno ali pa morda celo vse bolj aktualno. Kapitalizem in politika hodita z roko v roki. Potrošništvo nasploh in potrošniška središča, ki vključujejo centre za distribucijo kulturne industrije, se bojujejo proti sovragu, ki je že premagan, to je proti mislečemu subjektu. Potrošnja je postala središčna aktivnost v sodobnem družbenem življenju.« (Tratnik 2016, 136–137)

Na tej točki Erhatič lucidno sprevrže Descartesov najpogosteje citiran rek *Cogito, ergo sum* (Mislim, torej sem) v *Smetim, torej sem*. Descartes je predpostavljal, da je dokaz obstoja človeka že ta, da človek misli, ne glede na to, ali je morda v zmoti. Zdaj pa vse kaže na to, da bo dokaz našega obstoja ostal še stoletja za nami v obliki zavržene embalaže. Čeprav sta se zahodna družba in znanost razvili na temeljih racionalizma, ki nam govori, da dvomimo o vsem, o čemer lahko, smo nekako pozabili na to in se razbremenili odgovornosti za lastna ravnanja. Potrošnja in smeti definirajo našo družbo ter vplivajo na naravo, ekonomijo, ekosisteme, socialne strukture in naše vrednote. Pri tem »fenomen smeti pride v ospredje ne le kot stranski produkt proizvodnih procesov, temveč kot sestavni del ciklov proizvodnje in porabe« (Pye 2010, 9). Vsak dan v stranišča in koše za smeti odlagamo nezaželen material, ga splaknemo, odnašamo, da se ga znebimo. Odpadki so na ulicah, v tovarnah, rekah, jezerih, oceanih in se v obliki tako imenovanih vesoljskih ostankov vrtijo okrog sveta.

Z drugimi besedami: »Naše smeti so kot zaveza; kar zavržemo, govori o naših vrednotah, naših navadah in našem življenju. […] Naše smeti so del nas, ne glede na to, ali jih priznavamo ali ne« (Lukas 2012, 25). Če nam je dobro znan rek *Si, kar ješ* (*You are what you eat*), je morda malo manj znana, a relevantna izpeljanka *You are what you consume*, ki trdi, da lahko konstruiramo svojo identiteto s tem, kaj in kako kupujemo, konzumiramo. A. J. Weberman pa je parafraziral: »You are what you throw away« (Dreifus 1971).

V *Rubbish Theory* Michael Thompson antropološko pristopa do predmetov in natančno izrisuje tudi vmesna stanja, ki imajo dvoumno vrednost. V grobem gledano opisuje tri kategorije predmetov, ki so razvrščeni glede na svojo družbeno vrednost; prehodni (tisti, ki jim vrednost pada čez čas, to je večina navadnih dobrin); trajni (tisti, ki se jim sčasoma vrednost povečuje ali jo ohranjajo); in tretji, kategorija smeti, katerih vrednost ni čisto jasna, oziroma so v vmesnem stanju. Ti predmeti so zmožni iti po poti navidezne tranzicije od minljivosti k trajnosti. Prehodni predmeti pa postopoma izgubljajo vrednost, življenjsko dobo ter počasi drsijo v smeti (1979, 9–10).

Eden ključnih načinov, kako predmeti lahko drsijo od kategorije smeti do trajnih, je skozi dejanje iskanja. »Najdba« je osrednji termin v veliko potrošniških aktivnostih na področju nenovega, rabljenega, uporabljenega. Tako je zbiratelj lahko nekakšen raziskovalec. Ta »lov in iskanje« Gabriel in Lang označita za »skrivnost pridobivanja nečesa zastonj, v svetu, kjer je treba vse plačati« in predpostavlja nekakšno »zmago nad sistemom« (Gabriel et al. 2015, 67).

Najdba se nanaša na odkritje in predpostavlja, da je bilo nekaj sicer spregledano, prezrto ali skrito. Koncept najdbe prav tako nakazuje, da ima najden predmet lastnosti, ki so jih drugi (ali pa tudi mi sami) v preteklosti spregledali, kot tak pa je tesno povezan z »razkritjem« (*bringing to light*), pri čemer se najdba lahko nanaša na lastnosti predmetov in tudi na same predmete (Parsons 2007, 392). Prav ta misel pa nas po Erhatič lahko usmeri v njihove potenciale, saj so predmeti, objekti morda bili tam ves čas, vendar so se nam nenadoma zazdeli uporabni. Mogoče smo nekatere vidike preprosto obelodanili. Prehod iz stvari, ki ima malo ali nično vrednost (smet), v trajno vrednost, lahko povzroči razmeroma majhen premik v načinu, kako nekaj gledamo, vidimo, dojemamo. Ta razlika je predvsem ta, da razmišljamo z vidika gibanja, kroženja, s čimer se odmikamo od linearnega potrošniškega razmišljanja povpraševanje-ponudba/produkcija (Cooper 2008, 2).

ODGOVOR NA PREPOZNANO

Iskanje načinov upora

Strasser pravi: »Nič ni samo po sebi smet,« (1999, 5) in se pri tem nanaša na Douglasov rek o umazaniji, ki pravi, da »Čevlji sami po sebi niso umazani, vendar jih je umazano položiti na jedilno mizo; hrana sama po sebi ni umazana, vendar je nemarno, če jo pustimo v spalnici, oblačila, ki ležijo na stolih; zunanje stvari v notranjih prostorih; stvari zgoraj, namesto spodaj itd.« (2003, 36). Kot izpostavi Erhatič, to preprosto pojasnjuje, da se naše dojemanje predmetov spreminja v kontekstu njihove uporabe in lokacije, in s tem zgovorno kaže, da smeti pritegnejo pozornost ljudi le, kadar so na napačnem mestu.

Zato Erhatič zatrdi, da vrednost ni vgrajena lastnost predmeta, ampak je odvisna od našega načina gledanja in postavitve predmetov. Na tej podlagi lahko prevrednotenje stvari dosežemo skozi tri prakse, ki vključujejo iskanje predmetov, prikaz predmetov ter preoblikovanje in ponovno uporabo predmetov. Vsaka od teh praks spreminja način, kako gledamo na predmet, ki ga premaknemo, iz obravnave kot »smet« brez vrednosti do »trajnega predmeta« naraščajoče vrednosti (Parsons 2007, 393). Gre za prakse, ki so lahko zelo zanimive in praktične tudi na področju umetniškega ustvarjanja, saj nas umetnost lahko v določenih trenutkih vrže iz ravnovesja, nas ujame znotraj čudnosti in neznanega. Umetnost nam lahko pomaga videti in prav zato jo lahko razumemo »kot enega redkih prizorišč, ki je odprto za razkrivanje bistva stanja v družbi«, s čimer nam

»umetnost omogoča, kot je strnil Louis Althusser, videti resničnost obstoječe ideologije, čeprav je sama del te ideologije« (Mattick 2013, 269).

Erhatič je na danih analitično-teoretičnih podlagah v svojem magistrskem delu ustvarila štiri različna avtorska dela, ki so se razvijala eno v drugo na način reciklaže – tako v smislu ponovne uporabe materiala kot tudi reciklaže idej. Temeljila so na naslednjih izhodiščnih točkah, nekakšnem etičnem kodeksu lastne produkcije:

- ↪ Izhajam iz tega, kar lahko dobim zastonj, poberem, najdem, pridobim brez finančnega vložka.
- ↪ Nimam lastnega ateljeja ali možnosti hrambe del, zato jih moram sproti reciklirati.
- ↪ Izogibam se proizvajanju dodatnih smeti zavoljo svoje ideje, izražanja, potrebe razstav in podobno.
- ↪ Ne uporabljam zdravju in okolju strupenih ali škodljivih snovi in materialov.

Prvo delo, naslovljeno *Koliko embalaže potrebuješ …*, izpostavlja problematiko embalaže, tako s stališča pretirane količine materialov, ki se uporabljajo za embaliranje, kot tudi z vidika dolgoživosti teh materialov, ki po uporabi še desetletja, celo stoletja obstajajo kot smeti. Gre za skulpturo iz betonskih odlitkov kartonastih škatel, ki tvorijo monumentalno plastiko in tako satirično poveličujejo smeti. (FIG. 12)

Kartonaste škatle je Erhatič uporabila tudi v naslednjem delu z naslovom *Zid*, v katerem so kot gradniki tvorile zid, ki je razmejeval razstavni prostor na dva dela. V sredini zidu je zevala raztrgana luknja kot simbol upora proti vrednotam, ki jih narekuje potrošniška kultura. Prav te kartonaste škatle je avtorica uporabila tudi pri naslednjem delu, performansu in instalaciji *Pretvarjanje*, kjer jih je raztrgala in zmlela v papirno pulpo, iz katere je nato ročno izdelala velike formate tankega papirja. S tem je Erhatič dosegla ravno obratne fizikalne lastnosti materiala – iz kompaktnega, netransparentnega v lahek, prosojen material – in dokazala, da so lahko odpadki dragocen materialni vir za ponovno uporabo. Ob tem je avtorica z dolgotrajnim, fizično napornim procesom izdelave izpostavila, da v nasprotju s kapitalistično hiperprodukcijo trajnostno delovanje zahteva več truda in časa. (FIG. 13–14)

Ročno izdelane kose papirja je avtorica nazadnje znova uporabila za razstavno postavitev *Naj ti bo čas dolg* v Galeriji Alkatraz. Veliki formati papirja so bili razobešeni po celotnem razstavnem prostoru na način, da so tvorili koridorje, med katerimi so se lahko obiskovalci sprehajali. S praznimi, nepopisanimi kosi ročno izdelanega papirja, ki so pomirjujoče

valovali v zraku, je avtorica obiskovalcem ponudila možnost, da se umirijo. Z razstavo je izpostavila, kako pomembno je, da si v današnjem hitrem, potrošniško naravnanem svetu, ki je prenasičen z izdelki in informacijami, vzamemo čas zase in svoje misli. (FIG. 15)

S svojimi štirimi deli je avtorica v praksi izpostavila tudi enega izmed načinov upora proti sistemu. Namreč, kot še zatrdi, prav to, da se danes nečemu posvetimo, je lahko ena od oblik upora, pa naj bo to ustvarjanje, poslušanje glasbe, obisk galerije, pridobivanje znanja, novih spretnosti … vse to pomeni vzeti si čas zase. Je naložba, ki ni materialnega tipa, in je popolno nasprotje družbi, ki nagrajuje instantne potešitve, rešitve in rezultate. Sistem nas uči, da se zadovoljimo večinoma z materialnimi dobrinami ali storitvami na hitro in brez pomislekov ali pretiranega truda. A šele ko v nekaj vložimo ogromno ur truda in potrpežljivosti, šele takrat rastemo, se učimo, razvijamo in smo lahko zadovoljni z rezultatom. Vse drugo deluje le kot mašilo, kratkotrajna potešitev.

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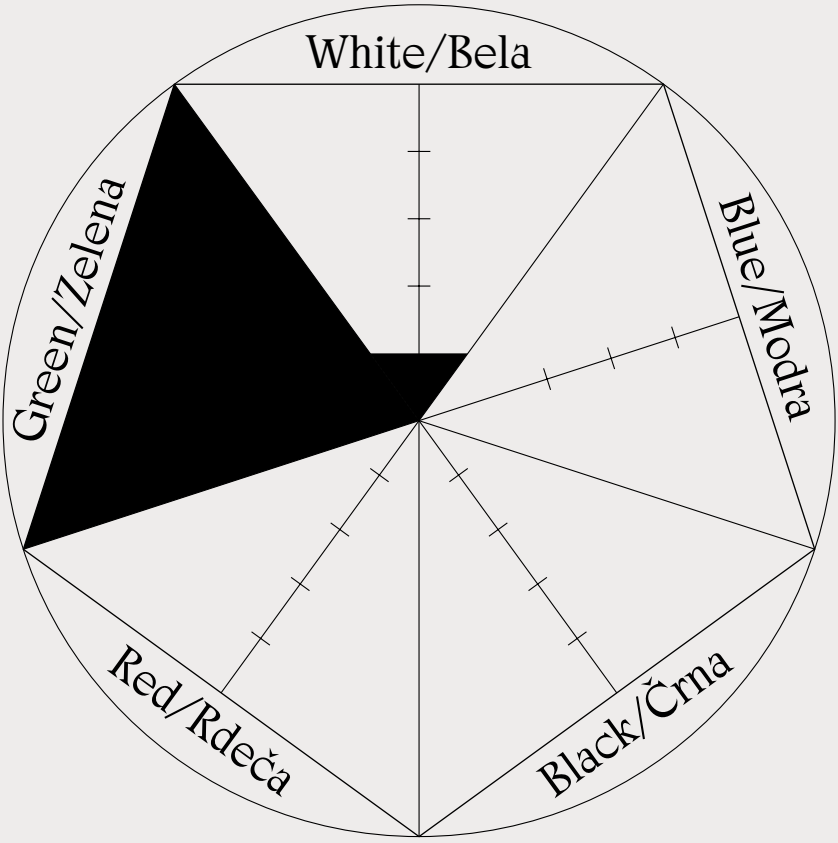
CASE STUDY

5

ŠTUDIJA PRIMERA

Mapping

Mapiranje



WHITE

do-it-yourself

BLUE

BLACK

RED

GREEN

nature as a model, sustainability,
natural order, in tune with nature, wisdom,
tradition, rejection of the artificial

BELA

naredi sam

MODRA

ČRNA

RDEČA

ZELENA

zgledovanje po naravi, trajnost,
naravni red, sonaravno, modrost,
tradicija, zavračanje umetnega

Case Study 5

WHITE BLUE BLACK RED GREEN

DEVELOPMENT OF INKJET PRINTING INKS FROM SUSTAINABLE / NATURAL SOURCES AND THEIR USE IN BOTANICAL PHOTOGRAPHY

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STUDY PROGRAMME AND COURSE	Visual Communication Design, Photography
YEAR	2022

The idea of natural printing inks emerged in response to the question of whether we could derive printing inks from plants and use them to print photographs of plants. The goal of the project was to develop inkjet printing inks from sustainable, natural sources and use them in the exploration of botanical photography.

STARTING POINT

Sources and types of natural dyes

The practice of producing dyes from natural sources is hypothesised to have emerged simultaneously around the world as early as in the Neolithic era, roughly 10,000 BCE. The surviving evidence, found on cave walls, shells, stones, skin and feathers, attests to the use of natural pigments derived from minerals. The lack of written records and the nature of the dyed materials make pinning down the exact age and type of dyes employed very difficult, as they tend to degrade rapidly unless very well protected, as in the case in mummification techniques in ancient tombs. The earliest records attesting to the practice of dyeing date back to 2,600 BCE, with recipes for red, black and yellow dyes found in China (Behan 2018, 10–14).

Throughout history, the natural dyes and fibres employed have been specific to individual bioregions around the world. The natural resources available helped shape the choice of colours and the methods used to produce the fibres, as well as the tools and methods used to apply the dyes. Some places have an abundance of plants that offer striking colours, such as the bright pinks and reds of Indian redwood (*Biancaea sappani*), the rare tropical indigo dye, the vivid pink colour of the dye extracted from the cochineal insect, *Dactylopius coccus*, of Mexico, and the regal Tyrian purple, produced by the ancient Phoenicians of the western Mediterranean

from the *Murex* sea snail. In Europe, the colour palette tended towards softer shades of pink, yellow, earthy orange, brown and light green (Behan 2018, 10–14).

To this day, natural dyes are produced from plants, minerals and insects, with plants offering the widest colour palette. Any part of the plant can be used—leaves, flowers, stalks, roots, berries, nuts, seeds, wood and bark, as well as fungi and lichens. Mineral dyes include earth and rock pigments, while animal dyes are commonly derived from various insects. Natural dyes can be used to dye textiles, paper, leather, wood or ceramics (Behan 2018, 10–14).

Compared to synthetic dyes, natural dyes cause much less harm to the environment and are also cheaper to produce. Most of the plants suitable for natural dye production are easy to grow in your own garden, field or plantation. Today, the use of natural dyes is limited mainly to domestic and small-scale use by traditional artisans and a handful of commercial companies worldwide (Patra 2016).

CRITICAL EXAMINATION OF THE ISSUE

The harmful impacts of synthetic dyes and the printing industry

Synthetic dyes have many negative impacts on the natural environment and organisms. The greatest risk is to workers in synthetic dye factories, who are directly exposed to various chemicals on a daily basis. Employees suffer from skin diseases, respiratory problems and other types of chronic health problems, even deadly ones. That said, harmful chemical compounds also affect consumers who wear, use or handle the dyed items. Another concern is water consumption in the production of synthetic dyes, and water pollution is an even bigger problem. Wastewater from the textile dyeing industry is one of the most polluted in the world (Patra 2016).

Numerous harmful factors can also be identified in the manufacturing of cartridges and printing inks. The plastic material used to manufacture the cartridges needs 450 to 1,000 years to decompose, and globally, approximately 375 million cartridges are discarded annually, which amounts to about 11 every second (The Recycler 2017). We also throw away a vast number of printed materials in the form of packaging, magazines, books, flyers, etc., printed with chemical printing inks, whose components sooner or later end up in the soil, water and atmosphere (Krosofsky 2021).

Printing inks contain pigments and dyes, as well as additives to improve persistence and binders that bind the components together. The binder can be water, oil or a solvent. Due to better environmental awareness nowadays, there is a resurgence in the use of vegetable oils—the most commonly used are soybean, linseed, and rapeseed oil, with soybean oil yielding the best results (Bambooink 2018).

Consumer-grade printers that use printing inks based on soy oil are already available on the market. These inks contain various pigments, waxes and resins and can produce highly saturated colour images. Waste printed material using this type of ink is also more readily recycled, as soy-based inks are easier to remove from paper pulp (Krosofsky 2021). While soy oil-based printing inks are in fact more ecological, petrochemical additives are still used in their production. These inks are therefore not an ideal solution (The Inktank 2019). It is also important to note that the label "soy oil-based printing ink" does not guarantee that the ink is made exclusively from this ingredient. According to current laws, a product so labelled is only required to contain 6 to 40% of soy. Currently, there are no printing inks on the market that are entirely made from renewable sources or without chemical additives. Algal printing inks on water or soy bases come closest, but these are currently only available in black shades. In addition, these inks are only compatible with specific printing methods (screen printing, flexography and offset printing), which do not include inkjet printing (Ecoenclose 2022).

RESPONSE TO THE IDENTIFIED ISSUES

Producing natural printing inks, choosing the subject and printing

The goal of the assignment was to create inkjet printing inks from entirely natural, easily accessible materials. Mucik set out to develop inks for CMYK printing that could be used with a home printer and then use them to print her own original photographs of flowers.

To make natural cyan ink, Mucik chose blue spirulina, as it yields an intense colour similar to factory-made cyan printing ink. The substance that gives blue spirulina its characteristic blue colour is called phycocyanin. This water-soluble pigment is extracted from green spirulina, an alga that is actually green-blue in colour. Blue spirulina is primarily used in the food and cosmetic industries (Kuddus et al. 2013). Magenta ink was

obtained from beetroot. The pinkish-red shades in beetroot bulbs are due to betanin. For the production of yellow printing ink, she used dry saffron, which gets its yellow shades from a carotenoid pigment. The biggest challenge, Mucik points out, was obtaining black ink, since no black pigment or dye exists in the plant world. After unsuccessful attempts with some other ingredients, the author settled on acorn coffee and iron oxide for black ink.[1] The acorn gets its black shades from tannins, which blacken in reaction with iron oxide.

In the course of her research, Mucik found that successful printing with plant-derived inks crucially depends on the particle size and viscosity of the ink. The latter is important because the printhead comes from the factory adapted for the use of inks of a certain density. If the ink is thicker or thinner than the factory ink, problems can arise in the density of the layer it applies and in the spreading of the ink dot. Through laboratory testing, the author determined that the viscosity of the natural inks obtained in the research is sufficiently close to that of factory inks. The filtration of natural inks posed more challenges. If the particles in the inks are too large, they clog the nozzles on the printheads, which causes them to stop printing or white lines to appear in prints. Mucik achieved the appropriate particle size by using several different types of filtration in sequence. For the first filtration, she used a kitchen strainer, then a coffee filter, followed by filtering through a 50-micron mesh sieve, and finally gradual filtration using 12-micron filters and 2-micron with the help of a homemade vacuum pump (Junkyard – Origin of Creativity 2016). **FIG. 16**

The selection of photographic subjects for printing with natural printing inks focused on plants with flowers in basic CMYK colours or that most closely approximate those. Echoing her experience in the preparation of natural ink for printing, Mucik had the most difficulty in finding a black flower, as black flowers do not exist in nature. There are varieties with dark red or dark violet flowers that appear partially black. The flower that comes closest to black is the petunia (*Petunia*), as its flowers have a velvety surface that does not reflect much light.

For the initial printing experiments, Mucik chose wide shots of plants in basic colours and printed them in ten layers. She used basic printing settings. To prevent wrinkling due to the numerous layers of ink, the author used thicker 240-gram paper. **FIG. 17–18**

① This was extracted from white vinegar in which rusty objects had been soaked for several days.

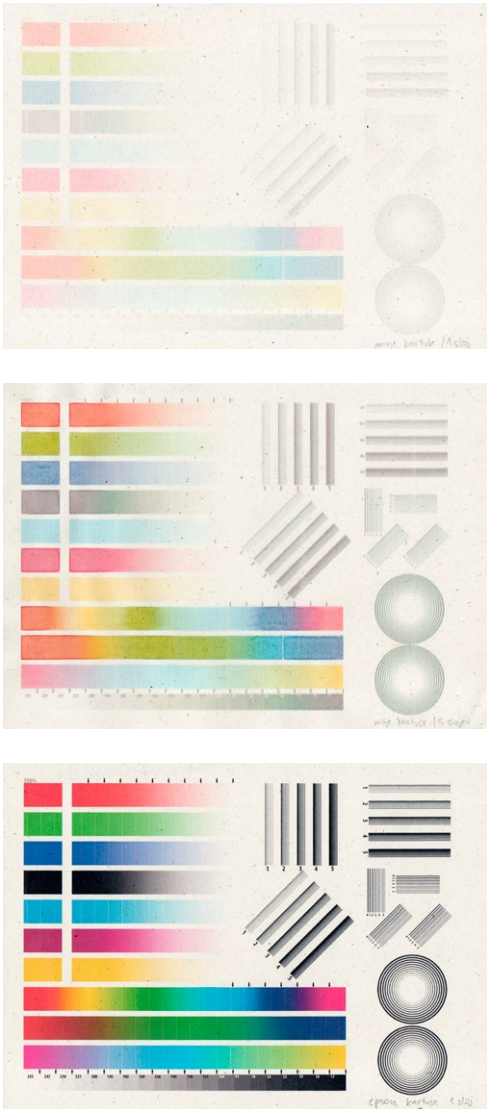

FIG. 16

Tilyen Mucik, from top to bottom—1 application of plant-derived printing inks, 10 applications of plant-derived printing inks, and 1 application of original Epson printing inks. An older generation Epson printer was used for printing, which, due to its lower resolution, allows for the printing of larger particles and has printing inks stored in pouches, 2022, author's archive.

Tilyen Mucik, od zgoraj navzdol – 1 nanos rastlinskih tiskarskih barv, 10 nanosov rastlinskih tiskarskih barv in 1 nanos originalnih tiskarskih barv Epson. Za tisk je bil uporabljen tiskalnik Epson starejše generacije, ki zaradi slabše resolucije omogoča tiskanje večjih delcev in ima tiskarske barve shranjene v vrečkah, 2022, arhiv avtorice.

FIG. 17

Tilyen Mucik, each flower in the basic CMYK colours, printed in their own channel, 2022, author's archive.

FIG. 17

Tilyen Mucik, vsak od cvetov v osnovnih barvah cmyk,
tiskan v svojem kanalu, 2022, arhiv avtorice.

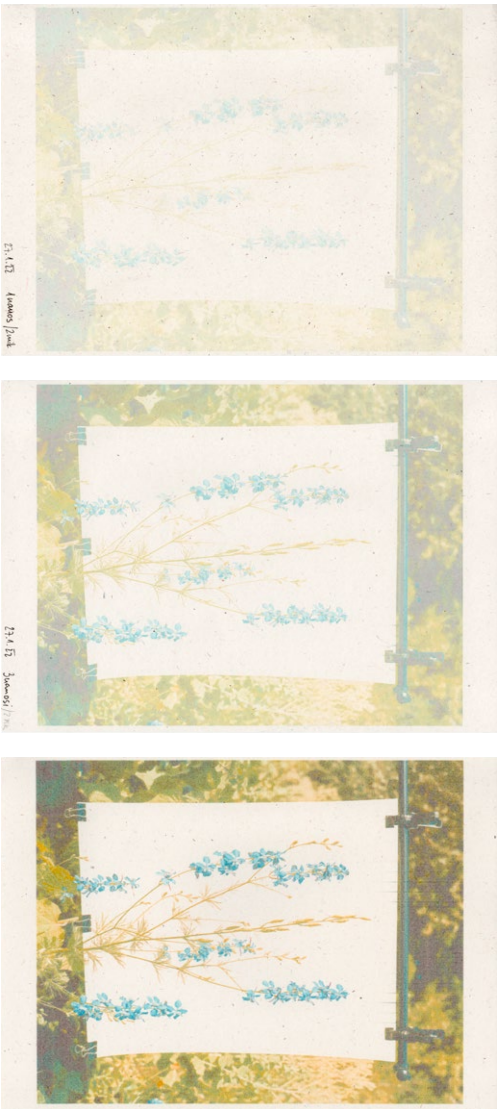

FIG. 18

Tilyen Mucik, From top to bottom—1 application, 3 applications and 10 applications of the plant-derived printing inks, 2022, author's archive.

Tilyen Mucik, od zgoraj navzdol – 1 nanos, 3 nanosi in 10 nanosov rastlinskih tiskarskih barv, 2022, arhiv avtorice.

One of the main motivations for this research was to critically examine the ecological aspect of printing. After conducting the tests, however, the author concluded that at the moment, this cannot be considered an ecological solution. The main shortcoming of plant-derived printing inks, according to Mucik, is their rapid deterioration. She found through numerous tests that the printer could only print smoothly for up to 48 hours after the introduction of the inks into the cartridges. The problem is that cleaning the nozzles on the printheads and the tubes through which the ink flows in an inkjet printer is extremely difficult and time-consuming. As a result of the damage caused by the use of natural printing inks, more than one printer would be used and discarded for just one completed printed image. Moreover, each new print job would require a brand-new printer, as it turned out that purging inks from used devices is practically impossible due to the factory protections. To print with home-made inks from natural ingredients, the printer would need to be modified or alternatively manufactured in such a way that even prolonged use of such inks would not damage it.

As an additional challenge from an ecological standpoint, Mucik highlights the persistence of the printed images. Due to the organic origin of the dyes, their qualities change rapidly over time. Plant dyes are more sensitive to external factors and fade much faster than chemical ones. To protect the prints, the author had to use a large number of plastic sleeves during the project's development.

But just as the images created in the course of the project are "alive", so is the process itself. Mucik points out that humans often perceive nature as unpredictable, incomprehensible and independent. Throughout the development of the project, the behaviour of natural materials, specifically plant dyes and pigments, always presented an unknown to the author. Likewise, the author could not foresee how long the project would take; some natural processes simply cannot be accelerated, she says, adding that creating and using natural ingredients forces the creator to avoid rushing the process and to adjust their clock to "natural time". The natural material, Mucik argues, operates "according to its own laws", which can be extremely frustrating for creators if they do not reconcile with the idea that it is the very unpredictability of such creation that gives it meaning. Mucik is convinced that the fact that not everything goes according to plan makes the works unique, irreplaceable and perfect in their imperfection.

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Študija primera 5 BELA MODRA ČRNA RDEČA ZELENA

RAZVOJ TISKARSKIH BARV ZA KAPLJIČNI TISK IZ TRAJNOSTNIH/ NARAVNIH VIROV IN NJIHOVA UPORABA PRI RAZISKOVANJU BOTANIČNE FOTOGRAFIJE

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MENTORICA	doc. mag. Emina Djukić
SOMENTOR	mag. Gregor Lavrič
ŠTUDIJSKI PROGRAM IN SMER	Oblikovanje vizualnih komunikacij, Fotografija
LETO	2022

Ideja o naravnih tiskarskih barvah je nastala kot odgovor na vprašanje, ali lahko iz rastlin pridobimo tiskarske barve in z njimi natisnemo fotografije rastlin. Cilj projekta je bil razviti tiskarske barve za kapljični tisk iz trajnostnih, naravnih virov in jih uporabiti pri raziskovanju botanične fotografije.

IZHODIŠČE

Viri in vrste naravnih barvil

Pridobivanje barv iz naravnih virov se je domnevno istočasno razvilo po vsem svetu že v neolitiku, približno 10.000 let pr. n. št. Ohranjeni dokazi, ki jih najdemo po jamskih stenah, na školjkah, kamnih, koži in perju, kažejo na barvanje z naravnimi pigmenti iz mineralov. Zaradi pomanjkanja pisnih zapisov in narave barvanih materialov je težko natančno izslediti točne podatke o starosti in vrsti barvil, saj ta hitro razpadejo, razen če so zelo dobro zaščitena – na primer pri tehnikah mumifikacije starih grobnic. Najzgodnejši pisni viri o barvanju segajo na Kitajsko leta 2.600 pr. n. št., in sicer z recepti za rdeča, črna in rumena barvila (Behan 2018, 10–14).

Skozi zgodovino so bila po vsem svetu naravna barvila in vlakna značilna za lokalno bioregijo. Razpoložljivi naravni viri so pomagali oblikovati potencial barv, načine, s katerimi so ustvarjena vlakna, ter orodja in metode, s katerimi se barva nanaša. Nekateri kraji so bogati z rastlinami, ki ponujajo vznemirljive barve, na primer svetlo rožnate in rdeče barve sapanovega lesa v Indiji (rastlina *Biancaea sappan*), redko indigo barvilo iz tropskih krajev, živo rožnate barve insektov vrst kaparja *Dactylopius coccus* iz Mehike in spoštovane tirijske vijoličaste barve starih Feničanov iz zahodnega Sredozemlja, pridobljene iz morskih polžev Murex. V Evropi se je barvna paleta nagibala k nežnejšim odtenkom rožnate, rumene, zemeljsko pomarančne, rjave in svetlo zelene barve (Behan 2018, 10–14).

Naravna barvila se še danes pridobivajo iz rastlin, mineralov in žuželk, pri čemer rastline zagotavljajo največjo barvno paleto, uporabimo

pa lahko vse njihove dele – liste, cvetove, stebla, korenine, jagode, oreščke, semena, les, lubje, pa tudi glive in lišaje. Mineralna barvila sestavljajo pigmenti zemlje in kamnin, živalska barvila pa pogosto sestavljajo barvila iz različnih žuželk. Naravna barvila lahko uporabljamo za barvanje tekstilij, papirja, usnja, lesa ali keramike (Behan 2018, 10–14).

V nasprotju s sintetičnimi so naravna barvila za okolje veliko manj obremenjujoča, hkrati pa so tudi cenejša za proizvodnjo. Večino primernih rastlin za pridelavo naravnih barvil lahko sami enostavno gojimo na vrtu, njivi oz. v nasadu. Danes je raba naravnih barvil omejena predvsem na domačo in obrtno rabo, uporabljajo jih tradicionalni obrtniki in le peščica komercialnih podjetij po vsem svetu (Patra 2016).

KRITIČNO PREČENJE PROBLEMA

Škodljivi vplivi sintetičnih barvil in tiskarske industrije

Sintetična barvila imajo številne negativne vplive na naravno okolje in organizme. V prvi vrsti so ogroženi delavci v proizvodnjah sintetičnih barvil, ki so dnevno neposredno izpostavljeni kemikalijam. Pri zaposlenih se pojavljajo kožne bolezni, težave z dihali ter druge vrste kroničnih zdravstvenih težav, celo smrtonosnih. Škodljive kemične spojine pa vplivajo tudi na potrošnike, ki nosijo, uporabljajo ali obdelujejo barvane predmete. Skrb vzbujajoča je tudi poraba vode v postopkih izdelave sintetičnih barvil, še večji problem pa je onesnaženost voda. Odpadna voda iz industrije barvanja tekstila je denimo ena od najbolj onesnaženih voda na svetu (Patra 2016).

Veliko škodljivih dejavnikov je mogoče izpostaviti tudi pri izdelavi kartuš in tiskarskih barv. Plastična masa, iz katere so izdelane kartuše, se razkraja od 450 do 1.000 let, na leto pa jih globalno zavržemo okoli 375 milijonov, kar je približno 11 kartuš vsako sekundo (The recycler 2017). Poleg tega je zavrženih tudi ogromno tiskovin v obliki embalaž, revij, knjig, letakov ipd., natisnjenih s kemičnimi tiskarskimi barvami, katerih sestavine slej ko prej pristanejo v zemlji, vodi in ozračju (Krosofsky 2021).

Tiskarske barve so sestavljene iz pigmentov in barvil, dodatkov, ki izboljšajo obstojnost, in iz veziv, ki vse sestavine povežejo. Vezivo je lahko voda, olje ali topilo. Danes se zaradi boljše okoljske ozaveščenosti vračajo trendi uporabe rastlinskih olj – največkrat uporabljena so sojino, laneno in repično, pri čemer daje najboljše rezultate sojino olje (Bambooink 2018).

Na trgu so že tiskalniki za domačo uporabo, ki uporabljajo tiskarske barve na osnovi sojinega olja. Te tiskarske barve vsebujejo različne pigmente, voske in smole ter dosežejo zelo nasičene barvne podobe. Prav tako je odpadne tiskovine, natisnjene s tovrstnimi barvami, lažje reciklirati, saj je tiskarske barve na osnovi soje lažje odstraniti s papirne pulpe (Krosofsky 2021). Barve na osnovi sojinega olja so bolj ekološke, a še vedno se pri njihovi izdelavi uporabljajo petrokemični dodatki. Zato tudi te barve niso idealna rešitev (The Inktank 2019). Poleg tega je pomembno upoštevati, da oznaka »tiskarska barva na osnovi sojinega olja« ne zagotavlja, da je barva v celoti izdelana iz omenjene sestavine. Po zakonih mora izdelek s takšnim nazivom namreč vsebovati le 6–40 % soje. Za zdaj na trgu še ni tiskarskih barv, ki bi bile v celoti izdelane iz obnovljivih virov ali brez dodatka kemičnih sestavin. Najbližje so tiskarske barve iz alg na vodni ali sojini osnovi, vendar so trenutno le v črnih odtenkih. Poleg tega so te tiskarske barve kompatibilne le z določenimi vrstami tiska (sitotisk, flexo tisk in offset tisk), med katerimi ni kapljičnega tiska (Eco-enclose 2022).

ODGOVOR NA PREPOZNANO

Pridobivanje naravnih tiskarskih barv, izbor motivov in tisk

Cilj naloge je bil izdelati tiskarske barve za kapljični tisk iz povsem naravnih, lahko dostopnih materialov. Mucik si je zastavila razvoj barv po modelu CMYK, ki bi bile primerne za uporabo z domačim tiskalnikom, in nato njihovo uporabo za tisk avtorskih fotografij cvetlic.

Za izdelavo naravne barve *cyan* je Mucik izbrala algo modra spirulina, saj je njena barva intenzivna in podobna tovarniški tiskarski barvi cyan. Spirulini daje značilno modro barvo pigment fikocianin. Ta vodotopni pigment je ekstrahiran iz zelene spiruline, ki je sicer zeleno modre barve. Modra spirulina se v osnovi uporablja v prehrambni in kozmetični industriji (Kuddus et al. 2013). Barvo *magenta* je Mucik pridobila z uporabo rdeče pese. Gomoljem rdeče pese daje rožnato rdeče odtenke barvilo betanin. Za izdelavo tiskarske barve *yellow* je uporabila suh žafran, ki mu daje rumene odtenke barvilo karotenoid. Mucik izpostavi, da je največ preglavic povzročalo pridobivanje barve *black*, saj v rastlinskem svetu ni mogoče najti črnega pigmenta ali barvila. Po neuspelih poskusih z nekaterimi drugimi sestavinami je avtorica za barvo *black* uporabila želodovo kavo

in železov oksid.[1] Želodu črne odtenke dajejo tanini, ki v reakciji z železovim oksidom počrnijo.

Mucik je med raziskavo ugotovila, da sta za uspešen postopek tiskanja z rastlinskimi barvami ključnega pomena velikost delcev in viskoznost barv. Slednja je pomembna, ker je glava tiskalnika tovarniško nastavljena na določeno gostoto barv, ki jih nanaša na papir. Če je barva gostejša ali redkejša od tovarniške, lahko nastanejo težave pri gostoti sloja, ki ga nanaša, in pri razlivanju barvne pike. S pomočjo laboratorijskega testiranja je avtorica dognala, da je viskoznost pridobljenih naravnih barv dovolj podobna vrednostim tovarniških barv. Zahtevnejši postopek je pomenila filtracija naravnih barv. Če so delci v barvah preveliki, se namreč zamašijo šobe na glavah tiskalnika, zato prenehajo tiskati ali pa se v natiskanih delih pojavljajo bele črte. Mucik je pri pripravi naravnih barv opravila več vrst zaporednih filtriranj, s čimer je dosegla ustrezno velikost delcev. Za prvo filtracijo je uporabila kuhinjsko cedilo, zatem kavni filter, nato je sledilo filtriranje skozi 50-mikronsko sito in nazadnje še postopna filtracija s filtri v gostoti 12 mikronov in 2 mikrona z doma izdelano vakuumsko črpalko (Junkyard – Origin of Creativity 2016). **FIG. 16**

Fotografiranje motivov za tisk z naravnimi tiskarskimi barvami je bilo osredotočeno na rastline, ki imajo cvetove v osnovnih barvah cmyk oziroma so njihov najboljši približek. Mucik je imela – podobno kot pri pripravi naravne barve za tisk – največ težav z iskanjem črne cvetlice, saj črni cvetovi v naravi ne obstajajo. Poznamo sorte s temno rdečimi ali temno vijoličastimi cvetovi, ki so videti delno črni. Najbolj črn cvet ima petunija (Petunia), saj je površina njenih cvetov žametna in tako ne odbija veliko svetlobe.

Za prve poskuse tiska je Mucik izbrala široke plane rastlin osnovnih barv in jih natisnila v desetih slojih. Nastavitve tiskanja so bile osnovne. Da bi se izognila gubanju zaradi številčnih slojev barve, je avtorica uporabila debelejši 240-gramski papir. **FIG. 17–18**

Eden izmed glavnih razlogov za pričujočo raziskavo je bilo prevpraševanje ekološkega vidika tiska. A po vseh opravljenih preizkusih je avtorica ugotovila, da v tem trenutku še ne moremo govoriti o ekološki rešitvi. Mucik kot glavno pomanjkljivost rastlinskih tiskarskih barv izpostavi to, da se začnejo zelo hitro kvariti. Avtorica je namreč skozi številne preizkuse ugotovila, da lahko tiskalnik brez težav tiska le do 48 ur po vstavitvi

[1] Ta je pridobljen iz alkoholnega kisa, v katerem so nekaj dni namočeni zarjaveli objekti.

tiskarskih barv v kartuše. Problem je namreč v tem, da je pri brizgalnem tiskalniku izredno težko in zamudno očistiti šobe na glavah in cevke, po katerih teče barva. Zaradi okvar, ki jih povzročijo naravne tiskarske barve, bi za le eno dovršeno natisnjeno podobo v procesu porabili in zavrgli več kot en tiskalnik. Poleg tega bi bilo treba za vsako novo tiskanje uporabiti popolnoma nov tiskalnik, saj se je izkazalo, da je že uporabljene naprave praktično nemogoče očistiti barv, ker so naprave tovarniško zaščitene. Za tiskanje z doma narejenimi barvami iz naravnih sestavin bi bilo treba torej tiskalnik predelati oz. izdelati na način, da se tudi ob dolgotrajnejši rabi takšnih barv ne bi poškodoval.

Kot dodaten izziv z vidika ekologije Mucik izpostavi ohranjanje natisnjenih podob. Ker gre za barve organskega izvora, se njihove kvalitete čez čas hitro spreminjajo. Rastlinska barvila so občutljivejša za zunanje dejavnike in bledijo veliko hitreje od kemičnih. Da bi zaščitila natisnjena dela, je avtorica med razvojem projekta uporabila veliko plastičnih map.

A kot so »žive« podobe, ki so nastale v projektu, je »živ« tudi postopek. Mucik izpostavi, da je v človeških očeh narava velikokrat nepredvidljiva, nerazumljiva in samosvoja. Med razvojem projekta je to, kako se bodo obnašali naravni materiali, natančneje rastlinska barvila in pigmenti, avtorici vselej pomenilo neznanko. Prav tako avtorica ni mogla vnaprej predvideti, kako dolgo bo projekt trajal, saj, kot pravi, nekaterih naravnih procesov ne moremo pospešiti. Ob tem doda, da ustvarjanje z naravnimi sestavinami ustvarjalca prisili, da ne prehiteva dogodkov in da svojo uro prilagodi »naravni uri«. Mucik trdi, da naravni material deluje »po svoje«, kar je za ustvarjalce lahko izredno frustrirajoče, če se ne sprijaznijo z idejo, da je ravno nepredvidljivost tovrstnega ustvarjanja tisto, kar mu daje smisel. Mucik je prepričana, da ravno to, da ne gre vse po načrtu, naredi dela unikatna, neponovljiva in popolna v njihovi nepopolnosti.

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MAGISTRSKO DELO

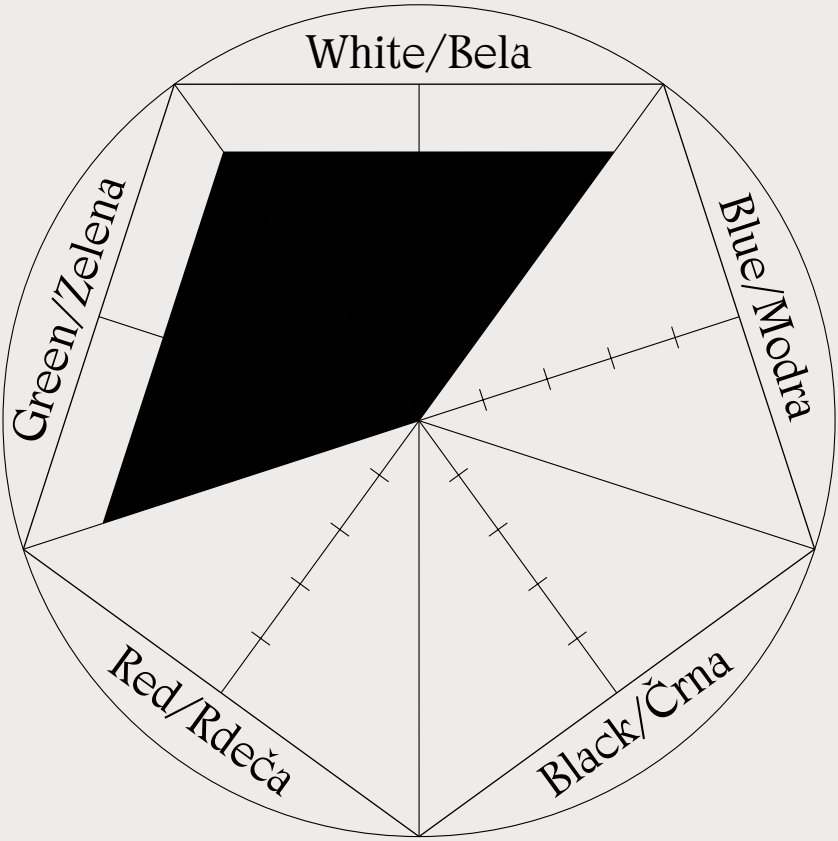
CASE STUDY

6

ŠTUDIJA PRIMERA

Mapping

Mapiranje



WHITE

social design, community, safety, participation

BLUE

BLACK

RED

GREEN

nature as a model, in tune with nature, regeneration, ecology

BELA

družbeno oblikovanje, skupnost, varnost, participacija

MODRA

ČRNA

RDEČA

ZELENA

zgledovanje po naravi, sonaravno, regeneracija, ekologija

Case Study 6

WHITE BLUE BLACK RED GREEN

CONCEIVING A NEW DESIGN APPROACH FOR THE REGENERATION OF THE NATURAL ENVIRONMENT AND HUMAN NATURE

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PRACTICAL MENTOR	Prof. Jure Miklavc
STUDY PROGRAMME AND COURSE	Industrial Design and Applied Arts, Industrial Design
YEAR	2020

In most cases, design still relies on approaches and methods aimed at finding solutions that promote consumption. This typology of design contributes to environmental degradation and deepens social inequalities. Addressing these problems requires new design strategies that have the well-being of the environment and society as their primary objective. The goal of the thesis was to conceive a design approach that would support a better understanding and addressing of current socio-environmental challenges.

STARTING POINT

Broken (human) nature[1]

The impact of human activity on the planet's ecosystem is so drastic that it is altering the geological composition of the planet (Bagley 2013) and leading to largely irreversible consequences, which are emerging at an alarming rate (Carrington 2016). The predominant political-economic system creates existing values and ideologies, which result in destructive behaviour, and is therefore at the core of the problem (Salecl 2011, 9–10). As Lašič Jurković and Repenšek explain, a number of data indicate that the

① The concept was developed to submit an application for the XXII Milan Triennial, themed *Broken Nature: Design Takes on Human Survival*. Part of the text was previously published in a book released in conjunction with the exhibition bearing the same title as the triennial edition. Tamara Lašič Jurković in Valentina Repenšek, Obnavljanje zlomljene (človeške) narave, as cited in: *Misliti pogoje našega časa* (ed. Barbara Predan), Ljubljana 2019, pp. 133–141.

system creates the deceptive illusion of constant growth as a prerequisite for the population's well-being and satisfaction (Raworth 2017, 26), while disregarding the fact that this is unattainable on a finite planet (Monbiot, 2020). This is why, according to the authors, there is a need for alternatives that will set new goals and support new values, thereby promoting different behaviours.

The main cause of the behaviour causing broken nature—as the organisers of the XXII Milan Triennial called the environmental crisis—is broken human nature. Human nature can be understood as permanent, and the way it is influenced determines how it is reflected in an individual's actions and their impact on others/their environment. It is therefore a biological predisposition influenced by external factors that we co-create (Fry 2012, 92). These factors, once natural, are today man-made, i.e. artificial—both in terms of the physical environment and the social construct (Dilnot 2014, 188–189).

The planetary ecosystem is inherently efficient and self-sufficient. Humans are part of this system and dependent on it; this is not intrinsically problematic, although issues arise when human interference in the environment exceeds the planet's capacity for self-renewal (Dryzek 2018, 40–41). As Tony Fry argues in his work *Becoming Human by Design*, the steady growth of the artificial environment started causing interference during the Enlightenment. During this period, also known as the Age of Reason, man became aware of humanity's potential and—driven by the desire to dominate nature—began to over-exploit it in the pursuit of advantage. With the rise of the Enlightenment and the constant drive to surpass the limits of one's own capacities, a new centre became established as the focal point of the coming era: man (Fry 2012, 22).

Today, the values of the predominant capitalist system, such as individualism, competitiveness and anthropocentrism, exert a marked impact on some of the natural human qualities needed for survival; anthropocentrism suppresses our empathy, and individualism contradicts our natural tendency to form communities, while competitiveness further fosters fear and human selfishness. Or, as Lašič Jurković and Repenšek also point out: we act contrary to our nature, which results in destructive actions and attitudes towards the environment.

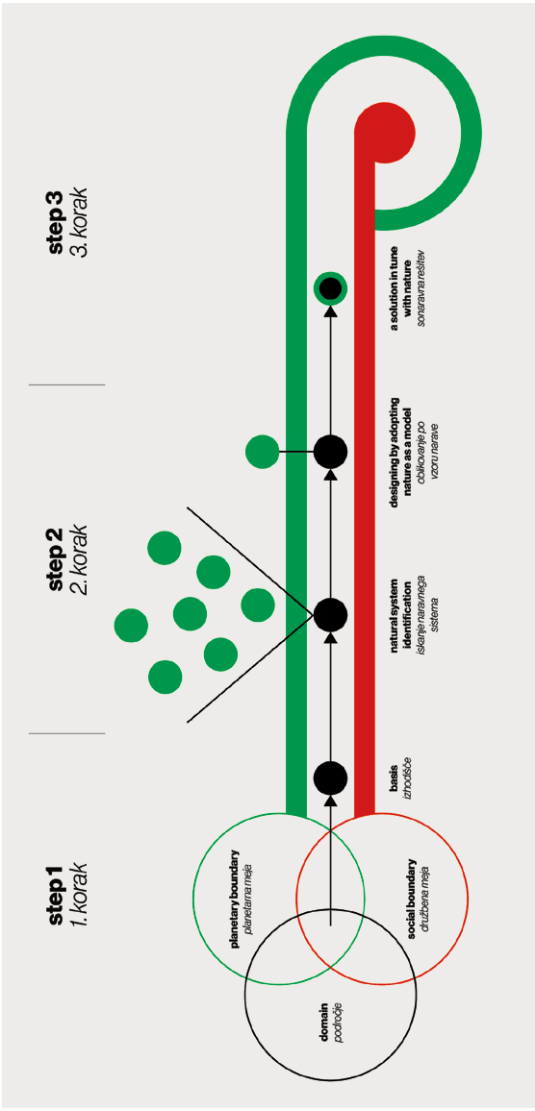

FIG. 19

Tamara Lašič Jurković and Valentina Repenšek, scheme of the design approach for the regeneration of the natural environment and human nature, 2020.

Tamara Lašič Jurković in Valentina Repenšek, shema oblikovalskega pristopa za regeneracijo naravnega okolja in človeške narave, 2020.

FIG. 20

Tamara Lašič Jurković and Valentina Repenšek, prototype of a chair renewed in accordance with the REsense principle, 2018. Photo: Aleš Rosa

Tamara Lašič Jurković in Valentina Repenšek, prototip stola, prenovljenega po principu REsense, 2018. Foto: Aleš Rosa.

The consequences of a system based on endless growth

The capitalist system is essentially based on the exploitation of the planetary ecosystem. As such, it presumes infinite growth on a planet that is not growing, which results in accelerated environmental degradation. In 2019, the date when humanity's resource consumption for the year exceeded the planet's ability to regenerate those resources was July 29 (Global Footprint Network 2019). Our consumption of resources is accelerating every year. Rituparna Sengupta writes:

> The estimated level of resources and ecosystem services required to support human activities today is just over 1.7 Earths, fast moving to becoming 2 Earths by 2030.

In his work, *The Politics of the Earth*, John S. Dryzek furthermore points out that for several centuries it seemed that unconstrained economic growth was the natural order of things, and social survival in finite systems was simply not conceptualised. Around 1970, the issue became increasingly apparent with accelerated population growth; this trend increased the awareness that combined with economic growth, population explosion was going to exhaust stocks of energy, cropland, clean water, minerals and the assimilative capacity of the atmosphere and oceans (2018, 40–41).

Dryzek illustrates this by drawing attention to the essay *The Tragedy of the Commons*, in which Garrett Hardin, based on the example of the common land, explains the simple logic governing the village commons:

> Facing a decision about whether or not to put an extra cow on the village commons, each rational self-interested peasant will recognize that the benefits of the extra cow accrue to himself alone, whereas the costs (stress upon the commons) are shared with the other villagers. Thus all villagers will quickly put more cows on the commons, which will in turn be destroyed. Hardin was using the commons of a medieval village as a metaphor for all kinds of environmental resources [...]. So each decision maker deciding whether or not to catch an additional netful of fish, or dump an additional ton of sewage, or cut down a tree, or drive an extra mile in Los Angeles,

> or get that malfunctioning catalytic converter fixed, is facing essentially the same decision: private benefit and the public interest point in opposite directions. […]. Of course, all this is only tragic if the commons is finite—that is, if there are limits. If there are no limits, we can populate, grow, and consume at will. (Dryzek 2018, 40)

In this regard, Lašič Jurković and Repenšek recognise the concept of the nine planetary boundaries—developed in 2009 by a group of 28 internationally renowned scientists led by Johan Rockström (Stockholm Resilience Centre 2015)—as an important step in outlining the environmental issues. It was designed to provide a better understanding of our planet's capacities, with the aim of enabling decision-makers and other key social stakeholders to more efficiently catalyse the changes that are essential for our survival as a species. This concept defines nine planetary boundaries, each representing a vital life support system for sustaining life on earth, that together define "a safe operating space for humanity". Boundaries act as a warning, indicating that their crossing will endanger human species, while also serving as a tool for decision-makers to identify the safe operating space for humanity (Dryzek 2018, 47).

But as Lašič Jurković and Repenšek point out, it is wrong to assume that environmental issues can be addressed without considering the social dimension. They describe the interconnection of both aspects by employing the concept of the doughnut economy, in which Kate Raworth (2017) combines the nine planetary boundaries with eleven social domains. The diagram, which resembles a doughnut, clearly presents the reciprocity and interdependence of environmental and social aspects. While planetary boundaries concern overshoot values, social boundaries are, on the contrary, associated with shortfalls. The transgression of any planetary boundary has a direct or indirect impact on people's lives. Therefore, environmental problems cannot be addressed without taking into account social problems.

It is at this point that, according to Lašič Jurković and Repenšek, the field of design becomes relevant. It, however, too often operates influenced by the current economic and political system, pursuing the aim of uncritical production of marketable products or, in the case of design studies, marketable human resources. In the field of design, success is still too often measured in terms of the apparent satisfaction of the user, which ensures continuous consumption and thus the perpetuation of the existing system. Too many design degree programmes are still based on training that is focused on understanding consumer preferences and constantly

creating something newer, better, more appealing and more convincing. The never-ending design process—just like the system in which it operates—disregards the long-term negative effects of its activities.

In contrast to what has been described so far, Lašič Jurković and Repenšek recognise in the doughnut a compass that could guide designers in identifying the issues that need to be addressed and the starting point from which to undertake regeneration in order to restore the lost balance. They furthermore argue that it could also provide a benchmark for evaluating our actions (not only in the field of design), as it points to the impact that our actions exert on the environment as well as on the individual and society.

RESPONSE TO THE IDENTIFIED ISSUES

A design approach for creating a balance between the natural environment and society

Design is essentially an activity of creating the artificial in which designers not only decide what to create but also have the ability to foresee, to some extent, the consequences of their own work. Therefore, according to Lašič Jurković and Repenšek, designers should focus even more on creating the right conditions for our survival. The future of producing what is today usually referred to as the artificial, i.e. the future of the process known as "design", should become natural and sustainable. Or, as Rachel Carson emphasised as early as the 1960s in her book *Silent Spring*, interventions in the natural environment should be guided by natural principles. Humans should be aware that the natural environment is highly diverse and has built-in defence mechanisms to establish balance and control the relationships between living things (Carson 1962).

Over millions of years of evolution, nature developed tried and tested systems, which demonstrate balanced functioning. These natural systems (e.g. mycorrhiza, pollination, evapotranspiration, symbiosis), which are completely sustainable, self-sufficient and functional, can serve as models for human designs. It is important to note that the proposed approach goes beyond the mere imitation of natural processes; instead, it builds on transposing the insights concerning the functioning of natural processes and mechanisms that govern the establishment and maintenance

of balance, as this is the only method to ensure long-term, functional results. This is particularly true of all those areas where environmental and social boundaries are already significantly overshot, therefore they require regenerative solutions.

The authors stress that regenerative design implies much more than a sustainable approach. The latter, in fact, merely maintains the current status by not causing further damage, whereas regenerative design entails a holistic view of living systems and requires active engagement with the natural environment within ecosystems (Wahl 2017).

While regenerative design concentrates especially on ecosystems, the challenges of the inner, social segment of the "doughnut" are addressed by the so-called social design. Nynke Tromp and Paul Hekkert (2019) in their book *Designing for Society* write that the role of social design is to help mankind, or, in other words, to serve the common good. "It requires a shift away from thinking about *what* to design, and towards the *value* the design will achieve – and how it will achieve that." (Tromp 2019, 24). The authors of *Designing for Society* also argue that a better society requires a redefinition of relationships, the establishment of new ties and a transformed understanding of both the natural environment and human activities within it—that is to say, it requires a change in the behaviour of individuals. Design has the power to create the infrastructure and conditions necessary for the realisation of our newly formed beliefs, values and attitudes (Tromp 2019).

However, according to Jurković and Repenšek, it is necessary to be aware that designers cannot achieve this in isolation and independently from others. On the contrary, in the context of designing for society, a participatory approach is essential; it is characterised by the inclusion of people who will potentially be affected by the project's outcome in the design process. As Ezio Manzini underlines, it is necessary to accept that design experts are co-creators of a broad design process that they can trigger, support, but not control. In this way, they can become effective agents of change, contributing to its realisation through their activity (2015, 67).

↪ Homo sapiens, it turns out, is the most cooperative species on the planet, outperforming ants, hyenas, and even the naked mole-rat when it comes to living alongside those who are beyond our next of kin. [...] [A]long with our propensity to trade, we are also drawn to give, share, and reciprocate. That may be because cooperation enhances our own group's chances of survival. (Raworth 2017, 104)

As Lašič Jurković and Repenšek further point out, the designer has to sow the seeds that change behaviour and build a better community—in other words, help to regenerate our human nature. Co-design, participatory design and other practices that empower individuals and the community are therefore in line with human nature, while at the same time fostering and regenerating it. Such "seeds" enable the establishment of new relationships and strengthening of the social fabric, and thus contribute to building an alternative to the currently predominant capitalist system.

In the master's thesis, the authors, drawing on these observations, developed a new design approach to regenerate the natural environment and human nature, which can serve as a means for designers to comprehend the complexities of the climate and societal crisis, stimulate research into the workings of the planetary ecosystem and provide guidance for maintaining the balance between the natural environment and society. The authors organised the devised process into three steps. The first two steps involve new tools—the doughnut and adopting nature as a model—while the third step is based on established design methods. (FIG. 19)

The aim of the first step is to define the planetary and social boundaries and the scope of the design. The foundation is laid by understanding the individual planetary and social boundaries and their interrelatedness. In practice, this means that we primarily select the boundaries and the domain to be addressed by the project (if there is the possibility of independent choice), while in the case of a commission with a predefined scope, the choice should align with the project's desired impact. The selection of planetary boundaries is followed by the identification of connections with social boundaries, i.e. the focus shifts to recognising the boundaries that influence each other. Once all three interconnected components are selected, step 1 is complete. The selected boundaries are consistently considered also in the following phases of the development of the project and are used as reference for a continuous evaluation of the evolving project.

The key aspect of step 2 is that natural processes and systems guide project planning. As the authors explain, this step begins with identifying examples of nature's inner workings—these include relationships within ecosystems, principles, natural laws, characteristics of organisms, etc.—that will provide a model to be translated into designs. It is important to explore these examples in depth, trying to comprehend the underlying logic governing them. This, in turn, informs the selection of the example from the ones examined, whose logic can be applied during the development of a specific project in order to achieve effective and sustainable solutions.

Step 3 is adaptable to various types of projects and follows the phases of established design approaches. It includes research, synthesis, ideation (by applying the logic of natural systems), planning, prototyping, implementation, testing and evaluation. The particularity of this step is that it requires constant monitoring of the project's alignment with both the selected planetary and societal boundaries. Due to the consideration of social boundaries, it is crucial that this phase of the design process incorporate the understanding of stakeholders and end-users needs and preferences by adopting a range of inclusive methods.

The approach for the regeneration of the natural environment and human nature thus combines the following parameters:

- ↪ the concept of the doughnut, allowing designers to direct their work towards tackling socio-environmental issues
- ↪ regenerative and social design as tools for addressing these issues
- ↪ relying on natural systems as models which provide designers with environmentally sound examples of functioning

The process especially appeals to designers who have an affinity for environmentally and socially responsible design but have been lacking appropriate tools to put its principles into action. This approach is innovative because it integrates existing concepts, studies and principles into a cohesive and practical holistic framework.

Lašič Jurković and Repenšek tested the conceived design approach by applying it to a design project. As the focus of the practical component of the thesis they selected the furniture industry, a field that with shifting trends and reliance on inexpensive materials has become increasingly oriented towards fast consumption. Moreover, during the course of their research, the authors found that the furniture industry has an intense impact on three planetary and three social boundaries. Therefore, to address the issue under consideration, they selected as a model a natural process that enables the survival of a species through changes in behaviour. The authors conceptualised a furniture renewal service that utilises waste material while also fostering the creation of emotional value and long-term user relationships, thereby extending the lifespan of the products. **FIG. 20**

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Študija primera 6 BELA MODRA ČRNA RDEČA ZELENA

ZASNOVA NOVEGA OBLIKOVALSKEGA PRISTOPA ZA REGENERACIJO NARAVNEGA OKOLJA IN ČLOVEŠKE NARAVE

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LETO	2020

Oblikovanje še vedno v večini primerov temelji na pristopih in metodah, katerih cilj je iskanje rešitev, ki pospešujejo potrošnjo. Tovrstno oblikovanje prispeva k degradaciji okolja in poglabljanju družbenih neenakosti. Za naslavljanje nastale problematike potrebujemo nove oblikovalske pristope, katerih glavni smoter bo dobrobit okolja in družbe. Cilj naloge je bil zasnovati oblikovalski pristop za boljše razumevanje in naslavljanje aktualnih družbeno-okoljskih izzivov.

IZHODIŠČE

Zlomljena (človeška) narava[1]

Vpliv človekovega delovanja na planetarni ekosistem je tako drastičen, da spreminja geološko sestavo planeta (Bagley 2013), posledice pa se kažejo z alarmno hitrostjo in so hkrati večinoma neizbrisljive (Carrington 2016). Prevladujoč političnoekonomski sistem ustvarja obstoječe vrednote in ideologije, ki vodijo v destruktivno vedenje, zato predstavlja bistvo problema (Salecl 2011, 9–10). Kot na podlagi številnih izmer pojasnita Lašič Jurković in Repenšek, sistem zavaja z iluzijo nenehne rasti kot pogojem za blagostanje in zadovoljstvo prebivalstva (Raworth 2017, 26), pri tem pa ne upošteva, da to ni mogoče na omejenem planetu (Monbiot 2020). Zato po mnenju avtoric potrebujemo alternative, ki bodo postavile nove cilje in podprle nove vrednote ter s tem drugačno vedênje.

[1] Koncept je bil razvit z namenom prijave na XXII. milanski trienale z naslovom *Broken nature: design takes on human survival*, besedilo je bilo deloma že objavljeno v knjigi ob istoimenski razstavi. Tamara Lašič Jurković in Valentina Repenšek, Obnavljanje zlomljene (človeške) narave, v: *Misliti pogoje našega časa* (ur. Barbara Predan), UL ALUO, Ljubljana 2019, str. 133–141.

Glavni vzrok za vedênje, ki povzroča zlomljeno naravo in kot so okoljsko krizo poimenovali organizatorji XXII. milanskega trienala, je zlomljena človeška narava. Človeško naravo lahko razumemo kot stalno, od vplivov nanjo pa je odvisno, kako se kaže v posameznikovem delovanju in vplivu na druge/drugo. Gre torej za biološko predispozicijo, na katero vplivajo zunanji dejavniki, ki jih soustvarjamo (Fry 2012, 92). Nekoč so bili ti dejavniki naravni, danes pa jih je ustvaril človek – in so umetni – tako v smislu fizičnega okolja kot družbenega konstrukta (Dilnot 2014, 188–189).

Planetarni ekosistem je sam po sebi učinkovit in zadosten. Človek je del tega sistema in od njega odvisen – kar samo po sebi ni problematično, težava nastane, ko človekovo poseganje v okolje preseže zmožnosti za samoobnovo planeta (Dryzek 2018, 40–41). Kot trdi Tony Fry v knjigi *Becoming human by design*, se je vztrajna rast umetnega okolja začela zapletati v razsvetljenstvu. V tem obdobju, poimenovanem tudi čas razuma, se je človek zavedal svojih zmožnosti in začel naravo – spodbujen z željo po njeni nadvladi – čezmerno izkoriščati v svojo korist. Z razmahom razsvetljenstva in težnjo po nenehnem preseganju omejitev lastnih zmožnosti se kot središče prihajajočega obdobja vzpostavi nov center: človek (Fry 2012, 22).

Danes vrednote prevladujočega kapitalističnega sistema, kot so individualizem, konkurenčnost in antropocentričnost, izrazito vplivajo na nekatere človekove naravne lastnosti, ki jih potrebujemo za svoje preživetje – antropocentrizem tako zatira našo empatično naravo, individualizem nasprotuje naši naravni težnji po povezovanju v skupnost, medtem ko konkurenčnost v nas dodatno spodbuja strah in sebičnost. Ali kot še izpostavita Lašič Jurković in Repenšek, delujemo v nasprotju s svojo naravo, kar se kaže v destruktivnem delovanju in odnosu do okolja.

KRITIČNO PREČENJE PROBLEMA

Posledice sistema, ki temelji na neskončni rasti

Kapitalistični sistem temelji na izkoriščanju planetarnega ekosistema. Kot tak predvideva neskončno rast na planetu, ki ne raste, kar povzroča pospešeno degradacijo okolja. Leta 2019 smo že 29. julija na svetu porabili več virov, kot jih lahko narava obnovi v enem letu (Footprint network 2019). Vire iz leta v leto porabljamo hitreje. Rituparna Sengupta zapiše:

↪ »Ocenjena količina naravnih virov in ekosistemskih storitev, potrebnih za podporo človekovih aktivnosti, je danes za nekaj več kot 1,7 Zemlje. Do leta 2030 naj bi ta hitro rastoča potreba znašala kar za 2 Zemlji.« (2017)

V knjigi *Politika Zemlje* avtor John S. Dryzek nadalje opozori, da se je več stoletij zdelo, da je neomejena ekonomska rast naravni red stvari, za družbeno preživetje v končnih sistemih pa preprosto še ni bilo koncepta. Okoli leta 1970 je s pospešeno rastjo populacije problem postal očiten, spodbudil je zavedanje, da bo skupaj z ekonomsko rastjo porast populacije črpal zaloge energije, pridelovalne površine, čisto vodo, rude in asimilacijsko zmogljivost atmosfere in oceanov (2018, 40–41).

Dryzek pa dodatno kot primer izpostavi esej *The tragedy of the commons*, v katerem je Garrett Hardin opisal preprosto logiko skupnine na primeru vaškega skupnega zemljišča:

↪ »Kadar bi se kmeti odločali, ali na skupno zemljišče spustiti še eno kravo ali ne, bi vsak ugotovil, da dodatna krava prinese koristi le enemu, medtem ko si bodo stroške oziroma posledice delili vsi vaščani. Na ta način bi kmalu vsi vaščani želeli v skupnino spustiti več krav, kar pa bi zaradi prekomerne rabe povzročilo uničenje skupnine. Avtor je skupnino srednjeveške vasi uporabil kot metaforo za okoljske vire. Vaščane pa v tem primeru kot vse odločevalce, ki se odločajo, ali ujeti še eno polno mrežo rib, ali odvreči še eno tono odpadkov, ali posekati drevo, ali se peljati še eno miljo po Los Angelesu, ali dati v popravilo pokvarjen avtomobilski katalizator ipd. Odločevalci so pravzaprav vsakič soočeni z enako odločitvijo: zasebna korist nasproti skupnemu interesu. Seveda je vse to tragično le, če je skupnina končna – če obstajajo omejitve. Če omejitev ne bi bilo, bi se lahko brezskrbno množili, rastli in trošili.« (Dryzek 2018, 40)

V tem pogledu Lašič Jurković in Repenšek kot pomemben korak v orisu okoljske problematike prepoznata koncept devetih planetarnih meja, ki ga je leta 2009 razvilo 28 mednarodno priznanih znanstvenikov pod vodstvom Johana Rockströma (Stockholm Resilience Centre 2015). Zasnovan je bil za boljše razumevanje zmožnosti našega planeta, da bi odločevalci in drugi pomembni družbeni akterji lažje naredili preskok v delovanju, ki je potreben za to, da bomo kot vrsta sploh preživeli. Omenjeni koncept definira devet planetarnih meja, ki predstavljajo

vitalne sisteme za vzdrževanje življenja na Zemlji in skupaj definirajo »varni operativni prostor človeštva«. Meje so svarilo, da njihova prekoračitev spravlja človeštvo v nevarnost, in pripomoček, ki odločevalcem pomaga pri določanju varnega operativnega prostora za človeštvo (Dryzek 2018, 47).

A kot še opozorita Lašič Jurković in Repenšek, je zmotno misliti, da lahko okoljsko problematiko rešujemo brez ozira na družbo. Povezovanje enega z drugim opredelita s konceptom ekonomije ameriškega krofa, v katerem je Kate Raworth (2017) prej omenjenih devet planetarnih meja združila z 11 družbenimi temami. V diagramu, katerega oblika spominja na ameriški krof, se jasno izrisujeta recipročnost in soodvisnost okoljskega in družbenega vidika. Če pri planetarnih mejah govorimo o presežnih vrednostih, pri družbenih, nasprotno, govorimo o njihovem primanjkljaju. Prekoračitev katerekoli planetarne meje neposredno ali posredno vpliva na življenja ljudi. Okoljskih problemov tako ne moremo naslavljati, ne da bi upoštevali tudi družbene probleme.

Prav v tej točki po Lašič Jurković in Repenšek postane aktualno oblikovanje. To sicer – podobno kot izobraževanje v polju oblikovanja – v skladu z obstoječim političnoekonomskim sistemom prevečkrat deluje s ciljem nekritičnega produciranja za trg primernih izdelkov ali v primeru izobraževanja za trg primernih kadrov. V oblikovanju se uspešnost še vedno prepogosto meri skozi navidezno zadovoljstvo uporabnika, ki zagotavlja nenehno potrošnjo in s tem ohranjanje obstoječega sistema. Preveč oblikovalskih študijskih programov še vedno temelji na izobraževanju za razumevanje potrošnikovih želja in nenehno ustvarjanje novejšega, boljšega, privlačnejšega in prepričljivejšega. Nikoli zaključen oblikovalski proces se, tako kot sistem, v katerem deluje, ne ozira na dolgoročne negativne učinke delovanja.

V nasprotju z opisanim pa v omenjenem ameriškem krofu Lašič Jurković in Repenšek prepoznata kompas, ki bi oblikovalcem lahko kazal, s katerimi problemi se je treba začeti ukvarjati in kje je treba začeti regeneracijo za ponovno vzpostavitev trenutno izgubljenega ravnovesja. Hkrati pa po njunem mnenju lahko tvori tudi merila za vrednotenje našega delovanja (in to ne samo v oblikovanju), torej opozarja na vpliv našega delovanja tako na okolje kot na posameznika in družbo.

ODGOVOR NA PREPOZNANO

Oblikovalski pristop za vzpostavljanje ravnovesja med naravnim okoljem in družbo

V osnovi oblikovanje pomeni ustvarjanje umetnega, pri čemer oblikovalec odloča o tem, kaj bo ustvaril, in lahko deloma predvidi posledice svojega dela. Zato bi se po mnenju obeh avtoric oblikovalci še toliko bolj morali osredotočiti na vzpostavljanje ustreznih pogojev, ki nam bodo omogočili preživetje. Prihodnost proizvajanja vsega, kar danes navadno označujemo kot umetno – torej procesa, ki ga poznamo pod izrazom oblikovanje – bi moralo postati nekaj (so)naravnega. Ali kot je že v šestdesetih letih prejšnjega stoletja poudarila Rachel Carson v knjigi *Silent spring*, bi človek moral pri poseganju v naravno okolje upoštevati naravne principe. Moral bi se zavedati, da je naravno okolje izrazito raznovrstno in ima vgrajene obrambne mehanizme, s katerimi vzpostavlja ravnovesje in obvladuje odnose med živimi bitji (Carson 1962).

Narava na podlagi evolucije, ki je potekala več milijonov let, ponuja preizkušene in utečene sisteme uravnoteženega delovanja. Oblikovalcem kot zgled ponuja naravne sisteme (npr. mikoriza, polinacija, evapotranspiracija, simbioza), ki so povsem trajnostni, samozadostni in funkcionalni – s poudarkom, da s predlaganim ne vzpostavljamo golega posnemanja naravnih procesov, temveč gradimo na prenosu razumevanja delovanja naravnih procesov, načinov vzpostavljanja in vzdrževanja ravnovesja, saj bodo le tako rezultati tudi dolgoročni in funkcionalni. Slednje še posebej velja za vsa tista področja, katerih okoljske in družbene meje so že danes močno prekoračene, zato je zanje treba iskati rešitve, ki delujejo regenerativno.

Avtorici pri tem poudarita, da regenerativno oblikovanje pomeni veliko več kot trajnostni pristop. Slednji namreč zgolj vzdržuje obstoječe stanje na način, da ne povzroča dodatne škode, medtem ko regenerativnost vzpostavlja celosten pogled na žive sisteme in zahteva aktivno sodelovanje z naravnim okoljem, znotraj ekosistemov (Wahl 2017).

Če je regenerativno oblikovanje bolj usmerjeno v obravnavo ekosistemov, pa izzive notranjega, družbenega dela »ameriškega krofa« obravnava t. i. družbeno oblikovanje. Nynke Tromp in Paul Hekkert v knjigi *Designing for society* zapišeta, da je namen družbenega oblikovanja pomagati človeštvu oziroma služiti skupnemu dobremu (2019). »To zahteva miselni preskok od razmišljanja o tem, *kaj* oblikovati, in proti *vrednosti*, ki jo bo oblikovanje

doseglo – ter kako bo to doseglo« (Tromp 2019, 24). Avtorja knjige *Designing for society* še trdita, da boljša družba zahteva ponovno opredelitev medsebojnih odnosov, vzpostavitev novih vezi, drugačno dojemanje naravnega okolja in delovanja v njem, zahteva torej spremembo vedenja posameznikov. Oblikovanje ima moč vzpostaviti infrastrukturo in razmere, ki omogočajo, da naša nova prepričanja, vrednote in odnose lahko udejanjimo (Tromp 2019).

Ob tem se moramo po Lašič Jurković in Repenšek zavedati, da oblikovalci tega ne moremo delati izolirano, ločeno od drugih. Prav nasprotno, kadar govorimo o oblikovanju za družbo, je zelo pomemben participatoren pristop, katerega bistvo je v oblikovalski proces vključiti ljudi, na katere bo končni rezultat projekta potencialno vplival. Kot opozori Ezio Manzini, moramo privoliti v to, da smo soustvarjalci širšega oblikovalskega procesa, ki ga lahko sprožimo in podpiramo, ne moremo pa ga nadzirati. Tako lahko postanemo aktivni pobudniki sprememb in jih s svojim delovanjem pomagamo uresničiti (2015, 67).

↪ »Izkazalo se je, da je Homo sapiens najbolj kooperativna vrsta na planetu, kadar gre za skupno življenje. Bolj kot mravlje, hijene in celo bolj kot gole miši. To velja tudi za življenje s tistimi, ki niso naši najbližji sorodniki. […] poleg tega, da smo nagnjeni k trgovanju, smo pripravljeni tudi dajati, deliti in vrniti. To je verjetno zato, ker sodelovanje izboljša možnosti za preživetje lastne skupine.« (Raworth 2017, 104)

Oblikovalec mora, kot še poudarita Lašič Jurković in Repenšek, sejati seme, ki spreminja vedenje, gradi boljšo skupnost ali, z drugačnimi besedami, pomaga obnavljati našo človeško naravo. Sooblikovanje, participatorno oblikovanje in druge prakse, ki opolnomočijo posameznike in skupnost, so torej v skladu s človeško naravo in jo hkrati spodbujajo, obnavljajo. Takšno »seme« pomaga vzpostaviti nove medsebojne vezi in utrdi družbeno tkivo ter tako pomaga graditi alternativo trenutno prevladujočemu kapitalističnemu sistemu.

V magistrski nalogi sta na prepoznanem avtorici razvili nov oblikovalski pristop za regeneracijo naravnega okolja in človeške narave, za pomoč oblikovalcem pri razumevanju kompleksnosti problematike podnebne in družbene krize ter kot spodbudo k raziskovanju delovanja planetarnega ekosistema in vodilo pri vzdrževanju ravnovesja med naravnim okoljem ter družbo. Proces sta razdelili na tri korake. Prva dva vključujeta novi orodji – ameriški krof in zgledovanje po naravi. Tretji korak pa temelji na že poznanih oblikovalskih metodah. (FIG. 19)

Cilj prvega koraka je določitev planetarnih in družbenih meja ter področja oblikovanja. Temelj je razumevanje posameznih planetarnih in družbenih meja ter njihova soodnosnost. V praksi to pomeni, da primarno izberemo tiste meje in področje, ki jih želimo s projektom nasloviti (če imamo možnost samostojne izbire); pri naročilu z vnaprej določenim področjem obravnave pa je izbira prilagojena učinkom delovanja. Na podlagi izbranih planetarnih meja pa nato iščemo povezave z družbenimi mejami, torej tiste, za katere ugotovimo, da vplivajo druga na drugo. Ko imamo izbrane vse tri komponente, ki se med seboj povezujejo, je prvi korak zaključen. Izbrane meje tudi v nadaljevanju razvoja projekta ves čas upoštevamo in z njimi sproti evalviramo nastajajoči projekt.

Bistvo drugega koraka je, da nam pri snovanju našega projekta naravni procesi in sistemi kažejo pot. Kot pojasnita avtorici, korak začnemo z iskanjem primerov delovanja narave – to so lahko odnosi znotraj ekosistemov, principi, naravni zakoni, lastnosti organizmov ipd., ki nam bodo dali zgled pri načrtovanju. Ob tem je pomembno, da primere raziskujemo poglobljeno in poskušamo razumeti, na kakšni logiki temeljijo. Šele na podlagi slednjega bomo med raziskanimi primeri lahko izbrali tistega, katerega logiko lahko uporabimo pri razvoju lastnega projekta, in dosegli učinkovite, sonaravne rešitve.

Tretji korak je prilagodljiv glede na tip projekta in temelji na fazah ustaljenih načrtovalskih pristopov. Vključuje raziskavo, sintezo, ideacijo (po logiki naravnih sistemov), načrtovanje, prototipiranje, implementacijo, vrednotenje, testiranje in evalvacijo. Razlikuje se v tem, da moramo vseskozi upoštevati, da projekt ustreza tako na izbrane planetarne kot tudi družbene meje. Zaradi slednjih moramo biti v tem delu pozorni, da v načrtovalski proces vpeljemo razumevanje potreb in želja deležnikov ter končnih uporabnikov z različnimi vključujočimi metodami.

Pristop za regeneracijo naravnega okolja in človeške narave torej združuje naslednje parametre:

- koncept ameriškega krofa, ki oblikovalcem omogoča orientiranje dela k reševanju družbeno-okoljskih problematik,
- regenerativno in družbeno oblikovanje kot orodji za naslavljanje problematike ter
- zgledovanje po naravnih sistemih, ki oblikovalcem ponujajo okoljsko neoporečen zgled delovanja.

Proces še posebej poziva oblikovalce, ki afiniteto do okoljsko in družbeno odgovornega oblikovanja že imajo, pa do zdaj niso imeli ustreznih orodij, s katerimi bi jo udejanjili. Inovativnost tega pristopa je namreč ta,

da združuje obstoječe koncepte, študije in principe v smiselno in predvsem uporabno celoto.

Zasnovan oblikovalski pristop sta Lašič Jurković in Repenšek preizkusili v načrtovalskem projektu. Za izhodišče praktičnega dela naloge sta izbrali pohištveno industrijo, področje, ki je s spreminjajočimi se trendi in uporabo cenenih materialov postalo izrazito osredotočeno na hitro potrošnjo. Hkrati sta avtorici med raziskavo ugotovili, da pohištvena industrija intenzivno vpliva na kar tri planetarne in tri družbene meje. Zato sta kot vzor pri naslavljanju izpostavljenega problema izbrali naravni proces, ki skozi spremembe v vedenju vrsti omogoča preživetje. Avtorici sta razvili koncept za storitev obnove pohištva iz odpadnega materiala, ki hkrati gradi na vzpostavljanju čustvene vrednosti in ohranjanju trajnega razmerja z uporabniki, kar podaljšuje življenjsko dobo izdelkov. (FIG. 20)

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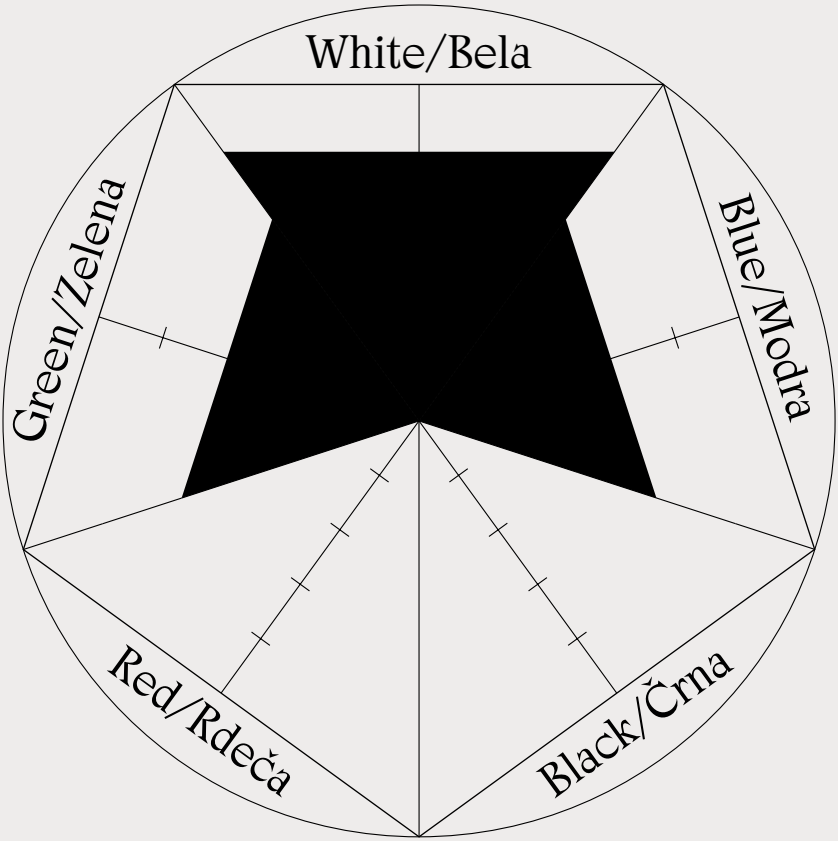
CASE STUDY

7

ŠTUDIJA PRIMERA

Mapping

Mapiranje



WHITE

health, safety, community, equality

BLUE

awareness-raising, knowledge,
new technologies

BLACK

RED

GREEN

regeneration, wisdom, tradition

BELA

zdravje, varnost, skupnost, enakopravnost

MODRA

ozaveščanje, znanje, nove tehnologije

ČRNA

RDEČA

ZELENA

regeneracija, modrost, tradicija

Case Study 7

WHITE BLUE BLACK RED GREEN

PLANNING PROPOSALS AND SOLUTIONS TO RAISE AWARENESS AND ALLEVIATE THE PROBLEM OF WATER POLLUTION IN LOCAL COMMUNITIES WITH THEIR OWN WATER CATCHMENT

AUTHORS	Žan Girandon, Pia Groleger and Luka Pleskovič
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PRACTICAL MENTOR	Prof. Barbara Prinčič, MSc
CO-MENTOR	Prof. Jure Miklavc
STUDY PROGRAMME AND COURSE	Industrial Design and Applied Arts, Industrial Design
YEAR	2023

As many as 20% of the Slovenian population live in areas that are not part of the public water supply system, which means that the water catchments do not undergo regular sampling. This is especially the case in the more mountainous regions, where water needs to be boiled or purified in some other way. The location under investigation is at the Lipnik spring, within Triglav National Park, where elevated levels of the E. coli bacteria have been detected. The goal of the project was to develop a water filtration solution for use in remote locations that would be based on vernacular principles while using new technologies.

STARTING POINT

BIO27 and the water environment

The choice of the subject for this master's thesis was prompted by the open call in 2022 for applications for the Production Platform of the *Biennial of Design 27* (BIO27), with the overarching theme *Super Vernaculars – Design for a Regenerative Future*. Five themes were available for the projects in the production platform. The one authors ended up choosing was *Water – Designing a Biovernacular*, as they believed it was the one that best fit the design approaches, offering various possibilities for responding through product and sustainable design.

In the context of the environmental crisis, a water-related issue is a very relevant topic to address, as the rise in the Earth's average temperature is having a major impact on the water environment around the world. *Stockholm Resilience Centre*, under the leadership of the scientist Johan Rockström, developed the concept of the nine planetary boundaries (2015) within which humanity can continue developing and thriving for future generations. Pushing past these boundaries increases the risk of triggering irreversible environmental changes. One of these boundaries has to do with fresh water consumption and the water cycle at the global level. Due to water consumption and pollution, as well as climate change, which itself has a strong impact on the hydrological systems, we have already approached the planetary boundary associated with the water cycle (Stockholm University). Agricultural and industrial pollution, excessive water use in agriculture, population growth and general climate crises increasingly threaten the water systems that sustain habitats and feed the growing population. Lakes, rivers and aquifers are drying up or becoming too polluted to be used. More than half of the world's marshlands have disappeared. Agriculture uses more water than any other human activity, and much of it is wasted through inefficiency. As a result, around 1.1 billion people worldwide have no access to water, while a total of 2.7 billion people face water scarcity for at least one month of the year. Even more frightening is the fact that by 2050, more than half a billion people will suffer due to water-related catastrophes (World Wildlife Fund). Although Slovenia has abundant water resources, it also faces water environment-related issues.

CRITICAL EXAMINATION OF THE ISSUE

Slovenia has clean water – or does it?

As the authors of the master's thesis point out, a holistic view of the complex situation of the local water environment required research into the general and specific characteristics of the water environment in Slovenia, as well as an in-depth understanding of the vernacular context and examples of good practice. The experts interviewed pointed out that problems with the water environment are due to a lack of understanding of the topics of water and environmentalism. The first problem is that in Slovenia, we associate the availability and quantity of water with its quality, even though water quality is an issue in certain parts of the country. In other words, there is a perception in the Slovenian collective consciousness that

our water is of excellent quality, even though, in terms of many parameters, this is not the case. The second problem with our fundamental perception of water is the global water cycle—more precisely, the fact that the water cycle is a global process. Biologist Mihael J. Toman points to the lack of understanding that "local pollutants affect the water cycle virtually in its entirety" and that "polluting the land also places a heavy pollution burden on water" (National Geographic Slovenia 2021). Toman goes on to list the main problems, or problem areas, with respect to water and water environments in Slovenia: wastewater, landfills, urbanisation, regulation of water courses, hydropower facilities, agriculture, non-native species, ecotourism and sport, as well as privatisation of water resources (National Geographic Slovenia 2021).

These problems affect the quality of water sources in Triglav National Park, widely considered the jewel of Slovenian nature, where the water in the water protection area is polluted, mainly due to agriculture; at the same time, the Triglav National Park staff lack the means to appropriately sanction the farmers (National Geographic Slovenia 2021). It is this discrepancy that led Girandon, Groleger and Pleskovič to focus their research efforts on the problems within Triglav National Park, the general belief in Slovenian society being that the nature there is pristine and unspoilt. (FIG. 21)

Since 2018, water from 13 springs in Triglav National Park has been undergoing regular sampling. Samples are taken 2–3 times a year, mainly during the summer months. The sampling results show that in the chemical sense, the situation is fairly stable, the exception being the presence of nitrates and phosphates, likely associated with agriculture. More problematic were the consistently elevated levels of E. coli detected in four of the springs—in some cases reaching more than 182 CFU/100 ml. (FIG. 22)

E. coli is a bacterium present in human and animal intestines whose presence indicates faecal pollution (WHO 2022). According to the Rules on Drinking Water (PisRS—Legal Information System), the limit value for E. coli is 0/100 mL, with anything higher indicating that the water source is to be considered contaminated. Higher levels of E. coli in humans and animals manifest as severe abdominal cramps, diarrhoea, vomiting and sometimes fever (Mayo Clinic).

Girandon, Groleger and Pleskovič analysed the existing solutions for purifying E. coli-contaminated water, including mechanical filtration, chlorination, UV-treatment, boiling and ozone treatment. In the analysis, they looked not only at efficiency and affordability, but also at sustainability.

In doing so, they found that artificial filtration technologies require regular maintenance and replacement of components, generating large amounts of waste. In addition, they usually require a lot of energy to operate, with the associated negative impact on the environment. They additionally found that chlorination, while effective, is not affordable for smaller towns and villages (Boutiller and Lee 2014). Boiling was also identified as an effective method for water disinfection, but the amount of fuel needed to disinfect water through boiling is several times more than what a typical family uses for cooking. Among the existing alternatives, UV disinfection has emerged as the most promising technology available. However, it also requires either electricity and maintenance if a UV lamp is used, or sufficient sunlight (Boutilier and Lee 2014).

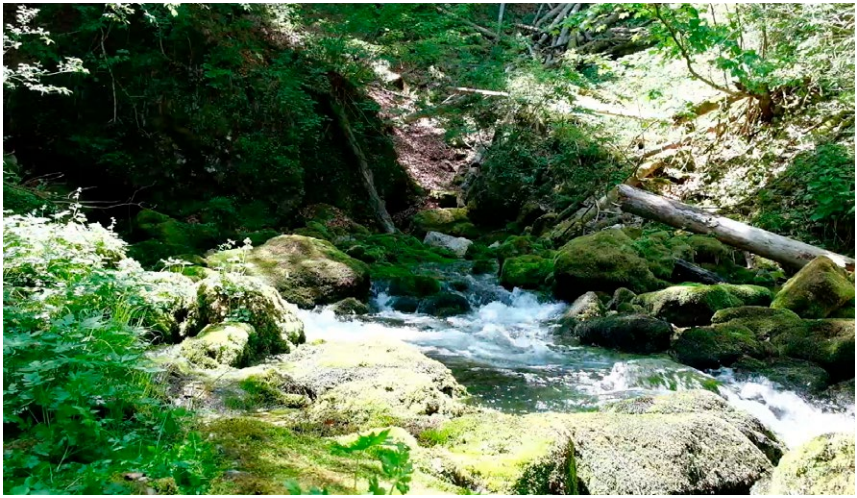
In the course of their research they also investigated vernacular approaches and found that in the past, water filtration was performed through methods that make use of natural processes and do not require a great deal of energy. The solutions were also adapted to local conditions and employed locally available materials (Islam and Rahman 2020, 119). Building on the natural options that were used in the past, before the invention and popularisation of artificial alternatives, was therefore crucial for the development of the project.

RESPONSE TO THE IDENTIFIED ISSUES

A vernacular approach to water purification enhanced by modern technology

The most common natural water purification techniques employ sand, oysters, plants, charcoal, coconuts, zeolite and limestone, bacteria and algae, xylem tissue, activated sludge, peels, irrigation fields and clay (Islam in Rahman 2020, 149–150). In the course of their research, the authors found that ceramic water filtration—a water purification method that uses filters made of clay—offers the most potential.

The use of ceramic water filters to remove contaminants from water dates back to ancient civilisations. Today, ceramic water filters are still in use in developing countries, as they are a cheap and effective method of water purification. The benefits of using ceramic water filters include their ability to remove numerous types of contaminants, such as bacteria and sediments. They are also simple to clean and maintain and have a long



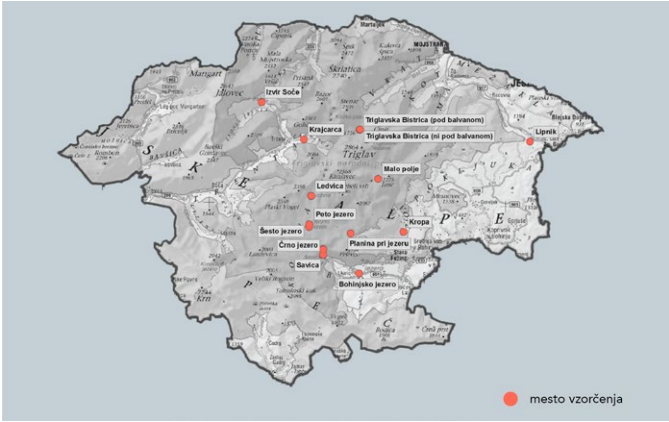


FIG. 21

The Lipnik spring in Triglav National Park, 2022. Photo: Žan Girandon.
Izvir Lipnik v Triglavskem narodnem parku, 2022. Foto: Žan Girandon.

FIG. 22

Sampling sites in Triglav National Park, 2023. Photo: Žan Girandon.
Mesta vzorčenja v Triglavskem narodnem parku, 2023. Foto: Žan Girandon.

FIG. 23

Ceramic filtration, 2022. Photo: Bor Cvetko.
Keramična filtracija, 2022. Foto: Bor Cvetko.

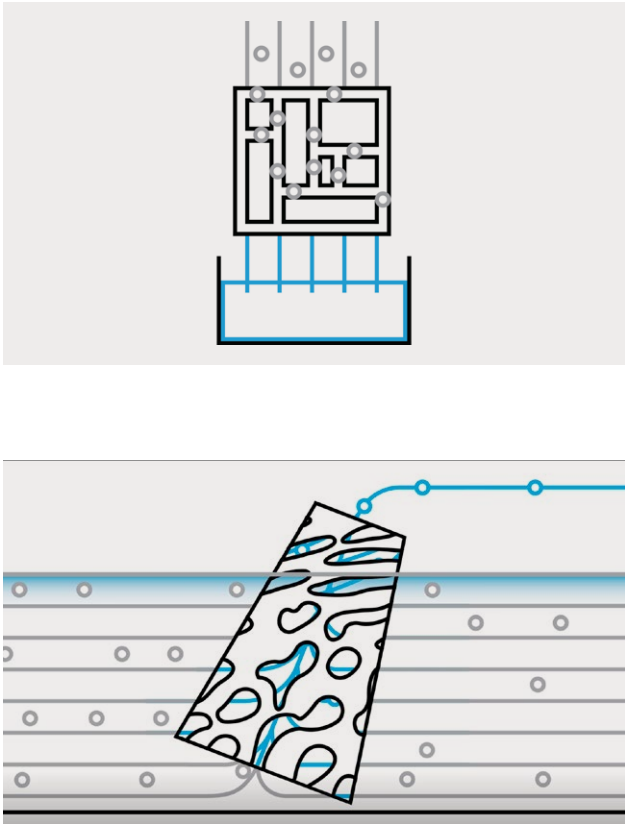


FIG. 24

Ceramic filtration is a mechanical type of filtration in which water is passed through millions of pores on the surface of the water filter. In this process, organic and inorganic particles too large to penetrate the porous material (anything larger than 0.5 micrometres) accumulate on the ceramic surface (Arvig 2014). Diagram design: Ema Kapelj, 2022.

Keramična filtracija je mehanska vrsta filtracije, ki deluje tako, da voda pronica skozi milijone por na površini vodnega filtra. Pri tem se na keramični površini kopičijo organski in anorganski delci, ki so preveliki, da bi pronicali skozi porozno snov (vse, kar je večje od 0,5 mikrometra) (Arvig 2014). Oblikovanje diagrama: Ema Kapelj, 2022.

FIG. 25

Operation of the Dodola filter, 2022. Diagram design: Ema Kapelj.
Delovanje filtra Dodola, 2022. Oblikovanje diagrama: Ema Kapelj.

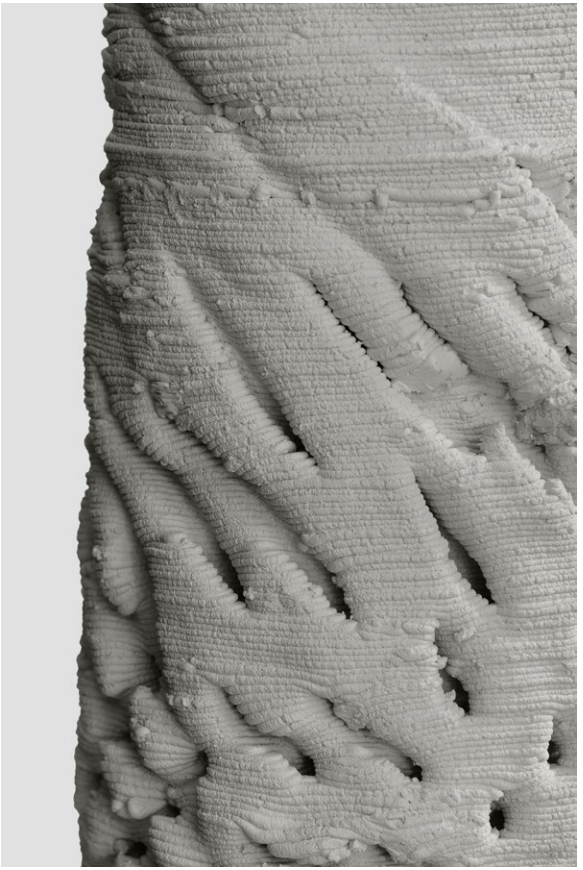


FIG. 26

Pjorkkala, Dodola (gyroid detail), 2022. A gyroid is an infinitely connected triply periodic minimal surface that was discovered in 1970 by Alan Schoen. The gyroid separates space into two oppositely congruent labyrinths of passages, which allow the formation of channels needed for the input-filtration component of the system (Schoen 1970, 1). Photo: Bor Cvetko.

Pjorkkala, Dodola (detajl giroida), 2022. Giroid je neskončno povezana trojno periodična minimalna površina, ki jo je leta 1970 odkril Alan Schoen. Giroid loči prostor na dva nasprotno skladna labirinta prehodov. Ta omogočata oblikovanje kanalov, ki so potrebni pri vhodno-filtracijski komponenti sistema (Schoen 1970, 1). Foto: Bor Cvetko.

FIG. 27

Pjorkkala, Dodola (detail of the Archimedes' screw), 2022. An Archimedes' screw consists of one or more helical surfaces wrapped around a central cylinder. Integrating a structure inspired by the Archimedes' screw in an object permits water to be transported upwards without user intervention and without electric propulsion (Wikipedia). Photo: Bor Cvetko.

Pjorkkala, Dodola (detajl Arhimedovega vijaka), 2022. Arhimedov vijak je sestavljen iz enega ali več spiralnih nizov rezil, ovitih okoli osrednjega valja. Integracija forme, inspirirane po Arhimedovem vijaku, lahko v objektu omogoči transport vode navzgor brez intervencije uporabnika in brez električnega pogona (Wikipedia). Foto: Bor Cvetko.

FIG. 28

Pjorkkala, Dodola, 2022. Photo: Bor Cvetko.
Pjorkkala, Dodola, 2022. Foto: Bor Cvetko.

lifespan. Needing no electricity or chemicals to operate, they are ideal for use in remote areas or areas that are not part of the water supply network. Their only downside is that they are not effective in removing chemicals and viruses from the water (Centers for Disease Control and Prevention). This was not a problem in the context of the thesis, however, as no chemical or viral contamination was detected in the waters of Triglav National Park. The authors further point out that ceramic water filters can be produced locally, reducing the need for transport and the associated carbon emissions. Further contributing to the sustainability aspect of ceramic products is the fact that they are fully recyclable at the end of their life cycle.

Ceramic filters are considered an extremely efficient method of filtration, as the porous structure removes up to 97.5% of bacteria, the exact value ranging from 80 to 97.5% depending on the amount of combustible materials present in the clay prior to firing. In addition to microbiological contaminants, ceramic filters also remove undissolved solids and larger particles in contaminated water (Zereffa and Bekalo 2017). **FIG. 23–24**

On a foundation of traditional knowledge, a product was created: Dodola,[1] which integrates vernacular knowledge enhanced through the use of modern technology. The result is a sustainable product for water filtration produced using 3D technology and employing principles such as the gyroid structure and the Archimedes' screw. The carefully designed filter modules remove bacterium-sized contaminants from the water, which is key to providing safe drinking water. In numerous tests, the module has demonstrated outstanding performance, resulting in an innovative design of a complex filter surface produced out of clay using 3D printing technology.

The Dodola is designed for use in natural environments, where the structure of the filtration system is positioned so that it reaches below the water surface. This allows water to pass through the porous material, which is how it gets filtered. The water flow induces a rotation that transports the filtered water towards the upper part of the module where it emerges as clean drinking water. Once the water leaves the structure, it flows along a trough to a point where it is accessible to users, or is piped to a drinking water storage tank. This allows easy access to drinking water for the local population and operation in remote locations where no electricity is available. **FIG. 25–28**

①

The project received the following awards: Distributed Design Award – Project Excellence, Zagreb Design Week – 1st Prize for Social Innovation, an award by Zavod BiG in the Perspektivni category and the the DOS Daljnogled award. It was also nominated for the Green Project Award.

The study highlights and actively addresses the problems of water source pollution and drinking water supply, issues that are crucial for a good quality of life, yet are quickly forgotten in a world where caring for our environment seems to always come last. In the search for a suitable solution to the investigated problem, the holistic approach of the team of authors was a decisive factor, as it ensured that the solution, in addition to being technically suitable, was also sustainable and regenerative and that it leads to a positive change in users' habits. The solution presented is tightly linked to vernacular and participatory design, as it puts at its centre the communities that are facing daily issue due to the lack of adequate infrastructure for water purification. The proposed solution overcomes the negative impacts of scarcity by empowering on two levels, offering a sustainable product that serves both as a device for water purification and a medium for revealing a problem that is often invisible and unknown. Finally, the resulting solution is not only important for the empowerment of local communities, but also clearly demonstrates the need to re-establish a common relationship with water, which is too often neglected and taken for granted, despite our inescapable dependence on it.

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Študija primera 7 BELA MODRA ČRNA RDEČA ZELENA

NAČRTOVANJE PREDLOGOV IN REŠITEV ZA DVIG OZAVEŠČENOSTI IN ODPRAVO PROBLEMA ONESNAŽENOSTI VODE PRI LOKALNIH SKUPNOSTIH Z LASTNIM VODNIM ZAJEMOM

AVTORJI	Žan Girandon, Pia Groleger in Luka Pleskovič
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MENTORICA PRAKTIČNEGA DELA	prof. mag. Barbara Prinčič
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ŠTUDIJSKI PROGRAM IN SMER	Industrijsko in unikatno oblikovanje, Industrijsko oblikovanje
LETO	2023

Kar 20 % Slovencev živi na področjih, ki niso del javnega vodovodnega sistema, in posledično vodna zajetja niso redno vzorčena. To je predvsem prisotno v bolj goratih predelih, kjer morajo vodo prekuhavati ali uporabljati drugačne načine prečiščevanja. Obravnavano področje testne lokacije je znotraj Triglavskega narodnega parka na izviru Lipnik, kjer so bile zaznane povišane vrednosti bakterij E. coli. Cilj projekta je bil razviti rešitev, ki bi po vzoru vernakularnih principov in s pomočjo novih tehnologij omogočala filtracijo vode na odročnih lokacijah.

IZHODIŠČE

BIO27 in vodno okolje

Razlog za izbiro teme magistrskega dela je bil leta 2022 odprt poziv za prijavo na Produkcijsko platformo Bienala oblikovanja 27 (BIO27) s temo Supervernakularno – oblikovanje za regenerativno prihodnost. Od petih razpisanih tem za projekte produkcijske platforme so se avtorji odzvali na poziv Voda – oblikovanje biovernakularnega, saj je po njihovem mnenju najbolj sovpadal z oblikovalskimi pristopi in je ponujal različne možnosti odgovorov znotraj okvirov produktnega in trajnostnega oblikovanja.

V povezavi z okoljsko krizo je naslavljanje teme, povezane z vodo, zelo aktualno, saj dvigovanje povprečne temperature na Zemlji močno vpliva na vodno okolje povsod po svetu. Stockholm Resilience Center je pod vodstvom znanstvenika Johana Rockströma zasnoval koncept

devetih planetarnih meja (2015), znotraj katerih se lahko človeštvo še naprej razvija in uspeva za prihodnje generacije. Prestopanje teh meja pa poveča tveganje za ustvarjanje nepopravljivih okoljskih sprememb. Ena izmed meja se nanaša na porabo sveže vode in vodni krog na svetovni ravni. Zaradi porabe in onesnaževanje voda, kot tudi zaradi podnebnih sprememb, ki imajo na hidrološki sistem velik vpliv, smo se že približali planetarni meji vodnega kroga (Stockholm University 2015). Agrikulturna in industrijska onesnaževanja, pretirana poraba vode za kmetovanje, rast prebivalstva in splošne podnebne krize vodne sisteme, ki ohranjajo življenjske prostore in skrbijo za prehranjevanje naraščajočega prebivalstva, vedno bolj ogrožajo. Reke, jezera in vodonosniki se izsušujejo ali postajajo preveč onesnaženi za uporabo. Več kot polovica močvirij na svetu je izginila. Kmetijstvo porabi več vode kot katerikoli drug vir in velik delež vode se zapravi zaradi neučinkovitosti. Posledično približno 1,1 milijarde ljudi po svetu nima dostopa do vode, medtem ko se skupno 2,7 milijarde ljudi spopada s pomanjkanjem vode vsaj en mesec na leto. Še bolj zastrašujoče je, da bo do leta 2050 več kot pol milijarde ljudi po svetu trpelo zaradi katastrof, povezanih z vodo (World wide life). Čeprav ima Slovenija bogate vodne kapacitete, so problemi vodnega okolja prisotni tudi pri nas.

KRITIČNO PREČENJE PROBLEMA

Voda v Sloveniji je čista, ali pač?

Kot izpostavijo avtorji magistrskega dela, je bila za celostni uvid kompleksne lokalne situacije vodnega okolja ključna raziskava splošnih in specifičnih značilnosti vodnega okolja v Sloveniji, pa vse do poglobljenega razumevanja vernakularnega konteksta in primerov dobrih praks. Intervjuvani strokovnjaki so izpostavili, da so problemi z vodnim okoljem povezani z nerazumevanjem tematike vode in okoljevarstva. Prvi problem je ta, da v Sloveniji povezujemo vodnatost in veliko količino vode tudi z njeno kakovostjo, čeprav je ta v nekaterih delih države problematična. Povedano drugače, v slovenski kolektivni zavesti je naše dojemanje stanja kakovosti vode odlično, čeprav po mnogih parametrih ni tako. Drugi problem v osnovnem pojmovanju vode pa je globalno kroženje vode oziroma to, da je kroženje vode globalni cikel. Biolog Mihael J. Toman pri tem opozori na nerazumevanje, »da z lokalnimi onesnaževali vplivamo na tako rekoč celoten vodni cikel«, pri čemer »z onesnaževanjem kopnega predstavljamo tudi velika bremena pri onesnaževanju voda« (National Geographic Slovenija 2021). V nadaljevanju Toman kot glavne probleme oziroma

problemske sklope stanja voda in vodnih okolij v Sloveniji navaja naslednja področja: odpadne vode, odlagališča, urbanizacija, regulacije vodotokov, hidroenergetski objekti, kmetijstvo, tujerodne vrste, ekoturizem in šport ter privatizacija vodnih virov (National Geographic Slovenija 2021).

Naštete problematike vplivajo na kakovost vodnih virov v Triglavskem narodnem parku, t. i. slovenskem biseru narave, kjer je na vodovarstvenem območju voda onesnažena predvsem zaradi kmetijstva, hkrati pa zaposleni v Triglavskem narodnem parku kmetov ne morejo primerno sankcionirati (National Geographic Slovenija 2021). Ravno zaradi prepoznane diskrepance so se Girandon, Groleger in Pleskovič v nadaljevanju razvoja naloge osredotočili na proučevanje problemov znotraj Triglavskega narodnega parka, saj v slovenski družbi prevladuje splošno prepričanje, da je narava tam neokrnjena. (FIG. 21)

Od leta 2018 se v Triglavskem narodnem parku izvaja redno vzorčenje voda iz 13 izvirov. Vzorce jemljejo 2–3-krat letno, predvsem v poletnih mesecih. Rezultati vzorčenja so pokazali, da je kemijsko stanje voda precej stabilno, z izjemo prisotnosti nitratov in fosforjev, ki jih lahko povezujemo s kmetijstvom. Veliko bolj problematično pa se je izkazalo to, da je kar v štirih izvirih ves čas prisotna povišana vrednost bakterije E. coli, ponekod celo nad 182 CFU/100 ml. (FIG. 22)

E. coli je bakterija, ki je prisotna v črevesju ljudi in živali. Razširjena je povsod, kjer pride do fekalnega onesnaženja (WHO 2022). Mejna vrednost za E. coli je po Pravilniku o pitni vodi 0/100 mL (PisRS – Pravno-informacijski sistem) in vse, kar je višje od tega, označujemo kot onesnaženost vodnega vira. Povišana prisotnost bakterije se pri ljudeh in živalih kaže v obliki hudih trebušnih krčev, driske, bruhanja in včasih povišane temperature (Mayo Clinic 2022).

Pri analiziranju obstoječih rešitev za čiščenje vode, onesnažene z bakterijo E. coli, so Girandon, Groleger in Pleskovič preverili mehansko filtracijo, kloriranje, UV-čiščenje, prekuhavanje in čiščenje z ozonom. Analiza na predlagane rešitve ni vključevala le učinkovitosti in cenovne dostopnosti, temveč tudi vidik trajnosti. Pri tem so ugotovili, da umetne filtracijske tehnologije zahtevajo redno vzdrževanje in menjavo komponent, ki povzročajo velike količine odpadkov, prav tako navadno potrebujejo veliko energije za delovanje, kar negativno vpliva na okolje. Dognali so tudi, da je čiščenje s klorom učinkovita metoda, vendar je cenovno nedostopna za manjša mesta in vasi (Boutilier in Lee 2014). Tudi prekuhavanje se je izkazalo za učinkovito metodo za razkuževanje vode, vendar je količina goriva, ki je potrebna za dezinfekcijo vode s prekuhavanjem, nekajkrat večja od tiste, ki jo običajna družina porabi za kuhanje. Med obstoječimi

alternativami se je kot najobetavnejša razpoložljiva tehnologija izkazala UV-dezinfekcija, vendar tudi ta zahteva dostop do električne energije in vzdrževanje UV-žarnice ali zadostno količino sončne svetlobe (Boutilier in Lee 2014).

Med raziskavo so poiskali tudi vernakularne pristope in ugotovili, da so bile v preteklosti za filtriranje vode uporabljene metode, ki izkoriščajo naravne procese in ne potrebujejo veliko energije za delovanje. Prav tako so bile rešitve prilagojene lokalnim razmeram in so uporabljale lokalno dostopne materiale (Islam in Rahman 2020, 119). Na izhodiščih naravnih možnosti, ki so bile uporabljene nekoč, preden so izumili in promovirali umetne alternative, so bile zato ključne za razvoj pričujočega projekta.

ODGOVOR NA PREPOZNANO

Vernakularni način čiščenja vode nadgrajen s sodobno tehnologijo

Najpogostejše tehnike naravnega čiščenja vode so čiščenje s peskom, ostrigami, rastlinami, ogljem, kokosom, zeolitom in apnencem, bakterijami in algami, ksilenskim tkivom, aktivnim blatom, olupki, namakalnimi polji in glino (Islam in Rahman 2020, 149–150). Med raziskavo so avtorji ugotovili, da keramična filtracija vode, metoda čiščenja vode, ki uporablja filtre, narejene iz gline, ponuja največ potenciala.

Keramični filtri za vodo izvirajo iz starih civilizacij, v katerih so jih uporabljali za odstranjevanje nečistoč iz vodnih virov. Danes se keramični filtri za vodo še vedno pogosto uporabljajo v državah v razvoju, saj so poceni in učinkovit način čiščenja vode. Prednosti uporabe keramičnih vodnih filtrov vključujejo njihovo sposobnost odstranjevanja številnih nečistoč, kot so bakterije in usedline. Prav tako so enostavni za čiščenje, vzdrževanje in imajo dolgo življenjsko dobo. Za delovanje ne potrebujejo elektrike ali kemikalij, zaradi česar so idealni za uporabo na oddaljenih območjih ali območjih zunaj omrežja. Pomanjkljivost keramičnih filtrov je le ta, da niso učinkoviti pri odstranjevanju kemikalij in virusov iz vode (Centers for Disease Control and Prevention), kar v sklopu naloge ni bilo problematično, saj v vodah Triglavskega narodnega parka niso bila zaznana kemična in virusna onesnaženja. Kot še poudarijo avtorji raziskave, je keramične filtre za vodo mogoče proizvesti lokalno, kar zmanjša potrebo po prevozu in s tem povezane emisije ogljika. K trajnostnemu vidiku keramičnih izdelkov prispeva tudi to, da jih je na koncu življenjskega cikla možno popolnoma reciklirati.

Keramični filtri veljajo za izredno učinkovit način filtracije, saj struktura majhnih por odstrani do 97,5 % bakterij. Ta vrednost lahko variira od 80 do 97,5 %, odvisno od količine vnetljivih materialov, prisotnih v zmesi pred žganjem. Poleg mikrobioloških onesnažil keramični filtri odstranjujejo tudi neraztopljene snovi in večje delce v onesnaženi vodi (Zereffa in Bekalo 2017). FIG. 23–24

Na osnovi prepoznanih tradicionalnih znanj je nastal izdelek Dodola,① ki vključuje vernakularno znanje, nadgrajeno s pomočjo uporabe sodobne tehnologije. Nastal je trajnostni izdelek za filtriranje vode, proizveden s pomočjo 3D-tehnologije, ki upošteva načela, kot sta giroidna struktura in Arhimedov vijak. Premišljeno zasnovani filtrirni moduli odstranjujejo iz vode onesnažila v velikosti bakterij, kar je ključnega pomena za zagotavljanje pitne vode, varne za uporabo. Številna testiranja modula so pokazala izjemno učinkovitost razvitega sistema, katerega posledica je inovativno oblikovanje kompleksne filtrirne površine, proizvedene s tehnologijo 3D-tiska gline.

Dodola je zasnovana za uporabo v naravnem okolju, v katerem je struktura filtrirnega sistema potopljena pod gladino vode in deluje tako, da voda potuje skozi porozen material, ki istočasno filtrira vodo. Zaradi vodnega toka pride do vrtenja, ki omogoča pretakanje vode v višji del modula, kjer izstopa kot čista pitna voda. Ko voda izstopi iz objekta, steče po žlebu do točke, pri kateri je dostopna uporabnikom, ali pa je speljana v zbiralnik pitne vode. To omogoča enostaven dostop do pitne vode za lokalno prebivalstvo in delovanje na odročnih lokacijah, na katerih ni elektrike. FIG. 25–28

Naloga izpostavlja in aktivno naslavlja probleme onesnaženja vodnih virov in preskrbe s pitno vodo, probleme, ki so ključni za kvalitetno bivanje, pa vendar se nanje hitro pozabi v svetu, v katerem je vse bolj pomembno kot skrb za lastno okolje. Pri iskanju primerne rešitve za proučevani problem je bilo odločilno celostno pristopanje skupine avtorjev, ki so poleg ustrezne tehnične rešitve zagotovili, da je ta tudi trajnostna, regenerativna in omogoča pozitivno spremembo navad uporabnikov. Predstavljena rešitev je tesno povezana z vernakularnim in participativnim oblikovanjem, saj svoje središče postavlja v skupnosti, ki se dnevno spopadajo s pomanjkanjem primerne infrastrukture za prečiščevanje vode. Negativne vplive pomanjkanja predlagana rešitev presega z opolnomočenjem na dveh

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Projekt je prejel naslednje nagrade: Distributed Design Award v kategoriji Project Excellence, 1. nagrado v kategoriji socialna inovacija na Zagreb Design Week, nagrado zavoda BIG – perspektivni, nagrado DOS – daljnogled in nominacijo Green Project Award.

ravneh: s trajnostnim izdelkom kot pripomočkom za čiščenje, ki pa hkrati postane tudi medij za razkrivanje pogosto nevidnega in nepoznanega problema. Ob vsem naštetem pa nastala rešitev ni pomembna le zaradi opolnomočenja lokalnih skupnosti, temveč jasno kaže, da je nujno tudi obče graditi na ponovni vzpostavitvi odnosa do vode, saj je ta – kljub naši neovrgljivi odvisnosti – prevečkrat zanemarjena in domnevana za samoumevno.

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Exhibition setup

Echoes of Tomorrow at Milan Design Week 2024

Jure Miklavc and Črt Štrubelj

Five years have passed since the installation of the Slovenian pavilion entitled *Thinking the Conditions of Our Time*, created under the organisation of the Academy of Fine Arts and Design, University of Ljubljana, gained high visibility during its presentation at the international event *XXII Triennale di Milano, Broken Nature: Design Takes on Human Survival*. Already on that occasion, the pioneering, courageous and ambitious installation foreshadowed in its own way the Academy's gradual opening up to the international space. Since then, hardly a semester has passed that is not marked by some form of international networking, cooperation or presentation in an international context.

In practice, this is manifested by a number of world-renowned experts involved in the teaching process (for example Masayo Ave, Andre Dekker, Marta Fernandez Guardado, Hörst Hörtner, Gerald Kiska, Ivica Mitrović, Saskia van der Muijsenberg and Aleks Tatič). Moreover, we carry out a number of projects arising from international connections established with a wide range of foreign institutions, including the Kanazawa College of Art in Japan, the Joanneum Institute of the University of Applied Sciences in Graz and the Academy of Arts in Split. Our teachers, researchers and assistants actively lecture abroad. In the recent period alone, our Academy has been invited to deliver lectures at various institutions, including the Korean International Design School for Advanced Studies, Hongik University, the Italian School of Design – Polimi at the Politecnico di Milano, the Estonian Eesti Kunstiakadeemia in Tallinn, and the English faculty of Goldsmiths, University of London. This array of activities truly demonstrates our versatility and global reach.

The decision to participate once again at Milan Design Week (2024 edition), presenting ourselves as an internationally renowned teaching and research institution, is therefore both logical and necessary to further promote the Academy's positioning in the context of international activities. This is particularly significant as in 2024 the Academy of Fine Arts and Design and, by extension, the University of Ljubljana, celebrates the 40th anniversary of tertiary education in the field of design. Participation in Milan Design Week systematically solidifies and confirms our strong international presence, transparently communicates our pedagogical and research approaches and attracts international students, as well as proving and reaffirming our mission in the domestic environment, bolstering confidence that we are cultivating the best talent for the future.

The project for Milan Design Week, entitled *Echoes of Tomorrow*, was realised in two phases. During the academic year 2022/2023,

we conducted a research project involving our postgraduate Industrial Design students in collaboration with students from the department of Visual Communication Design. The aim of the project was to perform an in-depth examination of a wide variety of existing national and international exhibition installations. Both quantitative and qualitative methods were employed to evaluate visitor comprehension and attention, whereas testing and measuring key elements of exhibition installations enabled us to prove or disprove premises about different information presentation approaches. Drawing on the results obtained during the first part of the project, a substantive and planning basis was prepared for the continuation of the project in the second phase, which consisted of finalising the concept and exhibition designing. **FIG. 29**

The designing of the exhibition took place in the academic year 2023/2024, with the participation of a diverse group of undergraduate and postgraduate students of Industrial Design and Visual Communication Design under the mentorship of professors from both design departments at the Academy of Fine Arts and Design, University of Ljubljana. The process was experimental but nevertheless consistently based on the meticulous use of sustainable design tools. In 2023, we responded to a call for proposals issued by BASE Milano, a hybrid cultural centre, which, through the CASE public programme, invited the submission of projects fostering conviviality and coexistence in the era of environmental and social crises. For the purpose of the call, our concept was focused on a basic human need—water. In the light of the current environmental crisis, this issue is extremely topical, since, according to all known data, the rise in the average temperature of the Earth will have a significant impact on water ecosystems all across the globe, leading to a diminishing availability of clean and drinkable water for a growing part of the world's population.

In this context, the presentation project was built on the outstanding master's thesis co-authored by three Industrial Design students, Žan Girandon, Pia Groleger and Luka Pleskovič. The thesis titled *Planning Proposals and Solutions to Raise Awareness and Alleviate the Problem of Water Pollution in Local Communities with Their Own Water Catchment*[1] showcases the sum of knowledge that our students acquire during their five years of study at the Academy of Fine Arts and Design, University of Ljubljana.

[1]
For the article of the master's thesis, see pages 196–211.

Focusing on just a few of the milestones: with their in-depth research and highly innovative design, the authors initially excelled in an international competition, convincing the international jury of the 27th edition of the Biennial of Design (BIO27) and its curator, Jane Withers. Hence, the result of their master's research work was selected for the inclusion in the BIO27 Production Platform and the BIO27 exhibition *Super Vernaculars – Design for a Regenerative Future*. The exhibition was on display at the Museum of Architecture and Design in Ljubljana and open to a wider national and international audience from 29 May to 26 September 2022. Its central focus was the responses of local designer groups to global processes and design in local contexts. Since this breakthrough moment, the three designers—operating as a newly-formed association Pjorkkala—have become well established as a socially and environmentally engaged collective, focused on experimentation, exploration of natural materials and traditional skills, while thoughtfully combining these elements with contemporary production technologies.

The result of the master's thesis culminated in the product Dodola, which is based on a regenerative design that filters water using the principle of mechanical filtration through a porous ceramic matrix. The product is at the core of the exhibition installation in Milan. Drawing on the broader context of the thesis, the chosen installation plays with the concepts of echoes and reflections created by the movement of water. In order to create a playful effect, the reflections are captured in a lightweight, sustainability-based circular installation composed of textile screens. The play of shadows subtly invites visitors to interact with the pavilion and read it in a unique way. The circular design evokes the circulation of water and the interconnectedness of seemingly unrelated factors; the play of reflections and water sounds creates a meditative atmosphere, which immerses visitors, encouraging them to delve deeper into the content. The materiality of the pavilion combines the softness and absorbency of fabric with the reflectivity, strength and lightness of sheet metal. The exhibited product is a water "fountain" that forms the central island—the convergence and starting point of the pavilion, which aims to create a sense of mutual belonging. (FIG. 30)

The design of the pavilion was developed following approaches with low environmental impact. The modular design allows for transport with a smaller carbon footprint as well as extending the pavilion's life cycle. The pavilion can be reinstalled in a wide array of spatial settings with no need for major interventions. Accordingly, during the pavilion design phase, durable materials were deliberately selected to withstand installation

in exhibition spaces with high visitor traffic. At the end of the pavilion's life cycle, all exhibition elements will be suitable for reuse or recycling.

Finally, the realised installation demonstrates that the pedagogical approaches we adopt and the exceptional individuals we train permit us to effectively design and implement international projects, and to confidently establish a strong presence on the global design map. With the projects we design, we are able to operate sustainably, and with the content we research, we are already addressing the future today.

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Razstavna postavitev

Odmevi jutrišnjega dne na milanskem tednu oblikovanja 2024

Jure Miklavc in Črt Štrubelj

Od odmevne postavitve slovenskega paviljona z naslovom Misliti pogoje našega časa na mednarodnem dogodku *XXII Triennale di Milano, Broken Nature: Design Takes on Human Survival*, ki je nastal v organizaciji Akademije za likovno umetnost in oblikovanje Univerze v Ljubljani, je minilo pet let. Ta pionirska, pogumna in ambiciozna postavitev je že takrat na svoj način napovedala stopnjevanje odpiranja Akademije v mednarodni prostor. Od takrat skoraj ne mine semester, ki ne bi v eni od oblik vključeval mednarodnega povezovanja, sodelovanja oziroma predstavljanja v mednarodnem okviru.

Slednje se v praksi kaže s številnimi svetovno priznanimi strokovnjaki, vključenimi v pedagoški proces, kot so Masayo Ave, Andre Dekker, Marta Fernandez Guardado, Hörst Hörtner, Gerald Kiska, Ivica Mitrović, Saskia van der Muijsenberg in Aleks Tatič. Hkrati izvajamo številne projekte, ki nastajajo na podlagi mednarodnih povezav z najrazličnejšimi tujimi institucijami, med drugim Kanazawa College of Art iz Japonske, Inštitutom Joanneum Univerze uporabnih znanosti v Gradcu in Umetniško akademijo v Splitu. Naši pedagogi, raziskovalci in asistenti aktivno predavajo v tujini. Samo v zadnjem obdobju smo izvajali vabljena predavanja vse od korejske International Design School for Advanced Studies, Hongik University do italijanske Design – Polimi na Politecnico di Milano, estonske Eesti Kunstiakadeemia v Talinu in angleške fakultete Goldsmiths, University of London. Z vsemi navedenimi aktivnostmi resnično dokazujemo vsestranskost in mednarodni obseg naših dejavnosti.

Odločitev, da se na milanskem tednu oblikovanja (Milano Design Week 2024) znova predstavimo kot pedagoška, raziskovalna in v svetu prepoznana organizacija, je zato logična, a hkrati tudi nujna za nadaljnji okvir umeščanja Akademije v kontekst mednarodnih dejavnosti. Slednje je še toliko pomembnejše, saj leta 2024 praznujemo 40 let visokošolskega izobraževanja oblikovanja na Akademiji za likovno umetnost in oblikovanje in s tem na Univerzi v Ljubljani. S predstavitvijo na milanskem tednu oblikovanja načrtno krepimo in potrjujemo svojo močno mednarodno prisotnost, transparentno komuniciramo svoje pedagoške in raziskovalne pristope, privabljamo tuje študente ter v domačem okolju dokazujemo in potrjujemo svoje poslanstvo in zaupanje, da vzgajamo najboljše kadre za prihodnost.

Projekt za milanski teden oblikovanja z naslovom *Odmevi jutrišnjega dne* je potekal v dveh fazah. V šolskem letu 2022/2023 smo s študenti podiplomskega študija Industrijskega oblikovanja s podporo študentov z oddelka Oblikovanja vizualnih komunikacij izvedli raziskovalni projekt, v katerem smo poglobljeno raziskovali raznovrstne obstoječe domače

in mednarodne razstavne postavitve. S kvantitativnimi in kvalitativnimi metodami smo preverjali razumevanje in pozornost obiskovalcev razstav ter s preizkušanjem in merjenjem osnovnih elementov postavitev dokazali ali ovrgli različne načine predstavitve informacij. Na podlagi rezultatov prvega dela projekta so bila pripravljena vsebinska in načrtovalska izhodišča za nadaljevanje projekta v drugi fazi – finaliziranje koncepta in oblikovanje razstave. (FIG. 29)

Oblikovanje razstave je potekalo v šolskem letu 2023/2024, v pestri zasedbi dodiplomskih in podiplomskih študentov industrijskega oblikovanja in oblikovanja vizualnih komunikacij pod mentorstvom profesorjev obeh oblikovalskih oddelkov na Akademiji za likovno umetnost in oblikovanje Univerze v Ljubljani. Proces je potekal eksperimentalno, a ves čas temelječ na skrbni uporabi orodij iz polja trajnostnega oblikovanja. V letu 2023 smo se nato odzvali na razpis milanskega BASE, hibridnega kulturnega centra, ki je skozi javni program CASE iskal projekte sožitja in sobivanja v dobi okoljskih in družbenih kriz. Ob pozivu smo se z našim konceptom osredotočili na temeljno človeško potrebo – vodo. Z vidika trenutne okoljske krize je ta tema izjemno aktualna, saj bo po vseh znanih podatkih dvig povprečne temperature na Zemlji pomembno vplival na vodne ekosisteme po vsem svetu in s tem na naraščajočo dostopnost čiste in pitne vode za vedno večji del svetovnega prebivalstva.

Zato smo projekt predstavitve zgradili na odlični magistrski nalogi treh študentov industrijskega oblikovanja, Žana Girandona, Pie Groleger in Luka Pleskoviča. Z nalogo z naslovom *Načrtovanje predlogov in rešitev za dvig ozaveščenosti in odpravo problema onesnaženosti vode pri lokalnih skupnostih z lastnim vodnim zajemom*① namreč kažemo vsoto znanj, ki jih naši študenti pridobijo v petih letih študija na Akademiji za likovno umetnost in oblikovanje Univerze v Ljubljani. Če pogledamo samo nekaj mejnikov, s poglobljenim raziskovalnim in izredno inovativnim načrtovalskim delom jim je v mednarodni konkurenci v prvi vrsti uspelo prepričati mednarodno žirijo 27. bienala oblikovanja (BIO27) in kuratorko Jane Withers, da sta jih z magistrsko raziskavo uvrstili v BIO27 Produkcijsko platformo ter na razstavo *BIO27 Supervernakularno – Oblikovanje za regenerativno prihodnost*. Razstava je bila širši domači in mednarodni javnosti predstavljena med 29. majem in 26. septembrom 2022 v Muzeju za arhitekturo in oblikovanje ter se je osredotočala na odzive lokalnih skupin

① Za članek magistrskega dela glej strani 212–219.

oblikovalcev na globalne procese ter oblikovanje v lokalnem kontekstu. Vse od tega prelomnega trenutka so se trije oblikovalci – v novonastalem društvu Pjorkkala – že dodobra uveljavili kot družbeno in okoljsko angažiran kolektiv, ki deluje s poudarkom na eksperimentiranju, raziskovanju naravnih materialov in tradicionalnih znanj, vse pa preudarno prepleta s sodobnimi produkcijskimi tehnologijami.

Rezultat magistrskega dela je kulminiral v izdelku Dodola in temelji na regenerativnem oblikovanju, ki vodo filtrira na principu mehanske filtracije skozi porasto matrico keramičnega materiala ter hkrati tvori center razstavne postavitve v Milanu. Izhajajoč iz širšega konteksta naloge se izbrana postavitev igra s koncepti odmevov in odsevov, ki jih ustvarja gibanje vode. Z namenom ustvarjanja igre so odsevi ujeti v lahkotni, na trajnosti utemeljeni krožni postavitvi, sestavljeni iz tekstilnih zastorov. Igra senc obiskovalce subtilno vabi k interakciji in svojstvenemu branju paviljona. Krožna zasnova paviljona sporoča kroženje vode in medsebojno povezanost na videz nepovezanih dejavnikov; igra odsevov in zvokov vode pa ustvarja meditativno vzdušje, ki obiskovalce spodbuja k poglabljanju v vsebino. Materialnost paviljona prepletata mehkoba in vpojnost tkanine z odbojnostjo, trdnostjo in lahkotnostjo pločevine. Osrednji otok z razstavljenim produktom je vodna »fontana« – zbirališče in izhodišče paviljona, katerega namen je ustvarjanje občutka vzajemne pripadnosti. (FIG. 30)

Pri oblikovanju paviljona smo sledili pristopom s čim manjšim vplivom na okolje. Paviljon je zasnovan modularno, kar omogoča transport z manjšim ogljičnim odtisom, prav tako pa takšna zasnova podaljša življenjsko dobo paviljona. Paviljon se lahko vedno znova brez večjih posegov postavlja v najrazličnejše prostorske kontekste. Na tej osnovi smo pri snovanju paviljona zavestno uporabljali trpežne materiale, ki bodo prenesli postavitev v visoko obljudenih razstavnih prostorih. Po zaključku življenjske dobe paviljona bo vse razstavne elemente mogoče znova uporabiti ali reciklirati.

Izvedena postavitev pa ne nazadnje tudi dokazuje, da z našimi pedagoškimi pristopi, ki jih izvajamo, in z izjemnimi posamezniki, ki jih izobražujemo, lahko dejansko oblikujemo in izvajamo mednarodne projekte ter se suvereno umeščamo na svetovni oblikovalski zemljevid. S projekti, ki jih oblikujemo, smo zmožni trajnostno delovati, in z vsebinami, ki jih raziskujemo, že danes nagovarjamo prihodnost.

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FIG. 29

The team of the *Echoes of Tomorrow* project, 2024. Photo: Žiga Gorišek.
Ekipa projekta *Odmevi jutrišnjega dne*, 2024. Foto: Žiga Gorišek.

FIG. 30

The design of the exhibition project *Echoes of Tomorrow* is based on a play of reflections, captured within a lightweight and sustainability-grounded circular installation design, 2024. Photo: Andrija Mihailović.

Zasnova razstavnega projekta *Odmevi jutrišnjega dne* temelji na igri odsevov, ujetih v lahkotni in na trajnosti utemeljeni krožni postavitvi, 2024. Foto: Andrija Mihailović.

Research

Visual Literacy Education Through Sustainability

Barbara Predan

Education and research at the Academy of Fine Arts and Design of the University of Ljubljana

The Academy of Fine Arts and Design is a member of the University of Ljubljana and the oldest and foremost national educational and research institution in the fields of art, conservation and design. Our mission at the Academy is to educate critically thinking creators who will be equipped to create, research and lead independently. As an educational, research and art institution we are committed to identifying and addressing social challenges through critical engagement with the aim of creating change and promoting development. In our work, we respond to climate and environmental emergencies by actively participating in the shaping of the green transition towards a zero carbon footprint. In the long term, we strive to make sustainable development a part of all of the Academy's activities and processes.

In the development of the study programmes we emphasise individual work with students, striving to maximise the transfer of knowledge and experience from the professional staff to the students. In our educational process we therefore focus on:

- ↪ creativity
- ↪ innovation and practical learning
- ↪ the broader social context
- ↪ transdisciplinarity
- ↪ a strong emphasis on theory
- ↪ critical and independent thinking
- ↪ sustainability

40 years of higher education in the field of design

In 1984, after years of professional efforts, the higher education study programme for design was launched under the Department for Design at what was then the Academy of Fine Arts. At the time of its establishment, the Department for Design covered the industrial and graphic design study courses. With the further development of higher education in design, this has grown to five study courses (Industrial Design, Applied

Arts, Graphic Design, Illustration and Photography) under careful and thoughtful ongoing development by the Department of Industrial Design and Applied Arts and the Department of Visual Communications Design. Both of the design departments work to foster the development of gifted individuals trained in design research and development. Through their studies, students acquire knowledge in the broader field of design thinking and visual literacy, which empowers them to work independently and innovatively, with the ability to thoroughly conceptualise the most complex tasks in the context of transdisciplinary teamwork, and to assume an attitude of critical responsibility for environmental and social issues.

Research Institute of the Academy of Fine Arts and Design

The Research Institute of the Academy of Fine Arts and Design is the leading organisation in the field of art, design and cultural heritage research. Our research involves an examination of past, present and emerging practices in art, design and conservation-restoration and is based on creative, critical and innovative practices. They focus on current, social-environmental and other global challenges and actively build on collaboration between disciplines. The Academy's research activities drive collaboration with the local community and promote international collaboration. One of the priorities of the Research Institute at the Academy is the presentation and publication of research results.

Research in the field of sustainability has been especially prominent in the last three years, as the Academy made a deliberate commitment at the end of 2021 to start actively addressing the climate and environmental emergencies. It was the first Slovenian educational institution to join the global initiative of universities for transitioning towards a zero-carbon world, initiated by the Alliance for Sustainability Leadership in Education. Today, the Academy actively participates in one research programme and 11 research projects that directly address sustainability topics. The stand-out projects include those we manage and implement together with other partners within the *UL for a Sustainable Society – ULTRA* programme with funding by the Ministry of Higher Education, Science and Innovation of the Republic of Slovenia and the European Union – NextGenerationEU.

As part of the *Natural Resources and Food* pilot, we are participating in the project "Urban agriculture for a green transition to a smart and

sustainable society and inclusive growth" under the leadership of the Biotechnical Faculty of the University of Ljubljana. Under the *Innovative Learning Environments* pilot, we are pursuing three research projects: one, "Promoting innovative learning environments for teaching engineering students on the topics of green transition", led by the Faculty of Electrical Engineering of the University of Ljubljana, and two projects led by the Faculty of Mechanical Engineering of the University of Ljubljana, namely: the "Digital study programme for Mechanical Engineering" and the "Open Laboratory". Under the *Environmental Technologies* pilot we are conducting the following research projects: "Optimised study environment in Society 5.0: Developing a model for measuring environmental parameters and their effects on the participants of the study process with the aim of supporting the transition to a green and sustainable academic society" and "Additive digital technologies for the fabrication of composite elements". The first project is led by the Faculty of Electrical Engineering of the University of Ljubljana, and the second by the Faculty of Civil and Geodetic Engineering of the University of Ljubljana. The research project "Developing (future) educators' competences to promote green transition, sustainable development and environmental literacy in early childhood" is conducted under the *Environmental and Digital Literacy* pilot. The project's lead partner is the Faculty of Education of the University of Ljubljana. At the end of 2023, we also secured the project "Educational ecosystem for the acquisition of digital competencies of educators and university students," which is led by the University of Ljubljana and which we are launching in partnership with that institution in 2024.

Within the programme *UL for a sustainable society – ULTRA: Lifelong Learning and Micro-credentials*, the Academy is the lead partner in the "Green Nudge" research project. The project is developed in collaboration with the Faculty of Arts, the Faculty of Education and the Faculty of Electrical Engineering. The research builds on Nudge Theory, which itself builds on the understanding of the psychology of decision making, with the aim of broadening the socioscientific perspective in the field of sustainable behaviour. The advantage of the project is that it combines behavioural sciences with design thinking approaches, as it builds on sustainable and innovative solutions to the pressing issues of global warming and encourages individuals (in the context of sustainability) to make better choices. At the same time, this interplay of knowledge and approaches can lead to new ideas and a shift in social values, giving a nudge the power to tangibly and effectively change environmental behaviour. The project therefore aims to develop an education programme based on:

- ↪ the importance and goals of promoting sustainable behaviour
- ↪ the opportunities for using green nudges to promote sustainable behaviour
- ↪ behavioural design
- ↪ the psychological processes impacting the decision to behave sustainably
- ↪ the effectiveness of green nudges
- ↪ the ways of quantifying it

In addition to the ULTRA programme, we are also involved in two basic research projects in the field of sustainability, which are co-funded by the Slovenian Research and Innovation Agency (ARIS). These projects are "Heritage for Inclusive Sustainable Transformation – HEI-TRANSFORM", which is led by the Faculty of Architecture of the University of Ljubljana, and "Stucco marble altars in Slovenia: materials, conservation, and meaning," led by the Institute for the Protection of Cultural Heritage of Slovenia. In the first one (HEI-TRANSFORM), the researchers are exploring the possibilities for improving the competitiveness of the Slovenian immovable cultural heritage with a clear focus on identifying its potentials and integrating them into the process of the green transformation. In the second, the research team's focus is on preparing a comprehensive inventory of Baroque altarpieces in Slovenia and carrying out a scientific analysis with the aim of gaining a deeper understanding of the materials and techniques and pushing forward the development of sustainable conservation approaches in the form of reducing the use of organic solvents and choosing long-lasting materials in order to prolong their use.

Without doubt, one of the outstanding successes of the Research Institute of the Academy of Fine Arts and Design lies at the very intersection of scientific and artistic research—the establishment of the first research programme led by the Academy, "Visual Literacy." It is the first research programme at the University of Ljubljana to combine scientific and artistic research on an equal footing and focus on visual literacy in the field of sustainability. Among the central activities of the research programme is the identification and definition of the basic principles of visual literacy in the post-pictorial turn period and the so-called digital reproducibility. The main emphasis is on exploring the influence of visual literacy in dialogue with new forms of knowledge, technology, culture, art, education, politics, medicine, digitalisation, communication practices and discourse. The reformulation and transformation of existing knowledge, arts and techniques, as well as the rise of new, transitional and

indeterminate theoretical endeavours that have yet to find an established place in the cartography of knowledge, call for a corresponding renewal of the methodological approaches of visual literacy, in order to participate in thought experiences as they emerge in the various fields of knowledge, culture and politics.

The research programme will therefore not focus solely on critical analysis with the aim of preserving or perpetuating the existing expertise in the field of visual literacy, but on developing the intellectual and practical potentials of visual literacy to make it even better suited to respond to the challenges of the modern world. This is a world flooded with an overwhelming amount of accessible data—but data in itself is not information. To be transformed into information, the data needs to be processed, properly contextualised and interpreted accordingly. An important step in this process is the visualisation of the data, and the choice of the data and the manner of its visual presentation has a major impact on the final interpretation. The research programme will explore, in a close inter- and transdisciplinary dialogue and through scientific and artistic research, the ways in which visual literacy is able to address key and complex issues of the modern world, such as climate change, inequality, technological progress, access to information and, last but not least, the fight against misinformation. The research programme "Visual Literacy" (P5-0452) at the Academy is co-financed by the Slovenian Research and Innovation Agency (ARIS).

Raziskovanje

Vizualno opismenjevanje skozi trajnost

Barbara Predan

Izobraževanje in raziskovanje na Akademiji za likovno umetnost in oblikovanje Univerze v Ljubljani

Akademija za likovno umetnost in oblikovanje je članica Univerze v Ljubljani (UL ALUO) in je najstarejša ter vodilna nacionalna univerzitetna izobraževalna ustanova na področjih likovnih umetnosti, restavratorstva in oblikovanja. Na Akademiji izobražujemo kritično misleče ustvarjalce, usposobljene za samostojno ustvarjanje, raziskovanje in vodenje. Kot izobraževalna, raziskovalna in umetniška institucija smo zavezani h kritičnemu prepoznavanju in reševanju družbenih izzivov z namenom ustvarjanja sprememb in spodbujanja razvoja. Pri svojem delu se na podnebne in okoljske izredne razmere odzivamo tako, da aktivno sooblikujemo zeleni prehod v doseganju ničelnega ogljičnega odtisa. Dolgoročno stremimo k temu, da bo trajnostni razvoj postal sestavni del vseh aktivnosti na Akademiji in bo vključen v vse procese delovanja.

Študijski programi so oblikovani s poudarkom na individualnem delu s študenti v želji po čim večjem prenosu znanja in izkušenj strokovnega izobraževalnega kadra na študente. V izobraževalnem procesu se zato osredotočamo na:

- ustvarjalnost,
- inovativnost in praktično učenje,
- širši družbeni kontekst,
- transdisciplinarnost,
- izjemen poudarek na teoriji,
- kritično in samostojno mišljenje ter
- trajnostni pristop.

40 let visokošolskega izobraževanja v oblikovanju

Leta 1984 je na Oddelku za oblikovanje na takratni Akademiji za likovno umetnost po dolgih letih strokovnih prizadevanj zaživel visokošolski program oblikovanja. Ob ustanovitvi je Oddelek za oblikovanje pokrival študijski smeri industrijskega in grafičnega oblikovanja, z nadaljnjim razvojem visokošolskega izobraževanja v oblikovanju pa danes pet študijskih smeri (industrijsko oblikovanje, unikatno oblikovanje, grafično oblikovanje,

ilustracija in fotografija) skrbno in poglobljeno razvijata Oddelek za industrijsko in unikatno oblikovanje ter Oddelek za oblikovanje vizualnih komunikacij. Oba oblikovalska oddelka spodbujata razvoj nadarjenih posameznikov, usposobljenih za razvojnoraziskovalno oblikovalsko delo. S študijem študenti pridobijo znanja s širšega področja oblikovalskega mišljenja in vizualne pismenosti, kar jih opolnomoči za samostojno in inovativno delo, z zmožnostjo temeljitega koncipiranja najzahtevnejših nalog v timskem transdisciplinarnem sodelovanju ter kritične odgovornosti do družbeno-okoljskih vsebin.

Raziskovalni inštitut Akademije za likovno umetnost in oblikovanje

Raziskovalni inštitut Akademije za likovno umetnost in oblikovanje je vodilna organizacija za raziskovanje umetnosti, oblikovanje in kulturno dediščino. Naše raziskave obravnavajo pretekle, sedanje in nastajajoče prakse v umetnosti, oblikovanju ter konservatorstvu in restavratorstvu ter temeljijo na ustvarjalnih, kritičnomislečih in inovativnih praksah. Med drugim se osredotočajo na aktualne, družbeno-okoljske in druge globalne izzive ter aktivno gradijo na sodelovanju med disciplinami. Raziskovalna dejavnost Akademije je gonilo sodelovanja z okoljem in vidno spodbuja mednarodno sodelovanje. Ena od prioritet Raziskovalnega inštituta na UL ALUO so tudi predstavitve in založništvo izsledkov raziskav.

V zadnjem triletnem obdobju posebej izstopa raziskovanje v polju trajnosti. Akademija se je namreč konec leta 2021 načrtno zavezala aktivni obravnavi podnebnih in okoljskih izrednih razmer. Kot prva slovenska izobraževalna institucija se je pridružila globalni iniciativi Univerz za delovanje k prehodu v brezogljični svet, katere pobudnica je Zveza za trajnostno vodenje v izobraževanju. Danes UL ALUO aktivno sodeluje v enem raziskovalnem programu in 11 raziskovalnih projektih, ki neposredno obravnavajo trajnostne tematike. Med izstopajoče se uvrščajo projekti, ki jih vodimo in izvajamo z drugimi partnerji v programu UL za trajnostno družbo – ULTRA ter jih financirajo Republika Slovenija, Ministrstvo za visoko šolstvo, znanost in inovacije in Evropska unija - NextGenerationEU.

V pilotu Naravni viri in hrana sodelujemo v projektu Urbano kmetijstvo za zeleni prehod v družbo pametne, trajnostne in vključujoče rasti, nosilna članica je Biotehniška fakulteta Univerze v Ljubljani. Pod okriljem pilota Inovativna učna okolja izvajamo tri raziskovalne projekte, in sicer

Spodbujanje inovativnih učnih okolij pri učenju in poučevanju študentov tehnike o tematikah zelenega prehoda, nosilna članica je Fakulteta za elektrotehniko Univerze v Ljubljani, ter dva projekta nosilne članice Fakultete za strojništvo Univerze v Ljubljani, to sta Digitalni študijski program strojništva in projekt Odprti laboratorij. V pilotu Okoljske tehnologije izvajamo raziskovalna projekta Optimizirano študijsko okolje v Družbi 5.0: Razvoj modela merjenja okoljskih parametrov in njihovih učinkov na udeležence študijskega procesa za podporo prehodu v zeleno in trajnostno akademsko družbo ter projekt Dodajalne digitalne tehnologije za gradnjo kompozitnih elementov. Nosilna članica prvega projekta je Fakulteta za elektrotehniko Univerze v Ljubljani, drugega pa Fakulteta za gradbeništvo in geodezijo Univerze v Ljubljani. V pilotu Okoljska in digitalna pismenost pa poteka raziskovalni projekt Razvoj kompetenc (prihodnjih) vzgojiteljev za spodbujanje zelenega prehoda, trajnostnega razvoja in okoljske pismenosti v zgodnjem otroštvu. Nosilni partner projekta je Pedagoška fakulteta Univerze v Ljubljani. Konec leta 2023 smo pridobili še projekt Izobraževalni ekosistem za pridobivanje digitalnih kompetenc pedagogov in študentov; z nosilnostjo na Univerzi v Ljubljani ga v partnerstvu začenjamo v letu 2024.

V programu UL za trajnostno družbo – ULTRA: Vseživljenjsko učenje in mikrodokazila pa je UL ALUO vodilni partner raziskovalnega projekta Zeleni dregljaj. Ta nastaja v sodelovanju s Filozofsko in Pedagoško fakulteto ter Fakulteto za elektrotehniko. Osnova raziskovanja je teorija dregljaja, ki temelji na razumevanju psihologije odločanja s ciljem širitve družboslovne perspektive v trajnostnem vedenju. Prednost zasnovanega projekta je v prepletu vedenjskih znanosti s pristopi oblikovalskega mišljenja, saj ta gradi na trajnem in inovativnem reševanju perečih vprašanj globalnega segrevanja ter pri posameznikih (v kontekstu trajnosti) spodbuja sprejemanje boljših odločitev. Hkrati pa ravno ta preplet znanj in pristopov lahko privede do novih zamisli in spremenjenih družbenih vrednot, kar dregljaju omogoči oprijemljiv in učinkovit način spreminjanja okoljskega vedenja. Cilj projekta je zato razviti program izobraževanja, ki bo temeljil na:

- pomenu in ciljih spodbujanja trajnostnega vedenja,
- možnostih uporabe zelenih dregljajev za spodbujanje trajnostnega vedenja,
- vedenjskem oblikovanju,
- psiholoških procesih, ki vplivajo na odločitev za trajnostno vedenje,
- učinkovitosti zelenih dregljajev in
- načinih njenega ovrednotenja.

Poleg programa ULTRA v trajnosti na UL ALUO sodelujemo tudi v dveh temeljnih raziskovalnih projektih, ki jih sofinancira Javna agencija za znanstvenoraziskovalno in inovacijsko dejavnost Republike Slovenije (ARIS), to sta projekta Dediščina za vključujočo trajnostno preobrazbo – HEI-TRANSFORM z nosilnostjo na Fakulteti za arhitekturo Univerze v Ljubljani ter projekt Štukmarmorni oltarji v Sloveniji: materiali, ohranjanje, pomen, ki ga vodi Javni zavod Republike Slovenije za varstvo kulturne dediščine. Pri prvem (HEI-TRANSFORM) raziskovalci raziskujejo možnosti izboljšanja konkurenčnosti nepremične kulturne dediščine Slovenije z jasno usmeritvijo v prepoznavanje in vključevanje njenih potencialov v proces zelene preobrazbe. Pri drugem pa se raziskovalna skupina osredotoča na pripravo celovitega pregleda in znanstveno analizo izbranih slovenskih baročnih oltarjev z namenom poglobljenega poznavanja materialov in tehnik ter nadaljnjega razvoja trajnostnega konserviranja v obliki zmanjševanja uporabe organskih topil in na izbiro dolgotrajnih materialov z namenom podaljšanje njihove uporabe.

Med izjemne uspehe Raziskovalnega inštituta Akademije za likovno umetnost in oblikovanje pa se na prepletu znanstvenega in umetniškega raziskovanja nedvomno uvršča pridobitev prvega raziskovalnega programa z naslovom Vizualna pismenost z nosilnostjo na UL ALUO. Gre za prvi raziskovalni program na Univerzi v Ljubljani, ki enakovredno povezuje znanstveno in umetniško raziskovanje ter se med drugim ukvarja z vizualno pismenostjo v polju trajnosti. Ena od osrednjih nalog raziskovalnega programa sta identifikacija in opredelitev temeljnih načel vizualne pismenosti v obdobju po slikovnem obratu in t. i. digitalne reproduktibilnosti. Poudarek je na raziskovanju vpliva vizualne pismenosti v dialogu z novimi oblikami znanja, tehnologije, kulture, umetnosti, izobraževanja, politike, medicine, digitalizacije, komunikacijskih praks in diskurza. Reformulacija in preoblikovanje obstoječega znanja, umetnosti in tehnik ter vzpon novih, prehodnih in nedoločljivih teoretskih prizadevanj, ki še nimajo ustaljenega mesta v kartografiji vednosti, zahtevajo ustrezno prenovo metodoloških pristopov vizualne pismenosti z namenom sodelovanja pri miselnih izkustvih, kakor se porajajo na različnih področjih vednosti, kulture in politike.

Raziskovalni program se zato ne bo osredotočal le na kritično analizo z namenom ohranjanja ali nadaljevanja obstoječih dognanj v vizualni pismenosti, ampak bo usmerjen v razvijanje miselnih in praktičnih potencialov vizualne pismenosti na način, da se še v večji meri kot do zdaj odziva na izzive sodobnega sveta. Ta je preplavljen z ogromno količino dostopnih podatkov, vendar pa podatki sami na sebi še niso informacije. Za njihovo preoblikovanje v informacije jih je treba ustrezno obdelati,

postaviti v ustrezen kontekst in interpretacijo. Pomemben korak pri tem je vizualizacija podatkov, pri čemer pa izbor in način vizualne predstavitve podatkov močno vplivata na končno interpretacijo. Z raziskovalnim programom bomo v tesnem interdisciplinarnem in transdisciplinarnem dialogu s pomočjo znanstvenega in umetniškega raziskovanja preverjali, kako je vizualna pismenost zmožna obravnavati ključne in kompleksne probleme sodobnega sveta, kot so podnebne spremembe, neenakost, tehnološki napredek, dostop do informacij in ne nazadnje boj z dezinformacijami. Raziskovalni program Vizualna pismenost (P5-0452) na UL ALUO sofinancira Javna agencija za znanstvenoraziskovalno in inovacijsko dejavnost Republike Slovenije (ARIS).

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Many thanks to the Dean of the Academy of Fine Arts and Design, Alen Ožbolt, who gladly supported the creation of this publication, once again demonstrating his unwavering support for projects that focus on social and environmental issues. I am sincerely thankful for the trust and support.

Thanks are also due to our reliable partners at the Soglasnik Language Cooperative (translators Tadej Rosa and Vesna Medved and proofreaders Fiona Thompson and Tanja Zečević), who, despite the tight deadlines, managed to provide meticulous proofreading and careful translation of the texts. Once again, thank you very much for your excellent cooperation. My sincere thanks also go to the superb team of graphic designers from AA and Studio Kruh (Anja Delbello, Aljaž Vesel and Gregor Makovec), who made sure that this collection of thoughts took shape in a book that just begs you to immerse yourself in it. Nothing you produce is anything less than inspiring.

— Tamara Lašič Jurković, editor-in-chief

Zahvala

V prvi vrsti se zahvaljujem odlični mentorici in sodelavki dr. Barbari Predan, ki mi je zaupala vajeti pri urejanju te publikacije in hkrati priskočila na pomoč vsakič, ko o čem nisem bila prepričana. Hvala za zanesljivo vodenje projekta in vse tehtne komentarje o prebranem. Vsak projekt, pri katerem imam privilegij sodelovati s tabo, mi da ogromno novega znanja in dodaten zagon za nadaljnje raziskovanje, za kar sem neizmerno hvaležna. Najlepša hvala tudi tesnemu sodelavcu Žanu Kobalu, ki je pomagal pri urednikovanju in bil v oporo med celotnim procesom priprave. Brez tvojega prispevka nam ne bi uspelo.

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Čeprav razstava med pisanjem te publikacije še ni bila realizirana, po opisu sodeč ne dvomim, da bo izjemna.

Najlepša hvala dekanu Akademije za likovno umetnost in oblikovanje Alenu Ožboltu, ki je z zadovoljstvom podprl izdajo te publikacije in s tem znova dokazal svojo neomajno naklonjenost projektom, ki se osredotočajo na družbene in okoljske tematike. Iskrena hvala za vse zaupanje in podporo.

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— Tamara Lašič Jurković, glavna urednica

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Imensko kazalo

From a review by dr. Maja Šuštaršič

The scientific monograph *Echoes of Tomorrow* offers an original, creative and innovative way of taking on intractable and complex societal challenges by proposing a tool to identify areas in which design can offer a response and the approaches it has at its disposal. It has long been apparent that our society is facing multiple interconnected and intertwined problems, i.e. wicked problems. [...] Even defining such a problem poses difficulties, since different vantage points and underlying interests yield different perceptions of the problem. The model's author, Tamara Lašič Jurković, sees it as an aid in obtaining a more holistic view and thus better understanding of wicked problems, which equips us to address them more effectively. [...] The second part of the monograph features an assortment of master's theses that the author has selected to illustrate the use of the tool. [...] The monograph is an important illustration of the power of design to find alternatives to the established processes and systems through the design process by employing creative thinking and finding creative solutions. It offers hope and a fresh perspective on what appears to be a complicated situation with no end in sight.

Iz recenzije dr. Maje Šuštaršič

Znanstvena monografija *Odmevi jutrišnjega dne* se izvirno, ustvarjalno in inovativno spopade s problemom neobvladljivih in neulovljivih kompleksnih družbenih izzivov in predlaga orodje, ki pokaže, na katerih področjih in s kakšnimi pristopi se lahko odziva oblikovanje. Že dlje časa je jasno, da se naša družba srečuje z več medsebojno povezanimi in prepletenimi problemi, t. i. zagonetnimi problemi. [...] Težave nastopijo že pri definiranju problema, ki ga iz različnih zornih kotov in interesnih izhodišč vidimo drugače. Avtorica modela Tamara Lašič Jurković predlaga orodje, s pomočjo katerega lahko vidimo zagonetne probleme bolj celovito, zato da jih lahko bolje razumemo in se lahko posledično z njimi bolje spoprimemo. [...] V drugem delu monografije nam izbrane magistrske naloge, ki so nastale na UL ALUO, ponujajo odlične študijske primere, s pomočjo katerih nam avtorica ilustrativno prikaže uporabo orodja. [...] Monografija je pomemben prispevek k ilustraciji moči oblikovanja, ki skozi oblikovalski proces, s pomočjo ustvarjalnega mišljenja in z iskanjem ustvarjalnih rešitev najde alternative ustaljenim procesom in sistemom. Odpira upanje in svež pogled na zapleteno situacijo, ki ji ni videti konca.

From a review by dr. Simona Žvanut

The aim of this scientific monograph is to draw attention to the interconnectedness of everything around us, including through design. In doing so, it challenges the role of consumption as the overarching principle of modern life. Crucially, consumption—consumerism—is understood here to mean not just shopping and generation of waste, but the strategy employed to shape how humans think, feel and assign value. The texts thus develop critical thought, arguing for the necessity of seeking the means for our survival outside the established socio-political system, which is still largely driven by the dictates of capital, with the idea of continuous progress seen as the natural order of things. They advocate a new perspective in which design is seen as a creative and intellectual activity that is not reduced to merely solving, with varying degrees of success, various technical issues and satisfying client requirements. Design of the future needs to be self-reflective, interdisciplinary, participatory and responsible towards humans and the environment, as well as holding up a critical mirror to our needs and desires. The monograph highlights the need to see, in design, the potential and capability to change the world (for the better) and encourage human emancipatory self-positioning in it.

Iz recenzije dr. Simone Žvanut

Znanstvena monografija opozarja na povezanost vsega, kar nas obdaja, tudi skozi oblikovanje. Zoperstavlja se potrošnji kot osrednjemu principu sodobnega življenja, pri čemer je ključno razumeti, da ne gre le za nakupovanje in ustvarjanje smeti, temveč za potrošnjo kot strategijo ukalupljanja človekovega mišljenja, čustvovanja in vrednotenja. Besedila tako razvijajo kritično misel in zagovarjajo nujnost iskanja rešitev za naše preživetje zunaj ustaljenega družbenopolitičnega sistema, ki ga še vedno prvenstveno usmerjata diktat kapitala in ideja neprestanega napredka kot edinega naravnega reda stvari. Utemeljujejo potrebo po novem pogledu na oblikovanje kot ustvarjalni in intelektualni dejavnosti, ki ni reducirano na bolj ali manj uspešno reševanje tehničnih vprašanj ali zadovoljevanje naročnikovih zahtev. Oblikovanje prihodnosti mora biti samorefleksivno, interdisciplinarno, participatorno, odgovorno do človeka in okolja ter kritično zrcalo našim potrebam in željam. Znanstvena monografija izpostavlja nujnost, da v oblikovanju vidimo potencial in zmožnost spreminjanja sveta (na bolje) ter spodbujanja človekovega emancipatornega samoumeščanja v njem.

Echoes of Tomorrow

Tamara Lašič Jurković
(editor-in-chief)

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UNIVERSITY OF LJUBLJANA
ALUO Academy of Fine Arts and Design

Odmevi jutrišnjega dne

Tamara Lašič Jurković
(glavna urednica)

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