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RE-MIX PROJECT – HYBRIDISATION LEADING TO DISRUPTIVE INNOVATION

Vanna Savina TORRISI[1], Tokushu INAMURA[2] and Yasuyuki HIRAI[2]
[1]School of Design, Royal College of Art
[2]Faculty of Design, Kyushu University

ABSTRACT
The focus of this paper is disruptive innovation, created through processes of hybridisation. For the purpose of this study, the term 'hybridisation' refers to the blending of design practices that strongly reflect key societal and behavioural aspects of the two or more respective original cultures. The research addresses the role of hybridised design practices in tackling documented weaknesses in the innovation industry in Japan and in the UK. Re-mix is a collaborative research project between the Royal College of Art (RCA) and Kyushu University (KU). A series of experimental short projects explored the mutual impact of combining two design practices embodying the regional cultures of the involved institutions. The contrasting design practices embrace the full spectrum of innovation: from incremental innovation (KU) through inclusive approaches with close coordination with participatory communities, aiming at solid improvements, to radical innovation (RCA) fostered by diversity, ambiguity, improvisation, conflict, high-risk strategies and acceptance of failure. Two projects were undertaken in London and Fukuoka, which were used as fields for mutual observation, and mapping of practices during and after the end of each phase of the project. This revealed opposing factors in innovation culture and process, as documented in the literature. Initial findings have shown strong potential in this approach, as a method to trigger a novel hybrid process. Based on the observation of team performance, it has been postulated that such a process may be characterised by non hierarchical structure, as well as effectively merging a risk taking culture with specialist knowledge.

Keywords: Hybridisation, interdisciplinary, innovation, disruptive, participatory, design thinking

1 INTRODUCTION

Several research studies emphasise the relationship between interdisciplinary and the creation of disruptive innovation. Innovation of new human interactions and complex system-based dynamics requires interdisciplinary, if it is to foster behavioural change that generates cultural, economic and societal value. As asserted by Newell "[...] the objects of interdisciplinary studies are complex – indeed, that complexity is both a necessary and a sufficient condition for interdisciplinary studies." [1]. However, the focus seems to be predominantly on the intersection of disciplinary inputs while less attention is given to diverse cultural and personality-based traits on creative collaborations. Drawing from the authors' collective expertise in interdisciplinary collaborations and inclusive design, the potential for innovation in new multi-faceted social dynamics have been identified, and has fostered the shift of focus, from interdisciplinary to *hybridisation*. This research suggests that a *hybrid design process*, an as-yet unframable offspring originating from two very distinct entities, seems to effectively trigger the creation of radical novelty. The distinct socio-cultural characteristics of the two collaborating parties are significant. London can crudely be seen as a locus of diversity and constant evolution in the UK, whereas Japan's culture can be considered more homogeneous, structured and emphasising heritage.

Japan's industry, though having produced iconic products that have impacted key aspects of everyday experiences over the last 50 years, is in need of change. Ready, amongst others, point out that Japan's resistance to prompt evolution is rooted in cultural norms built upon aversion for failure and low risk tolerance [2]. Graham reports that social harmony and obedience prevail. Sawa partially attributes the recent decline of innovation, to the structure of national higher education, which prefers acquiring specific knowledge and skills, over independent thought and self-expression, factors that are all

fundamental to originality [4]. Despite such dominant norms it is important to note that there are important cases that buck the trends. Norman and Verganti illustrate with the Nintendo Wii, how an old Japanese corporation delivers radical product innovation through the creation of new meaning, opening up gaming beyond expert gamers, through the smart use of comparatively inferior technology to the competition [5].
On the contrary, the UK at present has a leading position in research and possesses four of the world's leading universities. The UK track record in innovation is fostered by an approach that emphasises the relevance and specificity of the single individual in a rampant bottom-up system that encourages a sense of initiative and originality through a risk-taking culture and acceptance of failure. However, Hauser points out that, due to the gap between universities and industry that is not yet effectively bridged, the UK does not succeed in translating innovation and technology into economic advantage [6].
KU and RCA design practices also reflect the situation of innovation in Japan and UK. KU (incremental innovation) and RCA (radical innovation) approaches to innovation and creativity seem to have the potential to be turned into a unique opportunity to generate real value through the creation of processes of *hybridisation*.

2 A REVIEW OF EVIDENCE IN THE FIELD

The idea of *hybridisation* is inherently embedded in the processes leading to the creation of collaborative design. Bourriaud and Muller point out those participatory projects are predominantly originated from *hybridity*, instead of homogeneity [7]. *Hybridisation*, by nature involves uncertainty and the presence of a border or barrier to be overlapped, in order to generate a third new practice that merges the traits of the two original entities and related cultures. The interaction between the two entities implies dealing with 'chronic uncertainty'. As Beck stresses, uncertainty generates a risk-taking culture based on the perception of risk as an unavoidable and even desirable factor, which triggers continuous questioning and openness to evolution, and therefore to innovation. Ljungblad and Holmquist assert "[…] in the creative process in which everything is possible and that has no boundaries or borders, creativity has nothing to build on. We think it is useful to create boundaries that do not limit but instead nurture creativity" [7].
Morse *et al* examine issues that depending on the context can support or obstruct interdisciplinary collaborations in order to foster the opportunity of translating barriers into bridges [8].
"We found that each issue is positioned on a spectrum and can become a bridge or a barrier depending on team context. For example, the issue of "taking risks" to work with the unfamiliar can be a bridge to integration if the individual is willing to try something new and push disciplinary boundaries, or a barrier if the student prefers only to conduct traditional disciplinary research" [8].
Dealing with the unfamiliar, introducing elements of surprise, enabling miscommunication, tension and even allowing conflict to emerge along with the ability to engage with each other's diversity, seem to be strong driving forces for design innovation, especially if exploited at the early stages of collaboration [9].

3 METHOD

The literature review conducted revealed documented weaknesses in Japan and the UK, with the need to reinvigorate the economy by creating new strategies and innovation cultures, and in translating science and technology to economic advantage, respectively. Further reading of design approaches identified *hybridity* as a potent concept. A hypothesis was formulated, that through *hybridisation*, a novel process might be developed to tackle the above weakness, harnessing the diversity between UK and Japan's approach to innovation design. An approach toward *hybridisation* was proposed for the purpose of this study, and is illustrated in Figure 1. This centred on auto-ethnographic reflection, in tandem with mutual ethnographic observation and mapping, with the objective to develop a potential hybrid process. Entitled Re-mix, two experimental short projects were conducted to provide a field to implement the approach. Each part of the project was based on the typical format undertaken by each side, with modifications. The participants of the project on each side, conducted team-based design work under facilitation of the authors, with the umbrella theme of inclusivity. The outputs of the teams, as well as feedback were documented in text, diagrams, video and photography. The teams were interviewed, and conducted reflective exercises including tracking mood, and documenting their actions, thoughts and feelings during the project. Collected artefacts were analysed and used to

compare the two processes and mapped to reveal key characteristics. These were reviewed in the context of wider implications toward innovation education in the UK and Japan.

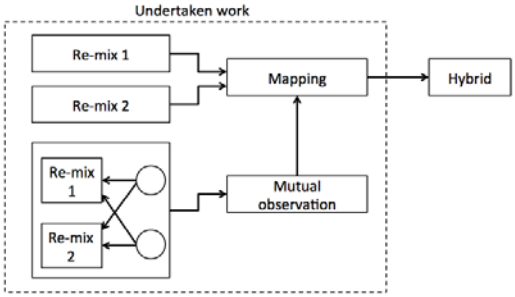

Figure 1. Re-mix Process Diagram

4 RE-MIX PROJECT

4.1 Re-mix 1, London

4.1.1. Re-mix 1 Structure

The first instalment of Re-mix was held at the RCA in October 2015 and led by a team of academics from the RCA and KU including the authors of this paper. The diversity between the designs practices of the two institutions involved, embraced the full spectrum of innovation, from incremental innovation (KU) to radical innovation (RCA), as framed by Norman and Verganti [5]. This enabled the juxtaposition of their contrasting yet complementary approaches. Five academics from KU, whose expertise range from anthropology, built environment to gamification, content design and sound culture, joined the project as equal participants working in teams with RCA students from across the college. The authors from KU acted as observers. Re-mix 1 was defined by a set of criteria tested and refined in previous projects that have been running in the RCA for the last five years. The following criteria define this format:

- Brief, deliberately open to broad interpretation
- 5 day project
- Horizontal team structure
- Students from the same programme spread across different teams
- Mainly students at the beginning of their studies

In previous research projects, these criteria fostered the exploration of alternative routes leading to a highly creative idea generation process and ultimately to the creation of innovation by triggering the following dynamics:

- Tacit willingness that all participants' backgrounds should input into the project.
- Initial tension and conflict caused by diverse creative thinking and clashing time schedules.
- Intense sketching and model making activities replace excess verbal communication.
- Differing understanding of the brief translated into intellectual and inspirational breadth [9].

The above-listed criteria merged with KU's area of expertise inspired the project brief. Three themes framing key relationships, picturing contemporary urban dynamics were selected: 1.Predator VS Prey, 2. Two Neighbours, 3. Interviewer/ Interviewee.

4.1.2. Re-mix 1 Result

Feedback provided by the participants and reflections upon Re-mix 1 highlighted that:

- The participants from KU found it difficult and frustrating to work on an open and deliberately ambiguous brief. They struggled to adapt to spontaneous group dynamics.
- The most refined and original outputs were delivered by the smallest team that had more participants from KU than from RCA, and by the team that focused on interaction and coding, which were the KU participant's area of expertise. Originality was assessed based on the multifaceted nature of the final outputs, displaying the intersections of different disciplinary inputs with relevance to the given context.
- The ambiguous brief fostered the development of collaboration through common narrative and

visual communication.

- The only RCA participant, part of the smallest team, showed a remarkable ability to improvise and adapt to continuously changing group dynamics through sketching and model making.
- Communication was on a pull basis. Teams sought resources/knowledge proactively.
- The expertise of the KU participants and their very structured approach to creativity had a stronger impact on the final phase of the project than on the initial concept generation phase.
- Cautiousness, language barriers or the want to not impose their expertise were voiced.

4.2 Re-mix 2

4.2.1. Re-mix 2 Structure

The second instalment of Re-mix was held in Fukuoka in February 2016. The project further explored one of the three themes investigated in Re-mix 1: interviewer/interviewee, to be interpreted as a key form of dialogue in a diverse society with the other two themes introduced briefly. The project followed the typical inclusive design process as conducted at KU, as in the following:

- Team forming with defined team leaders
- Gathering observations and thoughts (divergent)
- Forming insights (convergent)
- Ideation (divergent)
- Idea selection and Prototyping (convergent)
- Final presentation (convergent)

The merging of the two design practices as a partial hybrid induced the following changes in the KU approach to design and format of their projects:

- Four full days saddling a weekend, instead of the standard two day workshop
- Open brief, although more defined and clearly framed than Re-mix 1
- Refined final outputs, with no cardboard mock ups
- Translators were assigned to all teams
- The partner (end–user) was fully involved in all phases of the design process.

4.2.2. Re-mix 2 Result

The RCA team acted as tutors and not as participants. This allowed them to observe and analyse the KU practice, which seemed to be strongly defined by the following factors:

- Rigorous inclusive design approach
- Hierarchical team structure including: a partner + a leader (member of the faculty) + students
- Dense project schedule was including every day: one ice breaker activity + one lecture + tutorials
- Top down communication from the team leader, to the students who were implementing the leader's proposal
- Leaders taking tutors' advice as directions to be followed
- Teams narrowing down to one direction early

Different group dynamics revealed potentially meaningful correlations between the hierarchal structure of each group and the level of innovation and originality of the delivered outputs:

- The two groups led by the experienced leaders in hierarchical teams, delivered intriguing, but unrefined design outputs.
- The group with intermittent leadership built a good rapport with the DP. They delivered an original proposal that showed strong potential, but was far from being fully resolved.
- An original and refined proposal was delivered by a group with a horizontal team structure. The assigned group leader was a university professor, who deliberately decided not to act as such.

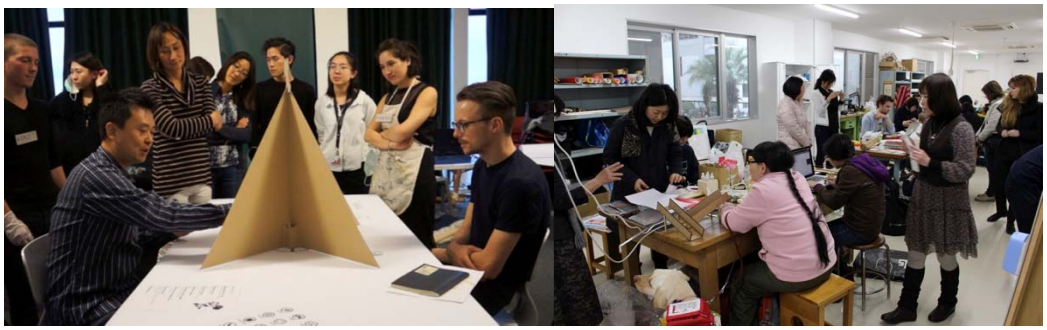

Figure 2. KU and RCA teams working on Re-mix 1 and Re-mix 2

5 DISCUSSION

Through the two projects, the KU practice showed notable resemblance to the Goal-Action–Feedback Loops model by Pangaro. In this model, a system acts to accomplish a goal in a given context. The system compares the output delivered at the end of each cycle with the determined goal. Discrepancies between the output and the goal imply further cycles of refinement until the output and the goal coincide [10]. The KU practice determines a well-framed goal to be achieved through multiple rounds of reiterations until the final output and the ideal goal perfectly match. It seems that the KU practice aims at perfection. The RCA practice shows more similarities with the Second-Order Feedback Loops model by Pangaro. This model adds a second loop in which the action redefines the goal of the first loop. This implies that each cycle involves the re-iteration of output whilst redefining the goal. The goal is in constant evolution along with the design process. If KU aims at perfection, RCA aims at evolution [10]. The approaches of the two institutions were further reflected upon, through mutual analysis of both practices at the end of each project. This process reinforced the assumption that the greater the diversity between the design approaches, the higher the chance to create remarkable innovation through processes of hybridisation.

	BRIEF	SCHEDULE	TEAM KEY ASPECT	TEAM STRUCTURE	VALUE DRIVER	MATERIALS
IDE-RCA	AMBIGUOUS, OPEN TO DIVERSE INTERPRETATION	LIGHTLY STRUC-TURED, ENABLING SELF-DIRECTION	DIVERSITY: CULTURE LANGUAGE SKILLS	HORIZONTAL DEMOCRATIC	INTERNAL DESIGN DRIVEN	PROACTIVELY ACQUIRED BY TEAMS, SOPHISTICATION EXPECTED
KYUSHU UNIVERSITY	CLEARLY FRAMED	HEAVILY STRUCTUTERD	HOMOGENEITY DIVERSITY IN-PUTED BY DESIGN PARTNER	VERTICAL HIERARCHICAL KEY DECISION TAKEN BY LEAD-ERS AND DESIGN PARTNERS	EXTERNAL USER DRIVEN	SUGGESTED PRO-TOTYPING TOOLS ENCOURAGEMENT GIVEN

Figure 3. Table mapping the design practices of the RCA above and KU below

The contrasting practices compared in the above table, echo oppositions in relation to innovation documented in the literature focusing on contrasts in culture and process:
Heavily Structured vs. Lightly Structured
Layered Expertise vs. Improvisation
Vertical & Hierarchical vs. Horizontal & Democratic
Fixed Perfection vs. Evolution
Agreement vs. Conflict
Group-ism vs. Individuality
Predictability vs. Uncertainty
Certain Success vs. Noble Failure
These factors represent important dichotomies of Japan and the UK's culture, and define diverse aspects of society from the structure of their education to the philosophy of their local innovation industry. However, they are not necessarily mutually exclusive; they are contrasting yet complimentary. Embracing the opposition and orchestrating their intersection is a challenge that is crucial in order to harness the potential of hybridisation.

6 FINDINGS

The Re-mix project has generated a significant mutual impact on the approaches of the institutions involved: for RCA, the adoption of a slightly more structured approach utilising specialised expertise, and for KU the embracing of uncertainty and conflict into the creative process. Re-mix has demonstrated a powerful approach in exploring hybridisation through the short projects conducted as initial experiments. Applying auto-ethnographic reflection, in tandem with mutual observation and mapping, this approach has demonstrated its affordance toward hybridisation. The study revealed a list of contrasting dichotomies that mirrored the societal characteristics of UK and Japan that shaped their higher education and ultimately the innovation industry.

The clash between the opposite yet complementary dichotomies triggered an initial and mutual hybridisation, enabling exemplar design teams to combine the rigorous expertise developed in a culture of concrete incremental innovation, with the radical aspects of a more individualistic and risk-taking culture. Further, it can be postulated based on the observations, that there may be a correlation between the structure of the groups and the originality of the final outputs: hierarchy seems not to foster originality and cutting edge innovation. The findings show strong potential to overcome both cultures' weaknesses, merging contrasting strengths. Further research is required in both the development of methods and case studies, with attention to more rigorous experimental design, so that it may culminate into the generation of a true hybrid process.

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