

Exploring how junior designer professionals cope with and learn from value-based conflicts

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This article explores how junior design professionals cope with value-based conflicts. We interviewed 22 design professionals about past and current value-based conflicts and the coping strategies adopted. Applying a grounded theory approach, we identified 11 types of coping strategies employed by junior design professionals. Our findings allowed us to clarify the nature of the coping process and localise value-based conflicts in the process of collaborative practice. During the coping process, professionals learn how to handle value-based conflicts through emotional release, developing a broader action repertoire, and engaging in timely action. We also identified transitions between specific coping strategies as junior designers learned from past conflicts and developed as a professional.

Keywords: collaborative design; values; conflict; coping; reflection

1 Introduction

Misconceptions caused by different values, codes, and perceptions may be a significant hurdle in collaborative design (Carvalho, Dong, and Maton, 2009). Designers in collaborative practice need to integrate differing values held by project stakeholders (Zelenko and Felton, 2013). However, this process of integrating differing values does not always unfold peacefully between reasonable parties, and conflicts may emerge. Conflicts can be based on disagreements, negative emotions, or interferences in the

pursuit of values, needs, and goals (Barki and Hartwick, 2004). We define value-based conflicts as disputes, arguments, and/or frustrations caused by value differences in collaborative design either between the parties involved or as perceived by a junior designer. Value-based conflicts can range from outspoken and fierce conflicts between collaborating partners to internally experienced frustrations about the collaboration process itself. These conflicts emerging from value differences are an inherent part of collaborative practice.

Value differences occur when two or more values do not match. For example, the values underlying people's support for and pursuit of sustainability versus profit reflect value differences (Schwartz and Sortheix, 2018; van de Poel, 2009). In literature, the term "values" may refer to worth (Boradkar, 2010), priorities (Lynn Fitzpatrick, 2007), ethics (Manders-Huits, 2011; Friedman, Kahn Jr, and Borning, 2006), or motivational drivers (Schwartz and Sortheix, 2018; JafariNami, Nathan, and Hargraves, 2015; Le Dantec and Do, 2009). The value differences perceived by junior designers may spring from value differences reflecting all of these conceptualisations.

In this paper, we focus on all values in collaborative design that may guide, amplify, or exemplify a designer's behaviour (JafariNami, Nathan, and Hargraves, 2015; Shilton, Koepfler, and Fleischmann, 2013; Le Dantec and Do, 2009; Ricouer, 1994). The typical design values that a designer might find important include quality, beauty, usefulness, and desirability (Le Dantec and Do, 2009; Cross, and Clayburn Cross, 1996). The universal human values a designer may find important could, for example, be respect, ambition, spirituality, family, religion, and tradition (Le Dantec and Do, 2009; Schwartz and Sortheix, 2018). We refer to values as the concepts and characteristics deemed important by design professionals and considered worth pursuing in daily collaborative practices. Taking such a broad approach to values allows

us to explore the nature of value-based conflicts perceived by junior designers. This paper aims to uncover how junior designers cope with value-based conflicts as they develop professionally.

2. Coping with value-based conflicts in collaborative design practice

Previous research (van Onselen and Valkenburg, 2015), observations, and conversations with design practitioners suggest that junior design professionals, in particular, appear to be affected by value-based conflicts. For example, the first author observed such conflicts while coaching a team of 10 junior designers participating in a traineeship programme. The team worked on a project involving a client and users in different co-creation moments. After one-and-a-half weeks, a critical moment occurred when four designers presented the intermediate results to the client. The client rejected their innovative ideas and opted for traditional ideas. The team worked full-time together on the project, only to hear their decisions were not in line with the perspective held by the client.

The four junior designers employed different ways of coping with this value difference between creativity and achievement. A “way of coping” describes how people deal with conflicts and what actions they take to resolve conflicts (Skinner and Zimmer-Gembeck, 2016). After the meeting with the client, the first designer expressed that they should stick to their ideas. The second designer accepted the situation and wanted to adjust their ideas to the client’s requirements. The third designer shared his frustrations and sought group support. The fourth stood silently outside the group, only to express frustration after his coaches intervened.

These observations of junior designers stand in stark contrast with studies documenting the skilful handling of disagreements (McDonnell, 2012), value tensions (Lloyd and Oak, 2018), and value-based conflicts (Schön, 1983) by experienced design

professionals. The divergent responses of the junior designers suggest that they develop their competencies to cope with such conflicts over time. Different factors, such as emotional coping mechanisms or collaboration skills, may play a role when value-based conflicts occur or are anticipated.

For junior designers, strong emotions may arise when there is a mismatch between values (Dick and Dalmau, 2000; Clark, 1997). Dealing with emotions is a way of coping with value-based conflicts, but coping also aims to develop and realise a broader action repertoire (Skinner and Zimmer-Gembeck, 2016). In general, people take actions to manage their immediate (social) surroundings (Skinner and Zimmer-Gembeck, 2016; Dick and Dalmau, 2000), allowing them remain close to their values (Argyris, 1957). Actions in a social context are often part of an interaction cycle between our actions and actions of others (Dick and Dalmau, 2000). Coping, therefore, constitutes a series of actions of adjusting to the presence of a value-based conflict in a given context. For junior designers in particular, coping with conflict is an essential basis for professional growth (Skinner and Zimmer-Gembeck, 2016). This suggests that value-based conflicts may result in meaningful learning experiences for junior designers.

Scholars have also studied how professionals handle conflicts. Argyris (1957) noted workers of industrial firms adapted to conflicts by: (1) leaving the organisation, (2) climbing the organisational ladder, (3) using defensive mechanisms, and (4) becoming apathetic and disinterested. Frydenberg (2017) provides a complete overview of 19 productive coping styles and 14 non-productive coping strategies for professionals in general. A study with public servants (de Graaf, Huberts, and Smulders, 2016) found ways of coping with value-based conflicts through organisational action, such as routinising work or establishing boundaries between departments.

Designers are not necessarily like other professionals, and, therefore, they may employ design-specific coping strategies. Furthermore, conflicts in design teams may be beneficial for innovation (de Dreu, 2006; Farh, Lee and Farh, 2010); thus, conflict avoidance may not be a constructive strategy for designers in their role as innovators. Instead, expert designers make use of conflictual requirements (Lloyd and Oak, 2018; McDonnell, 2016) and collaborate with parties who hold different values (Zelenko and Felton, 2013), suggesting a field-specific approach. Designers deal with uncertainty on a daily basis (Tracey and Hutchinson, 2016) and need to cross boundaries and integrate inputs from various sources of expertise (Carlile, 2002).

Examples of coping strategies from other professions that are useful for designers are related to empathy (Clark, 1997), communication and mediation (Zupan, 2012). Different design methods such as Value Sensitive Design (Friedman, Kahn Jr, and Borning, 2006), Values-led Participatory Design (Iversen, Halskov, and Leong, 2012), and HuValue (Kheirandisch, 2019), encourage designers to empathise with values of stakeholders or make values explicit to improve communication.

Empathic and communicative coping strategies are relevant for designers, however, to pursue meaningful innovation, designers also need to be personally motivated by values and principles (Cross and Clayburn Cross, 1996). These values and principles are tied to their personal engagement with values and personal stances towards various standards in the design profession (Baha et al., 2018; McDonnell 2016). The aforementioned value design methods may support junior designers in empathising with stakeholders' values and integrating them into designs, yet, they do not provide support to junior designers when they cope with their own experiences of value-based conflicts.

Coping with value-based conflicts may be an essential skill for junior designers in adopting a more professionalised work ethic. With regard to issues of professionalisation, difficulties may arise in staying true to one's personal values while being empathic and communicative to others. This paper explores different ways of coping with value-based conflicts and learning experiences for junior designers. The aim is to help junior designers cope more productively, in terms of developing for themselves a personalised, professional mode of working with others.

3 Research methodology

Interview data were collected from 22 design professionals who held various jobs in 16 different design fields (e.g., product design, digital design, and city planning).

Interviewees had different educational backgrounds as well (e.g., industrial design engineering, graphic design, and architecture) (Appendix A). Before the interview, participants were surveyed via email on their codesign experience and personal values. Additional methods to triangulate data were desktop research, workplace observations, and the feedback from participants on interview summaries. Furthermore, two interviews were held with acquainted career coaches who have consulted and guided designers in the Netherlands.

The first eight participants were designers with over 10 years of experience recruited via our network and snowball sampling. We expected their ways of coping with value-based conflicts would be most informative. However, an initial analysis of interview data suggested that participants were most expressive about their experiences with value-based conflicts as junior designers and how these played a role in their development as professionals. The eight senior designers described nine cases of value-based conflicts as junior designers in total, but struggled to recollect details of these conflicts. We then adapted our sampling strategy to include participants with more

recent experiences of conflicts as junior designers (Glaser and Holton, 2004). We first interviewed designers with less than 10 years of experience recruited via our network and social media (e.g. LinkedIn), and then finally we interviewed seven junior designers recruited via our network with 7.5 years of experience or less (Ahmed 2003; Ball et al., 2004; Casakin and Goldsmidt, 1999).

We noticed that participants were reluctant to talk about conflicts when asked directly. Therefore, we inquired about value differences and probed further to find out if these value differences turned into an arguments, frustrations, or conflicts. Participants were asked to explain, in their own words, their views on four topics: personal values, value differences, value differences as junior designers, and their backgrounds. Personal values were defined in the interviews as the values the participants him or herself found important in innovation projects as a design professional. In order to avoid emphasis on dominant design, client, or company values, we asked them to give concrete examples of how their values were or were not implicated in projects. Subtopics in the interview guide and additional stimuli helped us probe for additional details (Appendix A).

A grounded theory approach was applied without hypotheses formed prior to data analysis (Glaser and Holton, 2004). Grounded theory aims to uncover participants' main concerns regarding value-based conflicts rather than reconstruct conflicts through multiple informants. For this reason, we selected 32 reported cases of value-based conflicts as perceived by junior designers for analysis. We selected conflicts experienced by the participants across their careers, ranging from their first internship to seven and a half years after graduation. Collection and analysis took place iteratively, with each new finding and interpretation compared to previous findings and interpretations derived from study data and existing research.

3.1 Coding and modelling coping in context

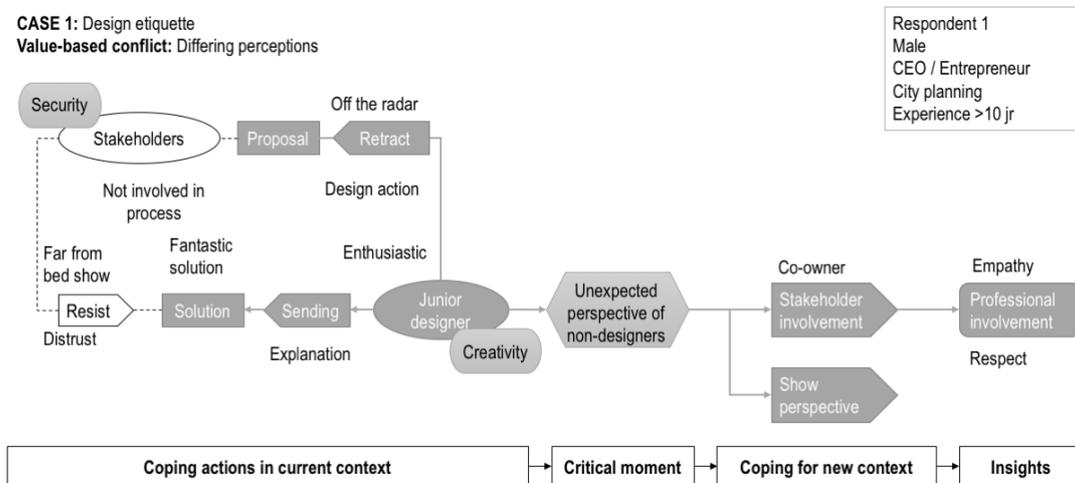
Through a multi-staged coding process, we identified several patterns in the data. First, different types of value-based conflicts were identified and described as cases using the codes. Second, we analysed cases using a constant comparison procedure to identify coping methods. Finally, we modelled contextualised value-based conflicts in diagrams to understand the coping process.

First, we sought to gain a contextual and relational understanding of value-based conflicts and coping actions. To achieve this, manual (open and In Vivo) coding was applied holistically on the interview transcriptions. Throughout the article, codes are shown in SMALL CAPS. Our coding process resulted in 10 to 31 codes per conflict case depending on the length of the conflict narrative. The three authors compared their individual manual coding results. While analysing the interviews, axial codes emerged from the manual codes (see Appendix B). For example, the manual codes DISTRUST and CONFLICT were combined and named NEGATIVE EMOTION/CONFLICT. The manual and axial codes were initially in Dutch and translated for publication.

We explored connections between codes within each specific case by sketching a diagram (Miles and Huberman, 1994). The diagram depicted the conflict context and coping process of a given conflict. Five axial codes were used as building blocks for the diagrams: actor, action, design assignment, values, and professionalism. Through several iterations, we created diagrams of all 32 cases of conflict, which allowed for cross-case comparison between cases. Next, coding in Atlas.ti (open and In Vivo) allowed for coding on smaller chunks of data and multiple codes per line. The manual and Atlas.ti codes were fitted into the diagram to add (a) positive and negative emotions (to understand what emotions arise while coping); (b) contextual information to

understand coping in context; and (c) to uncover coping actions. Finally, the diagrams were visually improved based on feedback from experts and junior designers.

Figure 1 shows a diagram of Case 1 based on manual and Atlas.ti codes. At the centre of the diagram is a junior designer who has experienced a value-based conflict. The codes are depicted in different ways to visualise the coping process of a junior designer with the value-based conflict. After initial actions were performed, we observed a change in conflict situations. Each participant experienced a critical moment in which a value difference became intolerable. The critical moment was followed by a new type of action (e.g. STAKEHOLDER INVOLVEMENT) or a series of new actions applied in another context. Since some participants expressed lessons learned or insights gathered from the conflict experience, the diagrams of these cases concluded with an emergent insight about an alternative professional mindset or value priority.



Footnote figure

Square: the design assignment (i.e. PROPOSAL); Arrow block white: an action by stakeholder (e.g. RESIST) Large oval white: actors (e.g. STAKEHOLDERS); Arrow block grey: action by designer (e.g. RETRACT); Small oval: values (e.g. SECURITY); Hexagon: critical moment; Rounded square: emergent insight (e.g. MORE BUSINESS MINDED)

Figure 1. Diagram of Conflict Case 1: Visualising the conflict and coping process

Analysis of the diagrams resulted in ‘action’ emerging as the central code for understanding coping with value-based conflicts. Action refers to an aspect of human doing that calls for narration, prospectively, as a guide for future action, and retrospectively, as a reflection on self-identity (Ricoeur, 1994). Action springs from internal motives and reflections. For example, in Case 1, the action SENDING was to share a FANTASTIC SOLUTION with the community and sprouted from the ENTHUSIASM that the designer felt with his idea. The actions were ordered chronologically following the conflict diagrams (Appendix B). We identified four types of actions: 1) coping actions type 1 were actions employed before the critical moment, 2) coping actions type 2 were actions used directly after the critical moment in the current context, 3) coping actions type 3 were taken as preventative measures, and 4) coping actions type 1^{nc} were a set of actions adopted in a new context (nc).

3.2 Identifying ways of coping

Through the constant comparison method, we identified patterns in coping actions. First, the diagrams were grouped together using five conflict categories identified in prior research: 1) perfectionistic designer struggles, 2) professional dilemmas, 3) relationship challenge, 4) differing perceptions, and 5) creative frustration. The actions reflected in each diagram within each category were compared and grouped together when one or more actions or emerged insights showed similarities (e.g. INQUIRY – INVESTIGATION). In addition, the emerging categories of coping were checked for similarities with conflict case narratives. For example, the cases C3, C4, C8, and C21 shared similar narratives of early-career entrepreneurs who learned to choose projects that matched their values. At the end of the constant comparison process, we identified 11 ways of coping with conflicts.

3.3 Analysing ways of coping in the early career of junior designers

The conflicts and actions implicated in each case were arranged chronologically, beginning with conflicts during internships and other design work before graduation to conflicts that occurred after 7.5 years of work experience. The chronological organization of conflict cases served to assess if and how ways of coping changed in the early career of junior designers.

4 Results: Ways of coping employed by junior designers

Of the 32 cases, we identified 124 codes associated with actions taken by the designers or other parties (e.g., colleagues, supervisors, marketeers, and manufactures), from which 11 different ways of coping with value-based conflicts were identified (Table 1). Participants adopted a set of actions to cope with collaboration before (coping action type 1) or after a critical moment emerged (coping action type 2). Additionally, participants shared their adjusted actions for new contexts or suggested potentially more effective actions (coping action type 3 and 1^{nc}). Three suggested coping actions type 1^{nc} were identified as too costly or not ideal.

Table 1. overview of ways of coping, actions, and insights

| Way of coping (category) | Case experienced as junior designer | Coping action type 1: actions towards value differences before critical moment (codes) | Coping action type 2: actions to handle value-based conflicts after critical moment (codes) | Coping action type 3: preventative actions after critical moment (codes) | Coping action type 1 ^{nc} : insights and coping actions in new contexts (codes) | |
|--------------------------------------|-------------------------------------|--|---|--|--|--------------------------------------|
| | | | | | <i>Designers (suggested) adjusted actions</i> | <i>Emerged insights of designers</i> |
| | | <i>Designer</i> | <i>Designer in same context</i> | <i>Designer in other contexts</i> | | |
| 1. Pursuing perfection | C14: Pick your battles | Integration Presentation | Work overtime | Go with the flow | | |
| | C17: Not just a client | Work overtime | | Compromise | | |
| | C23: Working overtime | Points out problem | Work overtime | | Formulate concrete assignment | |
| | C26: Working overtime II | | Work overtime | | | Learned a lot |
| 2. Finding acceptance | C5: Quality versus costs | | Inquiry | | | Accepting situation |
| | C9: For a cause | Collaboration | Inquiry | Choose other projects | | |
| | C28: Miscommunication | Investigation | | | Compromise Change printer (not ideal) | |
| 3. Making value-based choices | C21: Change of strategy | Hired | | Choose other projects Initiate other projects | | |
| | C3: Gadget | Provide service | | Choose other projects | Job refusal (not ideal) Don't continue (not ideal) | |
| | C4: Freelance | | End collaboration | | | Entrepreneurial skills |
| | C8: Money vs morality | Hired | | Choose other projects | Job refusal | |

Table 1 (continued). overview of ways of coping, actions, and insights

| Way of coping (category) | Case experienced as junior designer | Coping action type 1 | Coping action type 2 | Coping action type 3 | Coping action type 1 ^{nc} | |
|---------------------------------------|--------------------------------------|------------------------------|--------------------------|----------------------|------------------------------------|--|
| 4. Building confidence | C20: Chaotic project management | Seek support | Explain | Align team | | |
| | C30: Third person | Made notes | Retract | | Stand-up for yourself | |
| | C31a: Insecure about capabilities II | Performed tasks | | | | People will tell you if you are wrong |
| | C32: Only see the problem | Observe Seek support | | | | Self confidence |
| 5. Persevering before changing | C15: Not doing what you like | Be involved Collaboration | | Change career | | |
| | C18: Seen as liability | | Maximise experience | Change job | | Involve others Exchange tasks |
| 6. Harmonising | C6: Disrespectful behaviour | Observe | Open up conversation | | | Resolved |
| | C11: Fundamental misunderstanding | Avoid confrontation | | | | Harmony in collaboration |
| | C13: Gut based decision making | Observe | | | | |
| | C29: Not taken seriously | Observe | Retract | | | |
| 7. Confronting passionately | C16: Shift in attitude | Collaboration | Seek support | | | More business minded |
| | C22: Valued as a designer | Adds value Collaboration | End collaboration | | Time out | |

Table 1 (continued). overview of ways of coping, actions, and insights

| Way of coping (category) | Case experienced as junior designer | Coping action type 1 | Coping action type 2 | Coping action type 3 | Coping type 1 ^{nc} | |
|--|--------------------------------------|---|----------------------------|----------------------|--|--|
| 8. Convincing explanations | C2: Misunderstood | Explain Research | | | | Learn to convince |
| | C12: Work dismissed | Research Last minute changes Collaboration | Refuse freelance job offer | Start-up company | | |
| | C31b: Insecure about capabilities II | Avoid confrontation Unwind | | | Seek support | |
| 9. Switching perspectives | C1: Design etiquette | Off the radar Sending | | | Stakeholder involvement Show perspective | Professional involvement |
| | C7: Politics | Collaboration | | | | Change perception |
| 10. Developing self-understanding | C10: Unclear assignment | | Work overtime | Improvise | | Understand capabilities |
| | C19: Insecure about capabilities | Hired | | | | Grow into Self-confidence Stay yourself |
| | C25: Negative feedback | | Seek support | | Stand-up for yourself | |
| 11. Improving processes | C24: Unaligned design vision | | Search process | | Regulate front end Convince Direct contact decision makers | |
| | C27: Unable to deliver | Urgent meetings Create | | | Take early action Be precise Improve process Develop negotiation skills | |

4.1 Pursuing perfection

Four participants had worked overtime to meet their own high standards or meet the requirements of all project stakeholders. The participants coped by WORKING OVERTIME. For example, in Case 14, the designer was driven by PERFECTIONISM, spending too much time on a project. He aimed to integrate all of the requirements of different departments in one optimal design. He still experienced difficulties convincing his colleagues. Only after time passed did he realise his strategy was not working:

I had to win this battle, but I didn't. You burn a lot of energy. That is what I mean with I would not do that again.

4.2 Finding acceptance

Three participants aimed for understanding the perspective of the other party involved to cope with the value-based conflict. Designers inquired with others about why certain decisions were made in order to make peace with the situation. For example, in Case 5, the junior designer merely did her job and was NOT INVOLVED in the final decision to change the concept in order to REDUCE COSTS.

Interviewer: 'How did you cope with it in the end?'

Respondent: 'By thinking: that is stupid. (Laughs). Thus, [I coped by] actually just accepting it. What a pity.'

After time passed, she asked her manager for the reasons for changing the concept. She found she could rationally accept the decision to change, but her frustration remained.

4.3 Making value-based choices

Four freelance designers learned to choose projects that were aligned with their values after experiencing value-based conflicts. For example, in Case 3, the designer CHOSE OTHER PROJECTS following a conflict:

Thus, if you do a project in which you think, 'Hey, I am not acting in line with my own values and norms.' It will change your perception for the next project. And you can make the choice - shall I do it [the project] or not - on a different basis.

The designers rejected a client's proposed project only if the designer recognised the value conflict at an early stage of the project. By experiencing past value-based conflicts, the designers became more aware of their values and selected projects that matched their values.

4.4 Building confidence

Three junior designers wanted to become self-respecting professionals and worked on building their confidence. In the pursuit of this goal, the participants experienced a value-based conflict. In Case 20, Participant 16 demonstrated a strong AFFINITY WITH PROJECT MANAGEMENT, but in his current role, he was unable to pursue this goal:

I notice that every time you really want to grow, there are many older colleagues who have very enjoyable work. They have a lot of responsibility. That is something I have never experienced.

Although realising his professional dilemma, he wanted to continue his current job because he saw it as relevant experience and a learning ground for improving his capabilities.

4.5 Persevering before changing

Two participants experienced significant health issues, which forced them to stay home from work for a few months. When they returned to work both of their companies experienced drastic strategic changes. The junior designers came to realise that their companies, once ideal employers, longer matched with their values. In Case 18, Participant 15 RECOVERED and felt STRONGER AFTER HIS ILLNESS. After recovering, he

decided to only do things that he enjoyed. The employer thought the illness of the designer was a LIABILITY to the company based on ADVICE of the social service worker. They suggested that he should only work on MAINTENANCE TASKS, which he found rather boring:

Thus, I said to myself, ‘If you work so hard and this is the result, then you will only do things you like.’ [...] So, I continued for a few more years, and I soaked up all of the knowledge I could, like a sponge. And when there was nothing left to learn, I reoriented myself and landed my current job.

Thus, in response to value-based conflicts with their employers, the designers learned everything that could be learned before finding new jobs. Ultimately, the designers made major career decisions as a result of a value-based conflict with their employers.

4.6 Harmonising

One coping mechanism identified amongst junior designers after observing the boundary-crossing behaviour of others was to improve collaboration between people through open communication. Four designers reported their dislike of conflicts, aiming to AVOID CONFLICTS. Their way of coping was to seek compromises or discuss the situation with a superior. For instance, in Case 6, the designer first OBSERVED the situation without taking action. After feeling their values were continuously violated, she POINTED OUT THE SITUATION to her superior.

I had a few times, fortunately, [where] I was able to do that. I had conversations about it. I could point out: ‘I thought you went too far here.’

4.7 Confronting passionately

Standing up for their values as designers and confronting their collaborative partners were additional reactions to boundary-crossing behaviour. In hindsight, the two

designers expressed that they could have reacted less impulsively. For example, in Case 16, Participant 14 reacted quite impulsively and emotionally to the conflict:

“I was fairly emotional and then my manager stepped in. He joined a conversation in which he clearly explained what the original agreements were.”

The designer noted that becoming MORE BUSINESS-MINDED could have helped him cope with critical moments like this.

4.8 Convincing explanations

Three designers tried to persuade the stakeholders that their designs were good. The designers initially coped with this task by explaining their ideas and putting forth arguments. For two cases, Case 2 and Case 12, this strategy proved unsuccessful, and conflict emerged. Participant 2 FELT MISUNDERSTOOD, and reported that this was FRUSTRATING:

I could have defended the idea. But if you do not defend yourself at such a moment, then [the value of the idea] is gone for the client. [...] If you would better understand what the consumer means. [...] That is something you will have to explain.

From the conflict, the designer learned HOW TO CONVINCING and noted that a designer should be able to not only defend his or her idea, but also try to understand the perspective of others.

4.9 Switching perspectives

After ineffectively trying to convince other parties of the merits of their design, Participants 1 (Case 1) and 6 (Case 7) changed their coping methods. Participant 1, for example, went to work alone on the assignment without involving the community. After a while, he enthusiastically presented his plan out to the community. The community

DISTRUSTED the idea. He improved the idea and SENT his idea again, but this did not help.

We learned that we have to involve stakeholders from the beginning.

The designers applied this strategy from that point forward in his projects. He referred to this as PROFESSIONAL INVOLVEMENT of the designer.

4.10 Developing self-understanding

Three designers experienced creative frustrations which made them insecure about their capabilities. Assigned tasks were more difficult and complicated than before in university. Their insecurity resulted from high expectations they held for themselves or the fast pace of working of senior colleagues. An initial coping strategy was to WORK OVERTIME to meet certain expectations. In Case 19, Participant 16 was INSECURE but GREW INTO tasks he was passionate about. His SENIOR COLLEAGUES operated at a much HIGHER PACE than Participant 16 was used while in UNIVERSITY:

When I started, I became very insecure [...] My advice is to think carefully about what you are good at. Somebody had to tell me that it should say 'engineer' on my business card and not 'designer.'

Going through these creative frustrations increased the designers' awareness of their capabilities. After a while, they were aware of what they are capable of, and this increased their self-confidence.

4.11 Improving processes

Two designers adjusted their design process. Initially, they spent time searching or waiting for the right information for the design project they worked on. The designers identified ways to adapt their modes of working for the future. For example, Participant

19 noted he could CONVINCe BETTER, REGULATE THE FRONT END of the design project, and engage in DIRECT CONTACT WITH DECISION-MAKERS.

In the future, it would be better if I could have more of a grip on the situation at an earlier stage [of the project] instead of during the process.

The designers said these strategies could help them deliver an end product of higher quality without spending too much time searching or waiting for the right information.

5 Discussion: Understanding coping in design practice

Data collected for this study provided insight into what coping actions are taken and what ways of coping are applied in response to value-based conflicts. These results help shed light on two important aspects of coping with value-based conflicts: the process of coping and the development of coping mechanisms over time.

5.1 The process of coping

By comparing the diagrams of each conflict case (e.g. Figure 1), we were able to identify a general process of coping with value-based conflicts (Figure 2). Although the core of coping is action, coping is essentially an adaptive process with additional elements such as emotions, reflection, and learning cycles that unfold over time (Skinner and Zimmer-Gembeck, 2016). Figure 2 depicts the process of coping with an external value-based conflict in which each party holds a different value identifies four different ways of coping [1].

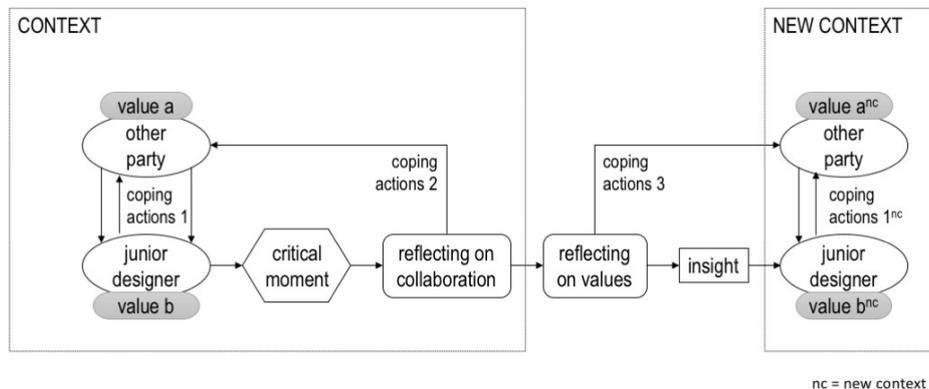


Figure 2. Process of coping with an external value-based conflict

Coping actions type 1 occur before the critical moment to cope with collaboration in a context. They are often reactions to other parties' actions, which is a typical process found in relationships (Dick and Dalmau, 2000). We found passive (e.g. OBSERVING), defensive (e.g. DEFENDING), and neutral actions (e.g. INVESTIGATING). These initial actions to handle collaboration did not appear to prevent critical moments from happening. At some point, the junior designer can no longer manage the situation. Each conflict case builds to a critical moment in time in which a value difference becomes intolerable. Part of the critical moment may include emotional coping or a quick appraisal of the situation (Skinner and Zimmer-Gembeck, 2016). After the critical moment, the designer reflects on the collaboration. Type 2 coping actions are taken after the critical moment to cope with the value-based conflict occurs in the given context. The participants (implicitly) reflected on collaboration during the value-based conflict through actions like OBSERVING and INVESTIGATING. After reflecting, the designers initiated mitigating actions to cope with the conflict and achieve the original goals and

values related to the conflict itself. Type 2 coping actions show similarities with *single loop learning*. Single loop learning aims to achieve existing leading values with new actions (Argyris and Schön, 1978).

Sometimes designers realised they could not live up to their values within a conflict context. The data revealed several examples of the different types of values that the participants were concerned about during reported value-based conflicts. We identified values related to economic worth (e.g. COSTS), personal worth (e.g. SOCIAL RECOGNITION), design priorities (e.g. QUALITY), personal priorities (e.g. INCOME), design ethics (e.g. MEANINGFUL), work ethics (e.g. SOCIAL JUSTICE), intrinsic motivational drivers (e.g. CREATIVITY), and extrinsic motivational drivers (e.g. SECURITY). This confirms the assumption implicit in our broad definition of value adopted at the beginning of this study, namely, that junior designers are concerned with a wide range of values that may be implicated in value-based conflicts.

The designers reflected on their values following a *double loop learning* process of adapting and modifying prioritised values (Argyris and Schön, 1978). Coping actions type 3 and 1^{nc} reflect the pursuit of new values or the reprioritisation of values in new contexts (nc). Coping actions type 3 include pro-active steps to cope with value differences more effectively, such as INVOLVE STAKEHOLDERS. Additionally, some designers identified insights lessons learned, which may contribute to improved coping strategies in the future. We anticipate that the emerged insights from the designers are related to different values, such as economic worth (e.g. MORE BUSINESS-MINDED) and personal worth (e.g. SELF-CONFIDENCE). For example, Participant 14 expressed wanting to become MORE BUSINESS-MINDED, adopting the strategy of pursuing commercial values instead of collaborative values. Coping actions type 1^{nc} refer to a new way of handling collaborative practice based on emergent insights. In case 1 (Figure 1) the

emergent insight PROFESSIONAL INVOLVEMENT became a new coping strategy (i.e. coping actions type 1^{nc}) to handle value differences more effectively by involving stakeholders earlier in the design process (i.e. EARLIER INVOLVEMENT).

During the coping process, designers may benefit from support and intervention for more productive coping (Frydenberg, 2017). Seeking or receiving support was a popular (re)action. The participants received support from peers, mentors, departments, or managers. In four cases participants wished they had received support and expressed they would not have coped well without the support.

Clarifying the coping process also allows researchers to localise value-based conflicts in the process of collaborative practice. All value-based conflicts begin with a critical moment in which the value difference becomes intolerable. The results suggest that additional elements of a value-based conflict may include reflecting on collaboration, coping type 2, reflecting on values, coping type 3, and developing insights. After the conflict subsides, collaboration continues within the current context or a new one.

5.2 The development of coping over time

The 11 identified ways of coping were placed on a timeline (Figure 3). The three ways of coping that appeared exclusively during in the early stages of a designer's career (i.e. as interns to designers 2.5 years after graduating) were SWITCHING PERSPECTIVES, HARMONISING and DEVELOPING SELF-UNDERSTANDING. Additionally, we identified five ways of coping that occurred after a designer graduated: PURSUING PERFECTION, CONVINCING EXPLANATIONS, CONFRONTING PASSIONATELY, IMPROVING PROCESSES and FINDING ACCEPTANCE. Finally, PERSEVERING BEFORE CHANGING served as a way of coping for more experienced junior designers (i.e. those five to seven and a half years after university). This way of coping seems to mark the transition from being a novice

to a more experienced professional. Importantly, two ways of coping did not appear to be linked to a temporal point in one's career: BUILDING CONFIDENCE and MAKING VALUE-BASED CHOICES.

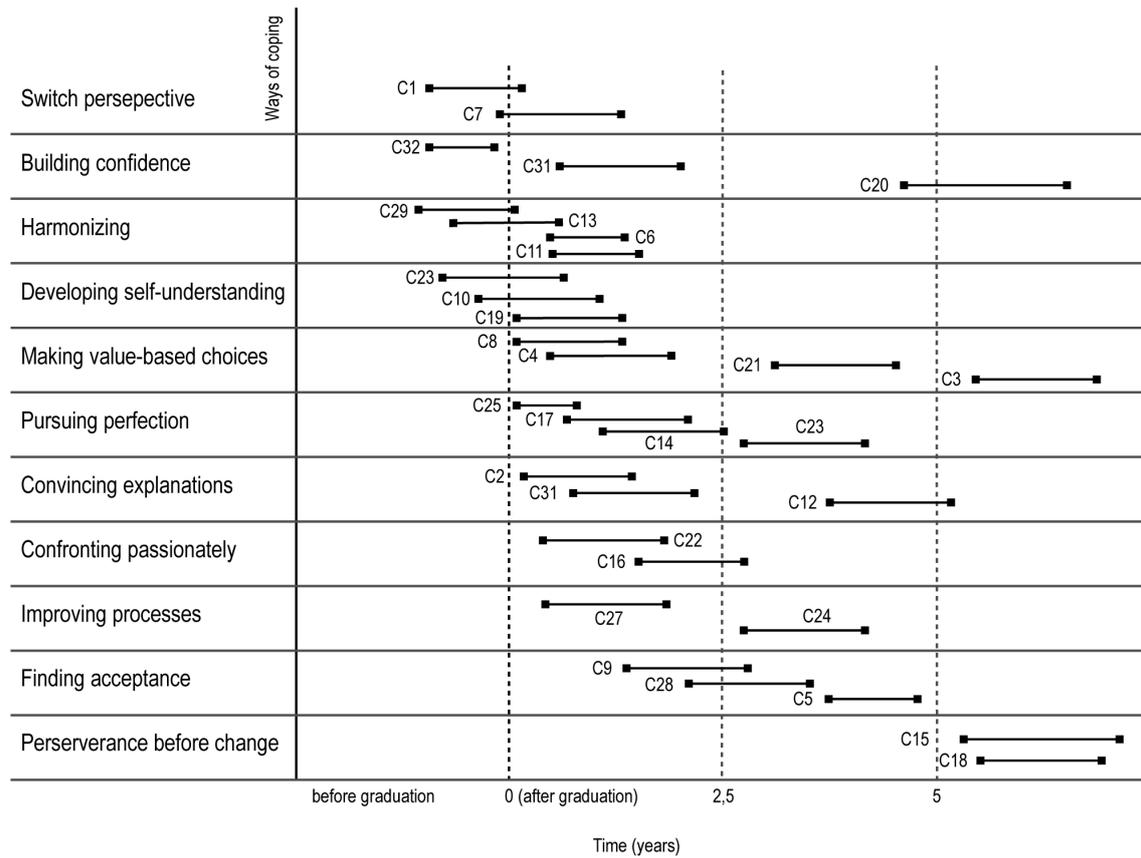


Figure 3. Conflict cases arranged per way of coping over the course of the early career of junior designers

We observed participants transitioning from one way of coping to another. For example, at first, a junior designer employed PURSUING PERFECTION and later in his career, the same designer resorted to PERSEVERING BEFORE CHANGING as a coping strategy. Interns and junior designers have to adjust to the faster work pace of their more experienced colleagues. Junior designers, in the early stages of their career, need to gain experience,

stand up for themselves, and develop self-confidence. Such transitions may lead to learning and professional development. More experienced junior designers and senior designers, know their capabilities, and they are able to re-evaluate their career path.

Another example of a transition was from a junior designer first employed DEVELOPING SELF-UNDERSTANDING and later resorted to BUILDING CONFIDENCE. This junior designer experienced stability in his career path and no major changes forced him to adjust his career path. Likewise, we noticed more transitions in coping strategies, including designers shifting from SWITCHING PERSPECTIVES to CONVINCING PRESENTATIONS, and from DEVELOPING SELF-UNDERSTANDING to IMPROVING PROCESSES.

These results suggest that designers need to first to learn how to adopt alternative perspectives and be empathic before they can learn how to successfully convince collaborators. Ultimately, our results identified ways of coping used at different stages of professional development of junior designers as well as within-career changes in the coping strategies they relied on.

6 Conclusion

Value-based conflicts are an inherent part of collaborative design practices and result from different types of values held by collaborators. Our findings suggest that junior designers experience different types of value differences, such as economic worth (e.g. income) versus design ethics (e.g. creating meaningful designs) and work ethics (e.g. structure) versus intrinsic motivational drivers (e.g. freedom).

Designers apply coping strategies that differ from those used by public servants (de Graaf, Huberts, and Smulders, 2016) while applying several ways of coping also used by workers in industrial firms (e.g. PERSEVERING BEFORE CHANGE) and nurses (e.g. SWITCHING PERSPECTIVES) (Argyris, 1957; Clark, 1997). Importantly, we did observe methods of coping that may be run-of-the-mill for designers, namely, the strategies of

PURSUIING PERFECTION, engaging in PASSIONATE CONFRONTATION, and IMPROVING PROCESSES. Notably, these strategies reflect the pursuit of individual and design values, which are an important motivator for designers specifically (Baha et al, 2018; Cross and Clayburn Cross, 1996). Furthermore, a designer's type of job appears to be an influencing factor. For example, freelancers adopted MAKING VALUE-BASED CHOICES while those employed at a design agency or department relied on PURSUING PERFECTION.

Our research findings reveal both productive and unproductive ways of coping. Frydenberg (2017) states that the outcomes of the coping process and self-evaluation processes are essential indicators of copings' effectiveness. We believe that the type 1 coping actions we identified can likely be categorized as unproductive coping strategies, while the other types of coping mechanisms are more likely to yield productive outcomes. Additionally, we found that some ways of coping are typically associated with different stages of a career, with our results identifying early and more experienced ways of coping. Further research should investigate how designers may transform unproductive methods of coping to potentially more effective modes.

To conclude, this article identifies numerous ways of coping with value-based conflicts and puts for an understanding of the coping process. Our findings will help junior designers develop more personal and intentional (rather than reactive) coping strategies. Conflicts are beneficial for professional development when designers can internalise productive strategies. Notably, coping strategies not only address the value-based conflict at hand, but can also lead to reflection about the collaborative process itself, thereby preparing designers for coping with conflicts in new contexts.

Notes

- [1] The coping process with an internal value difference is similar to the process of an external value difference, except it involves a single junior designer who holds two conflicting values.

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Appendix A: Interview data collection

Table A.1. Participants overview and conflict case numbers.

| Participant | Gender | Work (years) | Education | Design field | Occupation | Conflict cases as junior |
|--------------------|---------------|---------------------|--|-----------------------|-------------------------------|---------------------------------|
| 1 | Male | 10 | MSc Industrial Design Engineering (IDE) at TU Delft MSc Architecture | City planning | CEO | C1 |
| 2 | Male | 18 | MSc IDE at TU Delft | Product design | Teacher IDE (former designer) | C2 |
| 3 | Female | 23 | BSc Mechanical Engineering and BSc IDE at THUAS, the Hague University | Product innovation | Entrepreneur | C3 |
| 4 | Male | 13 | MSc IDE at TU Delft | Product design | Head product development | C4 |
| 5 | Female | 15 | BSc IDE at THUAS | Product design | Team leader design | C5, C6 |
| 6 | Female | 11 | MSc IDE at TU Delft | Lighting design | Entrepreneur | C7 |
| 7 | Female | 18 | MSc IDE at TU Delft | Landscape design | Independent designer | C8, C9 |
| 8 | Male | 15 | MSc IDE at TU Delft | Product design | Product development manager | No case |
| 9 | Female | 8 | MSc IDE at TU Delft | B2B office systems | Usability designer | No case |
| 10 | Male | 9 | MSc IDE at TU Delft | Consumer products | People researcher | C10 |
| 11 | Male | 12 | MSc IDE at TU Delft | Consumer products | Strategy design director | C11 |
| 12 | Female | 6 | Bachelor of design at Design Academy Eindhoven | Clothing and websites | Graphic designer | C12, C13 |

| | | | | | | |
|-----------|--------|----|--|-----------------------------------|--------------------------------------|---------------|
| 13 | Male | 22 | MSc & PhD IDE at TU Delft | B2B office systems | Marketing manager (former designer) | C14 |
| 14 | Female | 8 | MSc IDE at TU Delft | Digital products (former energy) | UX designer (former project manager) | C15, C16 |
| 15 | Male | 16 | Bachelor of design at Design Academy Eindhoven | B2B software supplier | Team leader UX design | C17, C18 |
| 16 | Male | 6 | MSc IDE at TU Delft | Consumer products | Design engineer | C19, C20 |
| 17 | Male | 15 | BA graphic design at Art Academy Rotterdam | Interaction and experience design | Partner & creative director | C21, C22 |
| 18 | Male | 7 | BSc IDE at THUAS | Health care products | Design engineer | C23 |
| 19 | Female | 3 | MSc IDE at TU Twente | Product & brand design | Graphic & product designer | C24, C25 |
| 20 | Female | 2 | BSc IDE at THUAS | Packaging design | Project leader | C26, C27, C28 |
| 21 | Male | <1 | BSc IDE at THUAS | Consumer products | Product Engineer | C29, C30, C31 |
| 22 | Male | <1 | BSc IDE at Virginia Polytechnic Institute (USA) MSc IDE at TU Delft | Consultancy | Strategic designer | C32 |

Table A.2. Main interview guide with topics and subtopics.

| Topic | Subtopic | Additional stimuli with junior designers |
|--------------------------------------|---|--|
| Personal values | Important in innovation projects Values of participants Expression of values in projects Meaningful innovation | Card set 23plus one by BR-ND |
| Value differences | In collaboration (company, brand, team, client, user, etc.) Project/context description Conflict situation -> value difference Cause -> influence of role Action/solution -> confrontation/compromise Frequency -> regularly/often/few times | Sensitizing email and with junior designers exercises (following Sanders and Stappers, 2015). Diagrams of cases from previous interviews were used as stimuli for interviewee reflection and discussion (following Crilly et al, 2006). |
| Value differences as junior designer | Experience of value difference as junior Values as junior designer Difference in coping with conflicts as junior Tips for junior designers | |
| Background | Company, field, role, and education | |

Appendix B: Coding and modelling coping in context

Table B.1. Description of axial codes.

| Axial codes | Manual codes | Description |
|----------------------------|---|---|
| Negative emotion/ conflict | Distrust, resistance, not included, conflict, etc. (Total: 177) | Applied to comments describing negative emotions or the conflict in the case. |
| Actor | Junior designer, stakeholders, consumers, client, etc. (Total: 106) | Identified actors or parties involved in the case. The central actor was the junior designer. |
| Action | Sending, involve stakeholders, design action, reflection, etc. (Total: 49) | Describes actions taken by the actors in the case. An action includes a verb and sometimes a narration that sprout from internal motives. |
| Positive emotion/ solution | Fantastic solution, enthusiasm, empathy, funny, etc. (Total: 93) | In most cases designers described a positive emotion or solution to the conflict. |
| View/ perspective | Show perspective, association, perception of moment, important, etc. (Total: 26) | Linked to comments describing perspectives, change of perspectives or seeking understanding of someone else's perspective. |
| Commercial | Commerce, sharp price, budget, quote, etc. (Total: 33) | Used to identify statements related to commercial, business, or economic values in some of the cases. |
| Design/ assignment | Proposal, design, idea, final design, etc. (Total: 28) | Related to objects or elements of the project or the assignment |
| Values | Company culture, immoral, prestige, ambition, etc. (Total: 15) | Used to identify non-commercial values related to ethics, culture, professional, or personal descriptions. |
| Time indication | Consequence, not back then, time invested, year delay, etc. (Total: 22) | Applied to comments related to time. |
| Role | Co-owner, subcontractor, intern, different role, etc. (Total: 8) | Describes the role of the junior designer in the case. |
| Professionalism | Professional involvement, learn to convince, no change during, entrepreneurship, etc. (Total: 42) | Identifies an emerged insight that describes learning moment to become a skilled professional. |
| Relation | Intensive work relation, personal relation, connected together, etc. (Total: 6) | Appearing in later cases (> C21) a description of the relationship between different actors |
| Process | Fuzzy, high pace, messy, chaos, etc. (Total: 11) | Related to reports on an unstructured process. |

Table B.2. Overview of actions per case.

| Case | Value differences | Coping actions towards value differences (before critical moment) | | | Coping actions to handle value-based conflicts (after critical moment) | | | Insights to handle new context | |
|-----------------------------|---|--|---------------------|--------------------|---|-------------------------------------|-----------------------|---|-----------------------------|
| | | <i>Designer</i> | <i>Interactions</i> | <i>Other party</i> | <i>Other party in same context</i> | <i>Designer in same context</i> | <i>New contexts</i> | <i>Reflections on actions</i> | <i>Emerged insights</i> |
| C1: Design etiquette | Security – creativity | Off the radar, Sending | | Resist | | | | Stakeholder involvement Show perspective | Professional involvement |
| C2: Misunderstood | Power & tradition – creativity | Explain, Research | | Reject | | | | | Learn to convince |
| C3: Gadget | Income – meaningful design | Service | | | | | Choose other projects | Job refusal (not ideal) Don't follow through (not ideal) | |
| C4: Freelance | Income – quality | | | | | End collaboration | | | Entrepreneurial skills |
| C5: Quality versus costs | Costs – quality | | | Reduce costs | | Inquiry | | | Accepting situation |
| C6: Disrespectful behaviour | Dominance – helpfulness, social justice & honesty | Observe | | | | Open up conversation | | | Resolved |
| C7: Politics | Authority – meaningful | | Collaboration | Support | | | | | Change perception |
| C8: Money versus morality | Income – meaningful design | | Hired | | | | Choose other projects | Job refusal | |
| C9: For a cause | Income – meaningful design | | Collaboration | | | Inquiry | Choose other projects | | |

| Case | Value differences | Coping actions towards value differences (before critical moment) | | | Coping actions to handle value-based conflicts (after critical moment) | | | Insights to handle new context | |
|-----------------------------------|-------------------------------|--|---------------|-------------------------------|---|----------------------------|------------------|--------------------------------|---|
| C10: Unclear assignment | Achievement – self-direction | | | | | Work overtime | Improvise | | Understand capabilities |
| C11: Fundamental misunderstanding | Dominance – understanding | Avoid confrontation | | | | | | | Harmony in collaboration |
| C12: Work dismissed | Authority – meaningful | Research Last minute changes | Collaboration | Dismiss Adds shallow idea | No contract renewal Freelance job offer | Refuse freelance job offer | Start-up company | | |
| C13: Gut based decision making | Personal gain – collaboration | Observe | | Positive feedback Decision | | | | | |
| C14: Pick your battles | Time – perfectionism | Integration, Presentation | | Support | | Work overtime | Go with the flow | | |
| C15: Not doing what you like | Ambition – enjoyment | Be involved | Collaboration | Creative work | | | Change career | | |
| C16: Shift in attitude | Personal gain – collaboration | | Collaboration | Send bill | Pointing out | Seek support | | | More business-minded |
| C17: Not just a client | Income – meaningful design | Work overtime | | Does not reprimand | | | Compromise | | |
| C18: Seen as liability | Security – ambition | | | Advises Make concessions | | Maximise experience | Change job | | Involve others Exchange tasks |
| C19: Insecure about capabilities | Achievement – self-direction | | Hired | | | | | | Grow into Self-confidence Stay yourself |

| Case | Value differences | Coping actions towards value differences (before critical moment) | | | Coping actions to handle value-based conflicts (after critical moment) | | | Insights to handle new context | |
|---------------------------------|--|--|---------------------------|--------------------------------|---|-------------------|--|--|---------------|
| C20: Chaotic project management | Structure – freedom | Seek support | | Briefing | | Explain | Align team | | |
| C21: Change of strategy | Income – quality | | Hired | Change strategy | | | Choose other projects Initiate other projects | | |
| C22: Valued as a designer | Status – respect & friendship | Adds value | Collaboration | Maintains relation Show-off | | End collaboration | | Time out | |
| C23: Working overtime | Costs – quality | Points out problem | | Give in | | Work overtime | | Involve engineer Formulate concrete assignment | |
| C24: Unaligned design vision | Influence – conformity | | | Briefing | | Search process | | Regulate front end Convince Direct contact decision makers | |
| C25: Negative feedback | Stimulation – goodwill | | | | | Seek support | | Stand-up for yourself | |
| C26: Working overtime II | Time – perfectionism | | | Gave many responsibilities | | Work overtime | | | Learned a lot |
| C27: Unable to deliver | Detachment - achievement & self-discipline | | Urgent meetings Create | Finger pointing | | | | Take early action Be precise Improve | |

| Case | Value differences | Coping actions towards value differences (before critical moment) | | | Coping actions to handle value-based conflicts (after critical moment) | | | Insights to handle new context | |
|--|---|--|----|--------------------------|---|--------------|----|--|---|
| | | | | | | | | | |
| | | | | | | | | process Develop negotiation skills | |
| C28: Miscommuni- cation | Costs – quality | Investigation | | | | | | Compromise Change printer (not ideal) | |
| C29: Not taken seriously | Authority – social recognition | Observe | | | | Retract | | | |
| C30: Third person | Politeness – self- respect | Made notes | | Assumed | | Retract | | Stand-up for yourself | |
| C31: Insecure about capabilities II | a. Security – capability b. Achievement – social recognition | Avoid confrontation Unwind | | Give managing role | | Seek support | | | People will tell you if you are wrong |
| C32: Only see the problem | Problem – solution- oriented | Observe Seek support | | | | | | | Self-confidence |
| Total | | 24 | 11 | 24 | 3 | 18 | 13 | 20 | 17 |