



Designing Co-design: Addressing Five Critical Areas to Increase the Experience of Participants and Facilitator in a Co-design Session

Paola Trapani^(✉)

College of Design and Innovation, Tongji University,
281 Fuxin Road, Shanghai, China
paola@tongji.edu.cn

Abstract. *Background:* In recent years, the practice of co-design has gained proper attention for it can provide innovative approaches to complex societal problems through the participation of all stakeholders. Usually, designers focus on arranging methods and tools to support participants' ideation and expression trying to overcome the barriers resulting from differences in background, skills, attitudes, and expertise (Sanders and Stappers 2012). However, acting as facilitators or team leaders without specific training on individual and group dynamics can lead to overlooking tacit or latent aspects that can eventually drag the team into tiresome quicksand during the sessions. *Methods:* interpretive concepts and theories describing individual transformation processes in the context of small groups are taken from relevant literature in the field of management development and applied psychology. *Results:* a light conceptual framework spots five critical areas that professional designers need to pay attention to when planning and conducting a co-design activity, if they want to keep the participation and involvement alive: (1) Motivation; (2) Focus; (3) Boundaries; (4) Rumination; (5) Transformation. *Conclusion:* An area for further research and theory ground for group-based co-design practice is outlined.

Keywords: Co-design · Co-creation · Participatory design · Collective creativity · Group dynamics · Group processes · Small groups · Personal transformation · Transdisciplinarity

1 Introduction

1.1 Co-creation and Co-design Today

Areas of application. Today, co-creation is emerging in increasingly broader contexts because it seems an appropriate approach to address open, complex, dynamic, and networked problems thanks to the involvement of all stakeholders in an extended problem context (Dorst 2015). According to Sanders and Stappers (2012), from in-house co-creation within a company or organization, we have moved on to the involvement of external stakeholders, whether they are customers or other companies in the supply chain. Public administration and civil servants, especially in Western

countries affected by spending review, are increasingly inclined to involve citizens and communities in the creation of targeted policies, in an attempt to oppose the progressive reduction of financial resources available for public services (Meroni et al. 2018).

Through co-creation it is possible to produce added value at different levels: financial, experiential, and social (Sanders and Stappers 2012). This practice can, in fact, help companies to increase sales thanks to user feedback on a product, service, or brand; it can involve people in the expression of practices that are still latent and unexpressed, it seems a suitable methodology in all cases where the product/service innovation happens at the level of meanings (Norman and Verganti 2012) so that it is wise to envisage new wanted meanings that do correspond to an emerging user practices, although yet in the bud; can finally give people the tools and methods to express new lifestyles more sustainable and in line with a new environmental and social sensitivity.

Stages of the Design Development Suitable for Collaborative Development.

According to Sanders and Stappers (2012), co-design can be applied to any phase of a product or service development: from the initial stages of context analysis to the definition of an opportunity, from concept development to prototyping, to conclude with marketing, sales, distribution, and after-sales. If more revenue is the objective, then co-design should be introduced in the final stages of the development process; if the design team is looking for more experiential value, it is appropriate from the intermediate steps; it must be used from the beginning if a social value is pursued. Other authors, including Dorst (2015) and Meroni et al. (2018), consider the collaborative approach as the only possible way to attack contemporary problematic contexts, which have an original status and are resistant to any traditional problem-solving approach. Discussing of a collaborative approach extended to each phase of the design process, Lou and Ma (2018), presenting NICE2035, propose the Living Lab model as an example of complex socio-technical systems in which the creation and experimentation of innovation goes beyond the traditional epicenter of its production, the university college, to involve the community of the surrounding neighborhood.

How Co-design Affects the Role of the Professional Designer. As expected, the participatory approach to design has generated a heated debate in the scientific community about the radical reconfiguration of the role of the professional designer. Experts from different sides questioned his part and legitimacy in a context where everyone has some expertise to bring to the table.

According to Dorst (2015), among the pioneers of a collaborative approach to complex urban issues would be the Young Design Foundation in Europe and the Designing Out Crime Center in Australia. In both institutions, the methodology differs from the traditional problem-solving approach in proposing a much more ambitious and complex model of “frame creation” in which designers and all stakeholders are more in search of questions, continually refined and redefined, than pretentiously resolute answers. Looking for a solution to the issues as the problem-owner formulates them usually leads to a dead end road already traveled many times without success. The question is vicious at the beginning and carries within itself only the symptom of the problem, never the root, which must come to light through a sophisticated and complex method of re-framing the question. This alternative way is

usually all uphill because it means that each actor sitting at the table renounces their established position.

Manzini (2015) considers the designer as a “mediator” and “facilitator” who uses his creativity and culture to guide the social conversation between very heterogeneous actors. Even for Sanders and Stappers (2012), the role of professional designers has extended considerably beyond the limits of current specializations. Today it is no longer enough to be an expert in interior design, communication, product, service, or system of products/services, fashion, jewelry, etc. Designers need to know how to develop methods and tools that allow people to express their creativity at all levels, as well as being able to organize and conduct fruitful and transformative conversations between experts and non-experts.

However, the emphasis on change should not be alarming because some fixed points remain: society will always need an excellent product or interior designers. Too much stress on the shift from expert designer to facilitator only polarizes the discussion: the enthusiasts of the new course end up arousing the defense mechanisms of the knowledge gatekeepers, acquired at the cost of years of study and professional practice. As always, the formation of opposing barriers does not benefit the necessary co-evolution of the figure of the designer and society.

The paper contributes to the area that Meroni et al. (2018) identify as “designing co-design”: in particular, we want to deepen the role of the professional designers in the co-design setting by focusing on some basic skills for which there is no training in the curriculum. Hopefully, a discussion can be opened between those in charge so that these gaps are revealed and filled.

If proficiency with relevant design methods and tools generally do suffice in the traditional professional/client setting, to co-design a product/service in real time, along with the users or the client, not to mention a scattered cloud of multiple stakeholders, can be a dreadful experience for designers. In fact, in these cases, a new layer of sensitivity is required to detect and interpret subtle individual behaviors and group’s dynamics. Co-designing in real time is a journey for which no map can be provided because it must be constructed on the go as the result of a purposeful interaction and conversation among the parties. Participants find themselves in a typical situation that, in each moment, can present the project team with unexpected circumstances - both positive and negative- affecting the emotional state at any level: visceral, behavioral and reflective (Norman 2007). Past frustrating experiences and bitter memories can block the endeavor at any time Sanders and Stappers (2012).

On the other hand, the occurring challenges are unpredictable and can cement or disintegrate not only the bonds within the group but also self-esteem, identity, awareness, etc. According to Tonkinwise (2013), in this case, designers must have a very refined and sensitive knowledge of human beings, they must understand psychology, even psychoanalysis, if they need to take into account also the signs that are still latent as unconscious, including body language, and attitudes. Unfortunately, designers do not receive any specific training to manage these aspects with the result that carefully planned and professionally conducted activities often fail because of the “human factor.” Let’s, therefore, proceed to a literature review on individual and collective creativity, to understand to what extent the skills and tools typical of designers can be useful, and to highlight any shortcomings that should be addressed through targeted curricular pathways.

1.2 Individual Creativity

Diffused Creativity in Daily Life. Human creativity is a trans-disciplinary subject on which there is no agreement between psychologists, designers, neuroscientists, psychoanalysts, anthropologists, sociologists, etc. In common sense, a solution to a problem is creative when it is both new and appropriate. Sanders and Stappers (2012) distinguish different levels of individual creativity. At the simplest level, creativity means *doing*: any practical activity is at this level, e.g., buying a ready-to-wear garment. Above this, is the level of *adapting*: one buys the clothing and makes changes to better tailor it to individual sizes or tastes. Then comes the level of *making*: purchasing the fabric and a pattern and engaging in the execution of the garment. Finally, at the top level of *creating*: one buys the material, draws and makes the garment from scratch. From here the authors derive that everyone is creative, at least at the first levels of the scale. Everyone has dreams and aspirations that can trigger acts of creativity in everyday life in the form of doing, adapting, making, or creating. It is not at all easy for designers to make such needs and desires explicit because often people would not be able to express them verbally during interviews or focus groups.

The wealth of knowledge that each of us has is similar to an iceberg stratified on four levels, of which the two lower ones plunge in the unconscious. The emerged tip represents the *explicit* knowledge of which we are aware and which we can communicate to others. Below it, we find the layer of *observable* knowledge that can be grasped by others but not form us. From this level onward, we are below the level of consciousness. The third layer is that of *tacit* knowledge, the set of all the concepts that make sense to us but which we are not able to communicate in words to others. Finally, at the base of the pyramid, there is the most substantial layer of *latent* knowledge consisting of all those concepts that we have not yet experienced, but that we can imagine, even if confusedly, based on past experiences. Latent knowledge could become explicit or observable in the future. The more designers are interested in discovering future scenarios, the more they have to do “data mining” from the pre-verbal submerged layers, where desires, needs, and values float and are difficult to make explicit and shared. Presenting incomplete and ambiguous tools during a co-design workshop is the most effective way for designers to bring such content to consciousness. Faced with such stimuli, in fact, everyone will tend to project their needs into it because of the human being’s irrepressible tendency to make sense meaning. In other words, everyone will manage to fill in the gaps (i.e., what is unexpressed) with their content.

Emotions then influence creativity. Positive emotions favor the ramification of creative associations and cognitive flexibility. However, it is unpleasant that during co-creation and co-design sessions, especially if extended in time, negative emotions are not generated in the group originating from frustration, disillusionment, conflict, disengagement, etc. For this reason, the ability of designers to recognize, intercept, and channel them most properly can be a decisive factor in the success of the activity.

Discovering how past emotions influence a future expectation is another puzzle for designers. Sanders and Stappers (2012) recommend that participants prepare themselves on the subject for at least a couple of weeks before the workshop using the “path

of expression” framework. Through sensitizing activities, participants may be asked to write down observations and reflections on a specific experience on personal journals to facilitate the triggering of creative associations during the workshop. They are also invited to reflect and record relevant past experiences for sharing during the workshop. Sharing helps to access fundamental values (silent or latent) and unexpressed needs and to project these into future aspirations.

Creativity can also be stimulated by the place where the co-design activities take place. For example, the presence of modular furniture that can be assembled at will, walls on which it is possible to post materials for collective discussion, corners suitable for moods and different attitudes (reflection, discussion, relaxation, mess-making, etc.), spaces for individual and/or group work, reconfigurable external permeability, etc. are all elements that designers should carefully prepare.

1.3 Collective Creativity

Fostering Groups’ Creativity. When involving multiple people in co-creative working groups, the considerations about individual creativity are always valid. However, the variety of profiles and mutual interaction make the context much more complicated. For example, it may be appropriate to balance people who have mainly the typical left brain hemisphere skills such as logic, numeracy, literacy with others who perform best in the capabilities of the right one: rhythm, Gestalt, visual and three-dimensional composition, etc. Some think, others see, others act first of all (Mintzberg and Westley 2019).

Dorst (2015) sees design as a form of reasoning. Therefore, referring to the three models of thinking introduced by Charles Pierce, deduction, induction and abduction, the author states that designers use all three. However, designers are the only ones to present a peculiar variant of adduction. The traditional problem-solving activity in design is based on the classic model of adduction: to achieve a wanted result, we don’t question the procedures or the patterns of behavior; we change the elements that can be combined to get the results. Often we create a solution within a fixed mode of practices (the “how”). When we don’t question the “how,” we exclude the creation of new scenarios. Sooner or later, routine reasoning will not lead to the desired value anymore and we must think about the problem again. At this point, designers can turn to a more powerful adduction version: we only know something about the outcome that we want to achieve. So the challenge is to figure out “what” new elements to create, while there is no known “how,” no pattern of behavior that can lead to the desired outcome. As “what” and “how” are wholly interdependent, they should be developed in parallel. This double creative step requires the designers to devise proposals for both the unknowns, and test them in conjunction.

In conclusion, the co-design group should be formed by people with different skills and attitudes in terms of reasoning, making decisions, thinking styles, etc. Diversity must be managed, because it can lead to contrast and unproductive blockage. Here lies the ability of designers to act as mediators and facilitators of a social conversation with very different profiles, which Manzini (2015) addresses.

2 Diagnosing the Problem

2.1 Designer's Traditional Skills

After briefly mentioning some salient aspects of human creativity, both individual and collective, we review the skills that designers traditionally acquire to assess whether they are necessary and sufficient to address co-design activities with reasonable expectations of success. According to Mulgan (2011), designers are typically proficient in the use of three kinds of methods and tools.

Ethnographic Tools to Explore a New Context. To design in a collaborative setting, it is mandatory to start inquiring the field to get an understanding of the big picture, including the gaps: there are unknown unknowns that will not be grasped in any way. Therefore, it is not only acceptable but also mandatory to adopt an iterative approach that can refine at each loop ambitions and realistic opportunism.

Mapping and System Thinking Tools are useful to bring to light the right connections and relationships between elements of complex systems. The strategic mind required to envision an innovative frame (Dorst 2015) must be able to generate and visualize its element (e.g., primary and secondary stakeholders, flows of goods and materials, facilities, flows of information and financial resources) based on the data collected in the previous stage. Here the attention focuses on connections (e.g., cause-effect relationships, or connections based on meaning) between elements. The three forms of logical thinking and intuition should alternate through deliberate phases of intuitive expansion and analytical contraction.

Prototyping Tools can make ideas tangible and measurable. In this regard, there is a considerable difference between services, which are complex systems made of composite components scattered through space and time, and products. One thing is prototyping a tangible object like a chair, less obvious is how to make concrete the experience of a new service. Rough prototypes should be iterated to evaluate in real-time the progress made through the map and to uncover issues related to its usability and responsiveness to the scope.

Co-design Requires the Acquisition of New Skills. To a professional designer specialized in co-design, further competencies to size, evaluate, and manage personality traits, attitudes, interaction styles, motivations, group dynamics, etc. are as critical as the aforementioned hard skills. Although these competencies are in high demand, given the escalating market expansion of co-design, still are difficult to find also due to the deficient academic training in this regard. Often the team leader is called to lead the group in the exploration of an unknown territory without having the support of a map already drawn, because this must be built during the trip, procedurally. Any radical innovation of complex systems, in fact, is a long and uncertain journey due to the lack of structural conditions (including legislation, policies, and access to capital) that usually are still locked into old systems.

Consequently, failure is the rule and may arrive after years of roadblocks. Most likely, the whole quest could end up being perceived by the participants as a frustrating activity. As soon as the original optimistic plan fails and the expected “new Eldorado”

will appear not so straightforward, members could suddenly plunge into chaos or the underworld with the consequent release of negative emotions that can jeopardize the goal (Peterson 1999). Designers usually find themselves ill-equipped in dealing with unpredictable psychological, perceptive, and behavioral response to a moving target.

3 Methods

3.1 Literature Review

By searching online for some of the keywords relevant to the paper, such as “group dynamics theory,” Google scholar generates 4,370,000 entries, while the British Library returns a list of 4,645 entries. Looking for “group behavior” we get 4,000,000 results in Google Scholar. Repeating the procedure for all the indicated keywords, the quantity of bibliographic references becomes unmanageable. Texts have been published in sectors as diverse as social psychology, education, management development, health and wellness, occupational psychology, etc. over a while from the early ‘900 to today.

Faced with the impossibility of managing such a multitude of references, we have resorted to designerly adduction (Dorst 2015). We know that we want to create a working framework that allows designers engaged in co-design to manage external change and at the same time to keep an eye on the internal transformation of participants so that the former does not block the latter but instead favors it (desired outcome). To better explain this working framework, we have tried to represent it in Fig. 1. In the continuation of the research, we will remain open to the hypothesis of disposing of the model for a better one. However, in this initial phase, it guides us in the identification of the type of references to be reviewed in search of the conceptual underpinnings useful for the subsequent refining of the framework.

Given this desired result, we proceed to search for concepts in disciplinary areas other than design in which the authors already provide a comprehensive survey of the literature in the field of interest before providing their contribution. In particular, we investigate literature that discusses the connection between the external changes of a context and the possible internal adaptive transformations of individuals in response to those. For example, the essay by Breu and Benwell (1999) reports a good literature review on the experience of managers engaged in cases of change management in particularly critical situations. We then explore a second aspect, namely the influence of group dynamics on the internal transformation of individual group members. To this end, the Borek and Abraham paper (2018) provides a detailed review of group-based behavior-change interventions (GB-BCIs) experiments before proposing their original framework.

After that, we try to synchronize the various aspects in a framework for the use of designers, such as the one in Fig. 1, supported by the underpinnings assumed by the literature review. Finally, we identify some critical areas to which designers should pay attention during the entire performance of the activities, depending on the current design development phase.

Conceptual Underpinnings from Management Development. In the area of management development, Bridges (1980, 1986) studied the adaptive strategies of managers in the face of radical change management in a company operating in turbulent market conditions. In making a distinction between *change* that is always relative to the *external* context, and *transition* that is *intern* to the individual, the author links the two dimensions, for the individual failing to move successfully through the transition, context's change efforts will fail.

Nortier (1995), based on studies carried out on a sample of about 1500 managers engaged in change management processes in different western countries, expands Bridges' theory of individual transition and consolidates it into an articulated model in 5 phases: *balance, separation, crisis, rebirth, new balance*. In short, every time managers are faced with a management change, it is possible to reconstruct a typical cyclical pattern: the initial and final phases see managers operating in a situation of external balance, which allows them to continue to adopt the usual patterns of behavior, ways of thinking, and make decisions. At some point, the change begins to emerge but is underestimated or judged irrelevant, so that managers continue to proceed as usual but with decreasing effectiveness and success. This is the separation phase. Things fall into the crisis phase where it is clear that the previous balance has vanished. All attempts to apply consolidated strategies go awry, and managers begin to experience the loss of meaning in a situation of chaos and disintegration. The old ways of filtering, acquiring, and interpreting reality are no longer, and no new ones have been found. In the best cases, after a period of discouragement, it follows that the change in external circumstances can be an opportunity to rethink and question the operating methods. In this phase, called rebirth, the behavior returns to be exploratory and, even if aware of the possibility of failure, at least the motivation to experiment and test new frameworks of thought and action returns. With the first successes, it begins to appear clear that the worst is behind the back and one is again in control of the situation. Usually, the transition is remembered as a positive period and an opportunity for growth and learning.

Breu and Benwell (1999), studying the adaptive behavior of CEOs and senior managers of East Germany at the time of opening to Western market logic, focus on a variable so far little studied: the impact of the order of magnitude of change during epochal shifts in the State and global economy. In that case, the change has been multi-dimensional, multi-component, and multi-aspectual because it forced managers to move from a socialist management model to a capitalist one within a few months. From the field research conducted on a sample of 73 managers from 61 companies, it emerges that the most significant impact occurred in three areas: the perception of the external environment, the self-perception at the individual level, and the change in their behavior. After analyzing the data collected through interviews and structured questionnaires, the authors develop a model of transformative transition that is divided into five phases: *disintegration, euphoria, crisis, development, redefinition*. They then analyze the transformation of the external environment, self-perception, and behavior during the stages.

Conceptual Underpinnings from Group-Based Behaviour Change Intervention. In the field of psychology applied to health, trying to induce changes in individual

habits and lifestyles within small therapeutic groups has been the subject of many experiments since the beginning of the 20th century. There are many empirical and experimental studies on the management of the most different chronic pathologies caused by harmful lifestyles or addictions, in which researchers have shown the greater effectiveness of interventions on groups of patients compared to one-to-one ones not only for economic reasons but also because they are often more effective. Positive changes can be triggered by the support received from the group and the facilitator, by the assumption of a new social identity within the group, by the adoption of group rules, by the virtuous circle triggered by the mechanism of feedback and further challenge, etc.

Borek and Abraham (2018) investigated the optimal characteristics of the group and the facilitation styles that seem to be most effective in inducing individual change within a therapeutic group. The authors propose a model of the mechanisms of change in groups, articulated in 5 all-comprehensive categories: (1) group development; (2) dynamic group processes and properties; (3) social change processes (or inter-personal processes between group members); (4) personal change processes as individual (or intra-personal) change processes; (5) group design and operating parameters. The 5-step model may seem simplistic, but it shows that personal change must be facilitated differently throughout the life of the group.

The first encounter is crucial because it can trigger a sense of belonging and reduce ambiguity, detachment, and artificiality. The transformation from a simple aggregate of individuals to a cohesive group capable of pursuing a common goal occurs through the development of some group dynamics explicitly desired and sought, including the development of social identification, group cohesion, the establishment of rules, roles and statutes and a peculiar climate of the group. The group, once established, can trigger changes identified through peer-to-peer interaction of members. They can trigger mechanisms of social comparison, both incremental and diminutive, of social learning, social power and influence, and mutual support. The expected results at the individual level are of various types: personal cognitive change (e.g., change of attitude, development of motivation, awareness of making&breaking deals, etc.), skill development, self-disclosure, feedback, and challenge.

Finally, the authors propose five guidelines for those who have to design self-help groups: (1) purpose of the group; (2) group composition and size; (3) leadership processes; (4) facilitator characteristics; and (5) group and interaction management. Establishing group objectives rather than individual ones, as long as they are realistic, facilitates group cohesion and identity. The composition, the size, the even or odd number of members, the prevalence of the male or female gender, as well as the personal characteristics, the cultural background, the gender of the facilitator are discussed with evidence in the literature. The style of communication used in the group is decisive. Sometimes, a pyramid model in which the facilitator always mediates interaction can be more effective; other times a circular model in which the members communicate directly with each other is more suitable. The facilitator must, in any case, be able to intercept and channel potentially dangerous single behaviors: according to Benne and Sheats (1948), patterns can include blocking, aggression, recognition-seeking, special pleading, withdrawing, and dominating.

4 Research Questions

From Naive to Realistic Co-design. Co-design, not differently from overly positive group management practices, is still mainly relying on the belief that the careful, preventive planning of a chain of activities subsequently implemented, given a wanted goal, is all that is required from designers. This empirical vision shows how persistent is the faith in the stability of a thoroughly prepared co-design setting and the predictability of planned activities on future success. The truth is that, when it comes to complex processes, in which heterogeneous actors interact for a long time, the stability and certainty of the result are not granted, and this can trigger internal resistance reactions that will make the situation worse.

For this reason, designers must be careful to catch the first signs of discontent, disappointment, bitterness, before they propagate to the rest of the group by sabotaging the efforts made. If the traditional skills of ethnographic exploration, mapping and prototyping are sufficient to manage the phases of external change, they do not seem useful to intercept and manage the internal transition of the participants. On this front, designers need skills for which they do not receive specific training.

We are interested in the link between external change and personal transformation within a group, and the effects of the group’s dynamics and behavior on personal transformation. We want to find out what can favor or block own transition so to figure

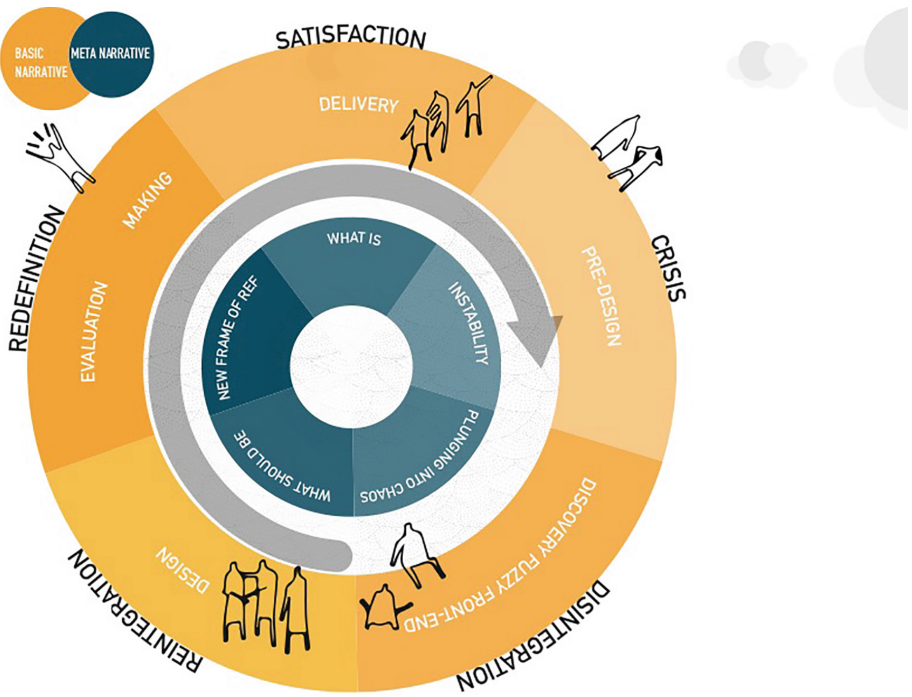


Fig. 1. The working framework of the co-design path development that synchronizes the narrative and meta-narrative levels. (Color figure online)

out how to fix or improve the management of group dynamics and intercept harmful behaviors early on. Updating academic programs to teach new skills is another hoped-for outcome.

Proposing a New Framework as a Working Hypothesis. The model in Fig. 1 introduces a frame, even though speculative, of development of the co-design path that synchronizes the external changes of the context in the various design phases with the probable internal transitions of the participants in response to those. At the level of the external environment, the process is articulated in a succession of phases that we can define as basic narrative represented (in the yellow ring): *pre-design* and *discovery fuzzy front-end, design, evaluation, making, delivery*. To operate at this level, the design group uses ethnographic, mapping, and prototyping tools and methods. In the case of radical innovation, establishing the sequence of the core narratives equals to exploring unknown territory. On this front, there is vast and ever-expanding literature, to which we do not claim to contribute.

Instead, we are interested in focusing on the internal transition of the participants. In response to the changing external conditions that the co-design group will encounter during the course, there will be internal reactions to which designers must be able to pay attention and intervene to avoid the failure of the experiment. By integrating the underpinnings derived from the literature review and Peterson's model "The Metamythological Cycle of the Way" (Peterson 1999), we indicate (blue ring) the dimension related to the internal transition of the participants as meta-narrative or the level of self-perception concerning individual and group behavior. We distinguish 5 phases: [*what is*] participants feel satisfied with the current state of planned activities, they act with confidence because they have negotiated attainable goals, a roadmap to reach them that seem to protect the group from chaos; [*instability*] timid signs that the plans will not lead to the expected result within the established time frame generate at first "surprise" that Peterson (1999) defines as "instinctive emotional response to the occurrence of something we did not desire" and that can turn out scary. Sooner or later, someone in the group, under the effect of negative emotions (e.g. scare, disengagement, boredom, disempowerment, etc.), can start acting passively or undermining the group's cohesion and confidence; [*plunging into chaos*] if negativity is not detected and contained early on, can fall the entire group into chaos where only panic reigns and all plans seem disrupted for good; [*what should be*] if the team leaders are capable of detecting the crisis, they can steer the efforts toward a more realistic goal: a new desirable state can be imagined by integrating the lesson learned; [*new frame of reference*] eventually, a new prototype of a more desirable state of the art rises out of a trade-off between realism and opportunism. However, it is only a matter of time for the cycle to start again, because every situation, however good it may be, can always be improved.

5 Defining the Specific Opportunity

5.1 Five Critical Areas to Improve the Designer's Capabilities

The model in Fig. 1 could easily lead us to think that the two processes, the narrative, and the meta-narrative, are not only distinct and synchronized with each other, but also

take place according to a linear scan of phases linked in a precise order. For instance, the fuzzy front-end discovery phase may seem a chaotic time - during which the group wanders in total darkness and is at the verge of collapse and disintegration- but if the group endures the struggle, the design phase always follows. Now the group, happily reintegrated, has found the energy to explore what does not yet exist but should exist, to improve the real world. Unfortunately, we know that not all trips end in the Eldorado, the happy conclusion is not guaranteed at all, the mortality of the co-design groups is very high and comes before any result is reached. Moreover, no stage can ever be said concluded and passed for good, and it could reoccur and explode in the middle of a subsequent step. Finally, it is never possible to separate the level of activities under development, which cause changes in the external context, from internal changes as an adaptive response to those.

For this reason, instead of insisting too much on the DOs and DONTs of each phase of the meta-narrative level, we think it's more useful that designers always have five critical areas in mind that intertwine, present themselves, and fade intermittently throughout the process.

Motivation. One area concerns motivation, passion, liveliness, attraction, urgency, and appetite for the exploration at hand. How can we sustain the participants' motivation along the journey? It seems unlikely that motivation will be at the highest level at all stages of the quest for each member of the group. However, this is not necessarily a bad thing: a motivation that is always at its peak is not only not credible but is also counterproductive in the long run. Instead, it would be appropriate for designers to be able to detect the "temperature" of the group and manage it with wisdom: as long as there is a flame, there is always combustion in place. To keep the fire of motivation in place, designers will have to find strategies and tactics to lower it when it is too high, foment it when it is pale, make it twinkle at times, etc.

Focus. However, to keep motivation alive it is not enough because it must be addressed. People's desire to participate can be sustained only to a limited extent; therefore, it needs careful direction, or the team will run out of steam. "Focus" means direction, aim, purpose, or concentration (Hillman 2009). The motivation must be targeted and concentrated, or it risks being dispersed. How can we hone methods and tools to retain the group's focus?

Boundaries. A way to retain the focus is to establish proper "boundaries" for the experience. Meroni et al. (2018) suggest performing ceremonies for activity beginning and end, to suggest the "different" nature of the experience compared to the normal flow of daily life. We have seen that designing an appropriate location for the co-design session means establishing a delimited and separate spatial niche. Should other types of boundaries be created, different than space-time ones? An important kind of edge is the one that delimits the content to be dealt with at each stage of design development. Without this outline, there can be no focus. Dorst (2015) brings the intractability of contemporary problems back to the fact that they are often "open" so the boundary of the issue is either unclear or permeable. When you try to encircle the problem to define the included and excluded elements, you are immediately in trouble. However, the effort is necessary because human perception has such limits that it cannot grasp reality

in all its complexity. If this is true about what already exists and observable through the senses, it will be even more true for what does not yet exist but is under development in the collective imagination of the group. Designers must facilitate the adoption by the group of a frame of reference through which to look at the new reality in the process of formation, that is, a sort of “visual cone” through which to observe the problem.

Dorst (2015), as we have seen, considers the designer’s visual cone as a kaleidoscope: not only does it include some elements to look at but also the rules of assembling them in narrative chains of relationships and actions because of the desired end.

Peterson (2015) suggests starting by considering the reality included in the cone as predictable, while always keeping in mind that it is not predictable at all. In general, the group should deal with the minimum number of elements and relationships that will reasonably lead to the desired result. In other words, the group will only deal with an unexpected and adverse event if it constitutes a severe threat to the achievement of the outcome. In that case and just in that case, the reality in the visual cone will no longer be a predictable world. An event is positive and will generate positive emotions if it helps to advance the group towards the goal. Otherwise, it will be negative and will create negative emotions in the group. If the size of the adverse event is such that it does not allow the advancement, it may be wise to change the visual cone. In any case, the fact remains that the existence of a visual cone maintains the focus.

Rumination. Common sense and a touch of everyday life make events sensed and felt. A fully lived experience touches us personally, changing the innermost core of our essence. Ways to knit and knot the actual events that occurred during the session, no matter how disappointing or frustrating, into the fabric of a meaningful experience should be envisaged. “Preserving under salt,” what happened during the day allows going back, ruminating and digesting the experience. The process of digestion of events in co-design is as if it happened in the stomach of a cow, so some “indigestible” elements return to be processed for further refinement of matter (Hillman 2009). How can designers develop tools and techniques to “preserve” experiences for subsequent ruminations?

Designers’ Transformation. The designer is also transformed internally by the co-design process and should receive specific training to deal with this aspect. According to Broadbent (2018), the designers trained in the tradition of the American school of Human Centered Design are experts who externally observe the participants in their context. Designers trained in the North European “participatory” tradition are, on the contrary, participating observers. In the latter case, the clear distinction between context, participants, observation methods and researcher is impossible. Therefore, designers themselves, who are immersed in a prolonged co-evolution with the group, will undergo a specific internal transition to adapt to the evolution of the group. For example, when the activity does not give tangible results, the group proceeds in a slow, repetitive, gripped, dark, thick, and obstinate way. The designer may feel exhausted, stuck, entangled, frustrated. When the group shows signs of recovery, no longer turns in circles and seems to have guessed a way out of the stalemate, the designer can mediate the discussions thanks to his detachment. He can mirror any given situation. His reasoning can have a cold and dry quality because every trace of phlegmatic stickiness typical of the previous phase has been purged. As the group proceeds, some

hypotheses begin to turn yellow and to decay; others instead begin to mature slowly. The designer favors this necessary transition, etc.

Facilitators are responsible for ensuring that the group develops optimally over time. To this end, they should consider ways of resolving conflicts constructively, establishing rules that encourage personal change. It would be beneficial for their training to observe the most experienced facilitators, to undergo observation and receive critical and supportive feedback, to exchange ideas with other group facilitators and to have access to qualified people. Senior supervisors can help develop facilitation skills. The limits imposed by this paper do not allow us to go into detail on this point, which deserves an article on its own.

6 Conclusive Discussion and Future Work

We have highlighted five critical areas that designers must always consider to improve the internal response of participants to co-design activities, to make the subjective experience more adaptive and fluid and facilitate changes in attitudes and behavior. The tools and techniques that are used in co-design today are not suitable to address this dimension. The designer's toolkit is usually useful on the narrative level (Fig. 1) to explore unknown territory, map the relationships between the elements contained in it and prototype proposals for interventions. The toolbox usually has no useful tools to manage the meta-narrative level. Consequently, the five areas are a new field of exploration for the future creation of new operational tools.

Finally, our ambition would be to open the discussion among those in charge of updating design programs to evaluate the prospect of including the skills needed to manage the meta-narrative level according to the modalities and prerogatives of designers.

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