Inflection Point

DESIGN RESEARCH MEETS DESIGN PRACTICE

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Coaching Adaptive Leadership. Navigating The Dark Side of Design by Embracing Uncertainty and Negotiation

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Until recently design has been recognized as a discipline strictly related to skills and practice, in which the main role of the designer was to follow and negotiate an imposed brief. In this circumstance, as many literature have shown, (Christiaans, 2002)(Cross, 2003, 2004) (Dorst, 2004) (Lawson, 2004) designers adapt to the brief practicing their skill and knowledge to generate the most innovative solutions. As shown by Dreyfuss (1998), with time the development of the mind frames changes from beginner /novice to competent, and expert, eventually reaching the levels of master and visionary. In this context, although design training is constantly evolving towards a holistic view of the overall process, the power and political dynamics that steer the creative design environment are only mentioned as contingent forces. The next paper aims to raise the awareness on the importance of the master and visionary levels at which power and politics are placed at the core of the design training. For this purpose we argue that future strategies of coaching for design leadership, have to investigate the full meaning of design mastership and visionary as a higher order of design training for experts.

***Keywords**: Adaptive Leadership, Coaching, Negotiation, Navigation Strategy, Criticism, DarkSide Design*

Introduction

Many literatures have shown how design expanded its focus from the outcome, concerned with the quality and aesthetics of the product delivered, towards management and the quality of the strategy and process (Press & Cooper, 2003) (Best, 2006) (Farr, 2011). As such, design management applies at operational, tactical and strategic levels (Borja de Mozota 2003), and at strategic level should work as a tool of change for the organizations in which it is implemented (Karjalainen, 2012). The above mentioned role of change makers and innovators, implies however more than the managing skills, an overall ability to understand the nature of the organizational context, identify the out-dated meanings and values (Cooksey, 2003) and choose the right metaphors that will enable the implementation of change. Design leadership has therefore to be seen in close relation and dependency with design management (Gloppen, 2009), acting as one of the main factors in the organizational transformation (Bucolo, 2015, pp.113-129).

All the above bring forward the necessity to draft new training and coaching strategies that will acknowledge the emergence of leadership in design. We argue that in order to do that it is necessary to look at the different expertise levels in design, asking how to coach expert designers to discover and achieve master and visionary capabilities (Dreyfuss, 2003). Starting from this assumption we first present the literature review focusing on the design leaders' responsibilities (Muenjohn, et al., 2013) introduce the different levels of the organizational context (Cooksey, 2003), outline the importance of uncertainty as a way to induce change in an organizational system, (Hammonds, 2002), and explain the leading and learning framework as an example of strategic approach for design leadership.

The leading and learning approach was tested in three workshops which involved expert designers and architects with consolidated careers from China, India, Brazil, Chile and Italy. We will present the argument and duration of the workshops, explaining the content and the results of the activities underlining their coaching dimension. The discussion will show how the passage from the expert to master and visionary mental frames involves a dynamic of empowerment, in which designers are encouraged to trespass the borders of the professional training and skills and rely on the experiential knowledge in order to activate their intuitive and imaginative capabilities. Finally we suggest that design leadership has to be understood not in topological terms, or as hierarchical position in an organization but as

the capability of the designers to lead and learn in order to provoke change from inside an organizational system.

1. Literature review. Defining the contexts of change.

Previous literatures have shown how design leaders have to encompass several core responsibilities in order to engage and guide. As such Muenjohn, drafts a conceptual framework that underlines several core responsibilities of the design leaders' as follows:

- envisioning the future
- manifesting strategic intent
- directing design investment
- creating and nurturing an environment of innovation

(Muenjohn, et al., 2013)

In this case "envisioning the future" is the first responsibility that activates the leading capabilities giving a different meaning of the relation between the design process and team performance. "Vision" is also shown as the desired outcome of the operational and strategic activities in business firms by Bucolo & Matthews, pinpointing the transition from the abstract to concrete levels and from the project to business levels (Bucolo & Matthews, 2011). Furthermore drawing from Norman's definition of "transitional engineering" (Norman, 2010), Wrigley & Bucolo pinpoint the need for a translator of the design concepts into business opportunities and indicating this role as "transitional developer" (Wrigley & Bucolo, 2012). This brings forward the necessity to coach expert designers for leading roles in which the envisioning capability is placed at the centre, in order to anticipate new meanings to the translation from abstract reasoning to concrete actions. We argue that in this cyclic transformation, leadership is in close relation with a learning process that feeds the imaginary potential and enables the envisioning activity.

To better understand the duality of leading and learning it is necessary to outline the nature of the organizational context and different levels at which it evolves. Figure 1 shows how the "environment" outlines the area outside the organization, in which the interests of different stakeholders, social and political actors influence the dynamic of the organization; the "organization" defines the overall features of the agency such as its history, structure and

hierarchy, internal culture, resources and procedures; the "groups" refer to the formal and informal networks and communities of practice within the organization, with their specific behavioural patterns and influences; finally each "individual" is seen with his/her capabilities, personal resources, needs, weaknesses and emotional features (Cooksey, 2003, pg. 205).

This generic description of the different layers of the organizational context help us envision the complexity of the creative environments and their self referential features, and emphasize the fuzziness and entropy of the interferences at all levels pictured above.

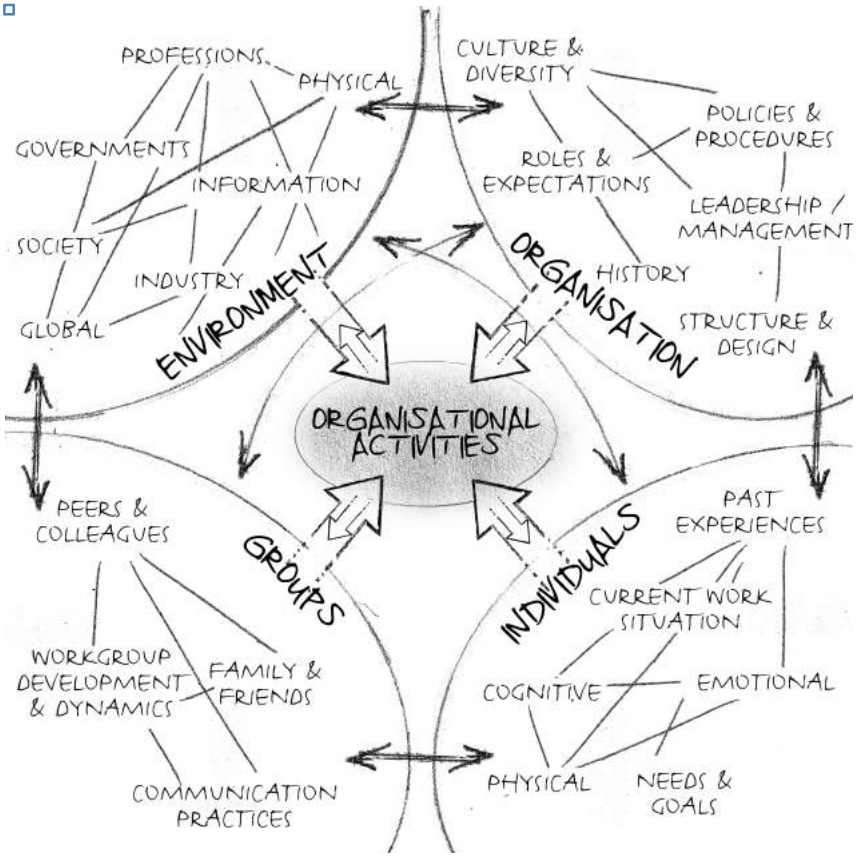

Figure 1- The different levels of the organizational context. Modified after (Cooksey, 2013)

1.1 Creating and governing uncertainty to induce change.

Having drafted the basis that identifies the convergence of learning and leading, the next issue taken into consideration is how to pursue the

development of this model verifying it in different contexts. As shown in figure 1, it is necessary to envision the contextual complexity at the different scales, assessing the relevance of the different dimensions of the learning and leading model proposed and understanding how to use and adapt its various parameters. In each circumstance the juxtaposition of old and new meanings, passes through a cycle of observation, orientation, decision and action. This cycle or loop was developed and tested by air force pilot and strategist, John Boyd who studied its development and application pushing it from a hands-on knowledge related to his personal experience as an F16 pilot to an extended theoretical concept and trans disciplinary strategy (Hammonds, 2002) (Dahl, 1996). To better describe the OODA loop Boyd devised a thought experiment as follows:

> *Imagine four scenarios: someone skiing, someone power-boating, someone bicycling, and a boy playing with a toy tank. Break down each domain into its component parts: For skiing, there would be snow, chairlifts, skis, hot chocolate, and so on. Within their domain, the parts have directly identifiable relationships with one another. But scramble together the parts from the four domains, and suddenly it's hard to determine any relationships at all. We are thrown into chaos. Now, [...], take one part from each scene: From skiing, select the skis; from power boating, the motor; from bicycling, the handlebars; and from the boy with his toy tank, the treads. What do these elements have to do with one another? At first, seemingly nothing — because we still think of them in terms of their original domains. But bring the parts together, and you've used your creative pattern-recognition skills to build ... a snowmobile! "A winner," Boyd concluded, "is someone who can build snowmobiles ... when facing uncertainty and unpredictable change." (Hammond, 2002)*

Elsewhere, (Galli & Suteu, 2013) (Galli & Suteu, 2015) we have shown how the OODA cycle could be taken as an example and applied in design-thinking to disrupt obsolete thinking patterns and increase creativity in the design groups. In particular it was argued that provoking and balancing conflicts could increase creativity by inducing a state of emergency. This is possible as shown in the previous example through an on-going observation in action, by adjusting the orientation and continuously re-defining the imaginary entities. For this reason, creating flexible mind frames requires coaching the imaginative sense and learning to listen and learn to interpret the incoming stimuli from inside or outside the organizational system.

The role of imagination in the changing process.

In order to activate the learning and leading cycle it is necessary to remember the importance of imagination in blending the hands-on skills with the knowledge and expertise of the trained design professional. Rather than delineating designers' "place" it is more important to focus on the role of the design leaders and understand empowerment as an important responsibility. In this sense the actual task of the design experts from a leadership perspective is to guide from within the organization with an experiential learning approach (Kolb & Kolb, 2005) (Kolb, 2014). The OOAD cycle is only one of the models that can support the implementation of this strategy and help designers induce uncertainty in order to corrupt the "comfortable" mental schemes. Ideally the most important contribution of the designer would be to act as an agent provocateur pushing the boundaries of the limited perspectives with the use of imagination, continuously enlarging the domain of vision, action and possible achievements. The ultimate goal is not to find solutions to incoming problems, but to revert the perspectives transforming the obstacles in opportunities for change, or introduce new problems with the objective to frame the context of change.

Acknowledging the presence of a hidden, less explored dimension of power in design helps envisioning a new type of coaching, which has as final aim a mutated concentration on the possibility to potentiate the imaginative and provocative dimension of design, empowering designers to attain visionary leadership capabilities. This role is concerned with the understanding of the impact of the changes that emerge in contact with incoming adversities in a given organizational system, embracing the chance seeking when facing chaotic circumstances. This brings forward what the concept of antifragility, or the capability to benefit from randomness, volatility and uncertainty (Taleb, 2012) and is a quality that defines chance-seeking taking advantage of (apparent) irrelevancy of marginal events.

Looking for relevance in randomness is perhaps best expressed in Sun-Tzu's words: "[i]f we do not know what we need to know, then everything looks like important" (Sun-Tzu, 2010).

1.3 Chance seeking as a meaningful leadership activity.

The elements that allow a leader to achieve his/her purpose are only partially visible and also related to chance seeking (Bardone, 2012). As

Bardone remarks a chance can be seen as an opportunity that will be assessed in the future and relates both to what we know but more interesting to what we don't know. In this sense he divide the “knowns” in three main categories:

Forgotten knowns, which refer to the knowledge that was once acquired but remains stored in our memory only as a fading memory. This kind of knowns are still present and have an important influence on the way we reason even though cannot be fully recollected.

Secreted knowns, related to the Freudian concept of repression of a known and are hidden or unknown to one's unconsciousness and therefore secreted.

Tacit knowns, which comes from Michael Polanyi “The tacit dimension” (Polanyi, 1983) and describes the knowledge acquired through experience in time that cannot be expressed in words or images. In other words we are not fully aware of the accumulation the tacit known. All three categories are called by Bardone **silent knowns**, and they affect the chance-seeking behaviour:

> *Unknown knowns – in the form of silent knowns – merely offer a potential chance for knowing, which, however, does not appear immediately evident or at one’s disposal. [...]. Time is a major factor determining whether a silent known is going to remain silent or it will turn out to be a good chance. (Bardone, 2012, p. 6)*

Acknowledging the presence of the silent knowns helps us draft a different type of leader, whose role is to become open towards the impact of the changes strengthening his/her leading capabilities in contact with incoming adversities, embracing the chance seeking within a chaotic system. The use of imagination unleashes the silent knows allowing them to act as intuition rather then structured representations therefore leaving space to the envisioning of an open system. The advantages that come from being aware of the existence of the silent knowns are manifested in the strength and confidence in one's own actions, a quality that a leader must acquire and display in order to be able to accomplish his/her guiding role. One of the most important points of the leadership coaching is therefore acknowledging and educating the multidirectional aspect of observation, aimed at chance-seeking and envisioning an open system guided by intuition and confidence in unknown knows.

2. Case studies: coaching expert designers in different cultural contexts.

Starting from the above assumptions, the following examples are intended to show the first steps in testing the hypothesis that experiential learning methods are relevant in coaching for design leadership. By this we refer to the category of professional designers that achieved a high level of expertise in their careers. The workshops took place in Italy and China in 4 different one week sessions, and involved groups of 15 to 35 fashion designers, architects, manager and owner[8] specializing in design luxury markets. The aim of the leadership module was to empower the participants to analyse their activity with a strategic lens taking into account the power dynamics that influence their decision making process from within and outside their organization.

2.1 Research methods. Applying conversation to action and experiential learning methods.

Having mastered the work routine in their own design studios, or in managerial positions in large architecture and design studios, the experts involved in the educational activities were not seeking the refinement of their skills but rather were motivated by the unexpressed understanding that design goes beyond the mere execution of a given brief or the successful management of a subordinated team. The main question that the workshops wanted to address was how to change the focus of their interest from "how to" find solutions for incoming problems to asking "what if" as a way of activating the envisioning capabilities. In order to do that the authors used methods of facilitation were inspired by conversational learning approach (Baker et al., 2002) which links the abstract and concrete ways of knowing, requiring an emotional involvement from the participants. The conversations were supported by hand drawn visualizations.

The subject of the conversations connected the power dynamics in the professional network with the business model enabling the participants to increase their awareness on the power dimension, find and visualize the critical nodes, and envision strategic changes in their organization.

[8] The workshops were part of the Master in De. Lux, Design for Luxury organized by Politecnico Milano Consortium in collaboration with Tsinghua University in Beijing, Hangzhou and Shenzen in 2015 and 2016.

One of the most successful exercises was to ask students to create their own map interpreting the various internal and external factors and anomalies that influenced their professional network. This exercise was possible in particular because the expert designers were already familiar with the actors and stakeholders in their influence network and introduced a power dimension to the reading of the business model (fig. 2).

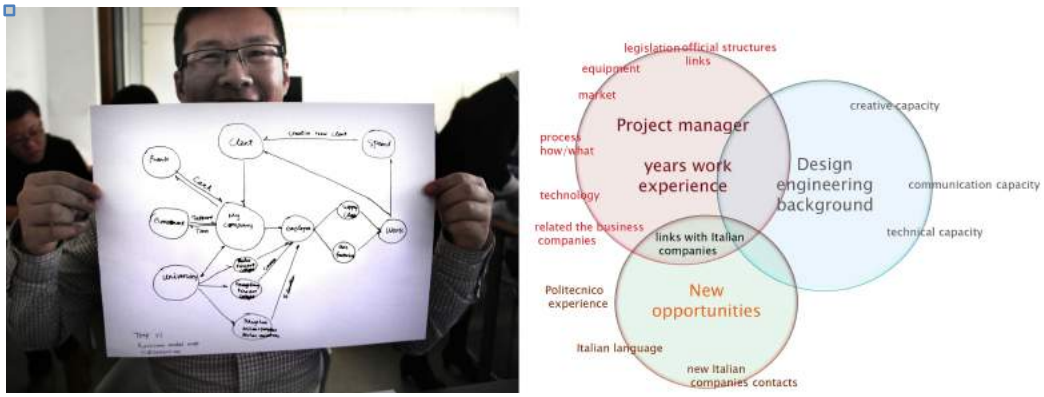

Figure 2- Examples of exercises during the workshops. Visualizing the position of the organization within a network.

In this case it is important to underline that the visualizations were intended mediation artefacts for a discussion on the practice of leadership from three different perspectives: first as a "Constellation Design" of the actual state of the power flow within the organizational system; second to raise the awareness on the unknown, or hidden potential of change in the organization; third to understand the organization within a larger context and relate the power influences at a larger scale.

2.2 Results. Acknowledging the importance of power and politics in design.

This type of analysis helped to introduce the concepts of power, influence, conflict and provocation that are present in the work of expert designers as silent knowns. This is due in part to the perception of design as a neutral activity related to creativity and form shaping and focus on the quality of output.

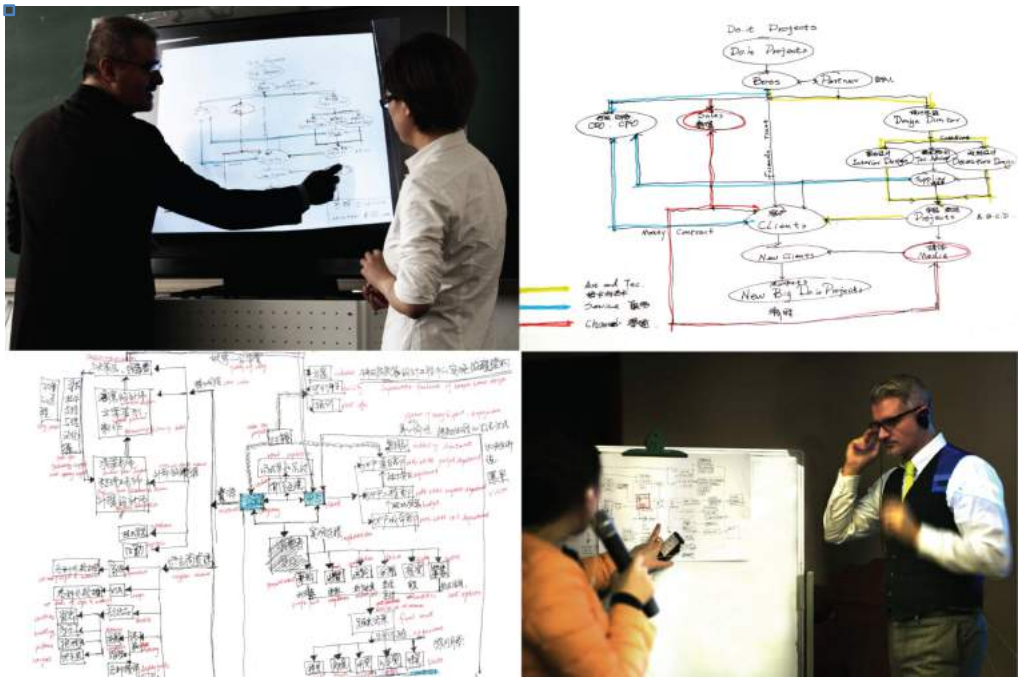

Figure 3 - Visualizing the power flow and influence with the help of a business model sketch.

The observation stance mediated by the visuals, helped designers to become familiar with the language of power and politics that before was foreign to their vocabulary (fig.3). Moreover in this case the cultural background of the students played and important factor, and delineated firstly the curiosity and interest on the argument but also the reluctance to tackle an argument that was perceived as particularly sensitive. This type of attitude underlines the contrast between the semantics of two communication codes. In this sense we can think of the design communication code relating to innovation and non-innovation, while the political science code with power and non-power (Seidl, 2004 p.36-37).

2.3 Coaching professionals to adopt a leadership attitude towards change.

The exercise has to be seen in this sense as a condensed experience organized in several steps, which had the aim to empower expert designers to use, and think in a different communication code, that of politics.

The steps followed the observation, orientation, decision, action strategy presented previously in order to coach an improved awareness on the dimension of power in design. In this sense the initial presentation of the

argument induced an **observation** stance, familiarizing students with the argument; the practical exercise phase had an **orientation** dimension in which students created the visualizations of their business activities combined with a **decisional** dimension in which they had to prioritize the information expressing it in a synthetic manner. Finally they **enacted** the interpretation of the power and influence flow with the help of the visualisation.

In this process the role of the lecturer was that of a mediator and facilitator, introducing a provocative attitude as a way to sharpen the critical sense of the expert designers, supporting them to shift from observation to action. An important factor for the facilitator / mentor is to practice an active listening by being present and underlining contrasts rather than imposing a point of view. As we will show later on the coach has the delicate task to stimulate expert professionals to **shape ideas** rather than respond to ideas, adopting an **active** leadership attitude rather than a **reactive** one more common for the role of follower.

In this sense the facilitator has the responsibility to *coach* and therefore support the experts to achieve an extended awareness rather than imposing a pre-established direction and setting up educational goals to achieve.

3. Discussion. Designers as Leaders – understanding change as the only certainty.

As shown in the previous part, coaching designers for leadership implies making visible the dimensions of power and conflict. The manifestation of power in this sense stays in letting go of the certainties acquired through experiential knowledge, and seeking the right amount of disequilibrium as a way to provoke momentum for change. Not only changes occur and are expected to happen in all domains but they are interrelated to, and provoke each other at all scales. In this conditions, as Heifetz remarks,

> *Without urgency, difficult change becomes far less likely. But if people feel too much distress, they will fight, flee, or freeze. The art of leadership in today's world involves orchestrating the inevitable conflict, chaos, and confusion of change so that the disturbance is productive rather than destructive. (Heifetz et al., 2009).*

3.1 Dislocating the focus on the design output.

The previous examples have shown how professional designers who have achieved an advanced working and coaching experience, seek the opportunity to learn how to shift the focus from the process of designing a given artefact towards cultivating an extended awareness on the power flow that influence an organizational system. In the examples shown above the workshops involved experts that intuitively recognize the limitations of the concentration on the mere process of designing, and choose to invest in an advanced education. In all cases the motivation of the professionals to return to the classroom was given precisely by the search for a training that will enable them to surpass a fully mastered work procedure and empower their imaginative potential.

In the mean time the experiences enabled the authors to test the initial assumption on the relevance of coaching for mastery and visionary levels by criticising the utility of design, **dislocating** its focus on productivity and the quality of the design artefact and **mutating** the attention towards the potential leading attitude and capability of envisioning and proposing new meanings for out-dated meanings in order to create new actions (fig.4).

Figure 4 Developing a space for leadership through experiential learning. Modified after (Cooksey, 2003).

3.2 Understanding the difference between expert and master in design.

The main purpose of the training for leadership can be seen as not necessary teaching new skills to the expert designers but helping them activate their knowledge on four levels:

1. recollection: on individual level, looking at the personal experience as a whole, and a source of inspiration and empowerment;

2. recognition: in more complex organizational contexts, integrating the experiential knowledge as a way to expand the understanding of the incoming circumstances;

3. decision: as a way to engage in actions and reduce the delay between decision and action;

4. awareness: cultivating the constant attention on the stimuli coming from inside or outside the organizational system.

In one of the first reflections about the levels of expertise Dreyfus identifies 4 levels of expertise as novice, competent, proficient and expert (Fig.5) (Dreyfus & Dreyfus, 1980). The first three levels are concerned with

the full acquisition of skills and ability to perform them, which in the context of the design training are equivalent with the undergraduate level.

SKILL LEVEL / MENTAL FUNCTION	NOVICE	COMPETENT	PROFICIENT	EXPERT	MASTER
RECOLLECTION	Non-situational	Situational	Situational	Situational	Situational
RECOGNITION	Decomposed	Decomposed	Holistic	Holistic	Holistic
DECISION	Analytical	Analytical	Analytical	Intuitive	Intuitive
AWARENESS	Monitoring	Monitoring	Monitoring	Monitoring	Absorbed

Figure 5. The skill levels and mental functions at different levels of expertise (Dreyfus, 2003).

The former addition of the **advanced beginner**, **master** and **visionary** levels (Dreyfus, 2003) are also quoted by Dorst when discussing the skills development in the design practice (Dorst & Reymen, 2004) and open a larger perspective on the evolution of the design leadership training. Moreover an important point is made by describing mastery as an elevated level in which the performance attains moments of optimal experience and creative flow (Czicksentmihaly, 1996):

> *Although, according to our model, there is no higher level of mental capacity than expertise, the expert is capable of experiencing moments of intense absorption in his work, during which his performance transcends even its usual high level. […] this masterful performance only takes place when the expert, who no longer needs principles, can cease to pay conscious attention to his performance and can let all the mental energy previously used in monitoring his performance go into producing almost instantaneously the appropriate perspective and its associated action. (Dreyfus & Dreyfus, 1980, pg. 14)*

3.3 Leveraging skills to empower attitude.

Mapping the mental functions with the task characteristics helps delineating the areas in which expert designers can benefit from coaching in order to activate their leadership capabilities and becoming aware of a more profound meaning of “dark side” of their decisions and actions.

Looking into detail at each category of mental functions and tasks helps envisioning the dimensions in which the coaching for mastery in design leadership can evolve.

With respect to the **recollection** of situations at the expert level in which "the expert has learned to distinguish those situations requiring one reaction from those demanding another" (Dreyfus, 2004, pg. 180), at the master level it is the observation of the situation at hand that provides the cues for orientation. In other words the master's mind-set is not projected solely on the past experiences but remains alert to the present and incoming stimuli. This enables him/her to **recognize** the specificity of the new circumstances in a **holistic perspective** and activate almost instantly the **decision and action.** The speed of reaction with which the master activates his/her perceptive resources coordinating them with the decision process requires an inward attention towards the emotional signals that guide **intuitive action.** This underlines the state of **absorbed awareness** concentrated on self consciousness.

SKILL LEVEL / MENTAL FUNCTION	NOVICE	COMPETENT	PROFICIENT	EXPERT	MASTER	VISIONARY
RECOLLECTION	non-situational	situational	situational	situational	situational	chance seeking
RECOGNITION	decomposed	decomposed	holistic	holistic	holistic	random
DECISION	analytical	analytical	analytical	intuitive	intuitive	instinctive
AWARENESS	monitoring	monitoring	monitoring	monitoring	absorbed	mutated
	Youth Training				Adult Education	

Figure 6 - The expertise levels modified from (Dreyfus & Deryfus, 1980) to include the 6th, visionary level.

Figure 6 shows how bringing the levels of expertise in the context of the design environment, the professional expert, that before was confined to his/her skills and ecosystem of the own studio, gains a strategic leadership role for an extended community of practice. In this context, coaching adaptive behaviour and an increased awareness on the responsibilities of the design leaders can activate the visionary mind frame described above. Moreover the leadership role implies the full acknowledgement and assessment of the mechanisms of power and how to orient in a given system of influences. As Abraham Zaleznik underlines:

> *Leadership inevitably requires using power to influence the thoughts and actions of other people. Power in the hands of an individual entails human risks: first the risk of equating power with the ability to get immediate results; second, the risk of ignoring the many different ways people can legitimately accumulate power; and third, the risk of losing self control in the desire of power. (Zaleznik, 2004, pg. 1)*

4. Anticipating mutations / altering the power manifestation.

All the above suggest the detachment of the last two levels, master and visionary, from the previous ones in terms of balance between skill and adaptive capabilities. As such, if up until the expert level the skill was strictly related to the in-depth comprehension of technical capabilities, at the master level the fully proficient expert is engendered with the capability to face adaptive challenges, questioning and criticising the previously acquired expertise in a constraint domain of practice. From this perspective coaching for design leadership implies the alteration of power manifestation from enacting the transformation of knowledge into a design outcome, to the transfer of personal experience into the capability to negotiate power and the possibility to chose between observation and action. Coaching for leadership in this sense has to be seen not as an educational format but as a fluid activity that empowers the expert designers (and not only) to achieve a higher level of awareness and reach their own visionary potentialities.

4.2 Experiential learning applied to the design leadership coaching.

> *Leadership is an improvisational art. You may be guided by an overarching vision, clear values, and a strategic plan, but what you*

> *actually do from moment to moment cannot be scripted. You must respond as events unfold. (Heifetz & Linsky, 2003, pg.66)*

It is the responsive capability that brings forward the intuitive and creative capabilities of the designers and their role as leaders rather than executers of an imposed brief. In this sense the skills and knowledge acquired through experiential learning enable designers to understand the consequences and impact of change in a temporal dimension. Here an important role is played by the difference between technical problems and adaptive challenges at systemic level. To clarify the two terms Ron Heifetz explains how the solutions to technical problems can be found in "our current" repertoire of knowledge, in the know-how acquired through experience and training, while adaptive challenges are complex situations in which, as Heifetz remarks,

> *[...] our current knowhow just isn't quite sufficient, where there isn't an expert on the subject who can fix the problem, where a current organizational design or structure, stories, narratives, metaphors don't do the job sufficiently. (Ron Heifetz, 2009, video interview)*

The distinction made by Heifetz, reminds of the inactive capabilities of the designers to imagine and use introspective intuition as a way to foresight a clear vision of adaptive challenges, by activating the "silent and unknown knowns" (Bardone, 2012). These characteristics of the design reasoning have to be cultivated and coached in accordance to the specificity of a context, taking in consideration the inertia of the organizations and the refusal to change an established management (Galli, et al., 2015). The contribution given by designers who lead is precisely to learn how to disrupt the status quo narratives and prepare the ground for change. Not only conflict is always present and needs to be dealt with but is also "a necessary part of the change process and, if handled properly can serve as the engine of progress" (Heifetz & Linsky, 2003, pg.69). Mastering adaptive leadership comes from maintaining the right level of disequilibrium as a way to enable people to shift course and experiment future practices in uncertainty and turbulence (Heifetz et al. 2012). Learning is therefore an essential part of leading for adaptability and implies most of all gaining the insight and awareness that in order for change to happen it is natural to face the loss of old values and meanings.

4.3 Anticipating mutations as a consequence of change.

Having seen all the above we can see the role of the coach or mentor for design leadership as a guide who has the challenging task to maintain and sharpen the critical sense of the expert designer, and leads the experts through an empowerment process in which the roles of educator and student transform into a learning partnership (Jackson, 1992) (Kolb, 1984)(Kolb et al., 2001).

The training of the adaptive behaviour at master and visionary levels implies navigating between the pro-active, negotiating and anti-action attitudes (fig. 7).

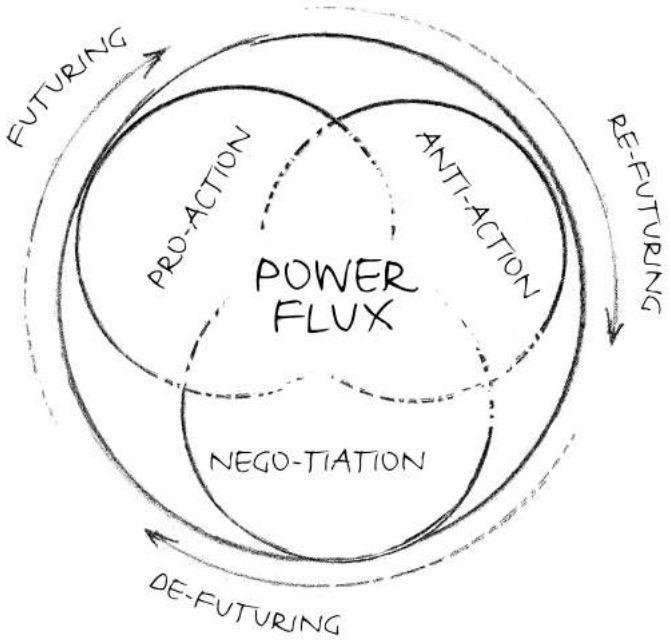

Figure 7 - Diagram showing the nego-tiation, pro-action and anti-action attitudes in the power flow.

The link between the different attitudes is better explained when looking at their etymology, in which action*, or agree* means putting in motion, performing, doing; *negotiation,* communicating in mutual agreement, and finally *antes action or* standing in front of, observing action in a reflective stance.

Achieving the **visionary level** has to be seen as an overarching goal of coaching and not as the end result. In this sense Zaleznik suggests an important difference between the personal development strategies of the managers and leaders:

> *In considering the development of leadership, we have to examine two different courses of life history:* ***1). development through socialization,*** *which prepares the individual to guide institutions and to maintain the existing balance of social relations; and* ***2). development through personal mastery*** *which impels an individual struggle for psychological and social change. Society* ***produces*** *its managerial talent through the first line of development; leaders* ***emerge*** *through the second. (Zaleznik, 2004, pg.6)*

5. Conclusion. Design as paradox.

In conclusion, we presented the preliminary test and experimentation in design educational context of the hypothesis that design leadership brings an enhanced dimension to the design training for several reasons: first it helps dislocating the "traditional" perception of design as a discipline concentrated on the production and quality output of a project. In this sense we argued that although starting from the novice level and up until becoming experts the design education concentrates on skills, the training for design leadership concerns a higher level of expertise. We showed that coaching for empowering mastery and visionary attitudes bring in question the mutation of an increased awareness towards transferring an acquired knowledge and personal experience into change provoking actions. As such the main capability of the leading and learning dynamic, is asking "what if", doubting the obvious and out-dated values and proposing new meanings for actions. We have shown that the imaginative capabilities of the expert designers play an essential role in achieving the consciousness of the presence of unknown knowns.

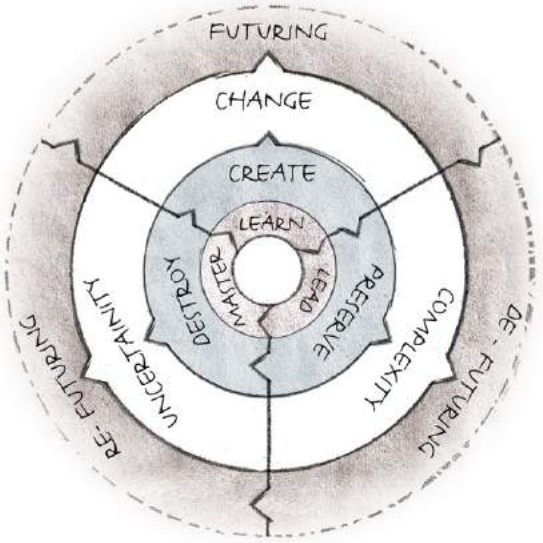

Figure 8 - Diagram showing the different dimensions on which the mastery of leading and learning evolve.

The visionary in this sense is placed in a paradoxical role in which he / she possesses the potentiality of vision but also the capability to restrain from articulating through power (fig.7).

Placed in the design context the metaphor of vision indicates the possibility of the paradox that is born from the tension between the concrete experience and its articulation in an abstract conceptualization. The same tension is created by the potentiality and the preservation of power and allows visionaries to attain the openness of the discovery while enriching their experience. Coaching expert designers to become aware of the importance of intuition enables the chance-seeking capabilities and empowers them to trust their visionary dimension.

References

Bass, B. M., & Stogdill, R. M. (1990). Handbook of leadership.

Bennis, W. G. (1989). Managing the dream: Leadership in the 21st century. *Journal of organizational change management*, *2*(1), 6-10.

Bonsiepe, G., & Cullars, J. (1995). The Invisible Facets of the hfg ulm. *Design Issues*, *11*(2), 11-20.

Borja De Mozota, B. (2003). *Design management*. New York.

Bucolo, S. (2015). Mentors, catalysts and provocateurs. The changing role for designers in the shift to design integrated business. In Anderson, L.; Ashton,P.; Colley, L.. *Creative business in Australia.*

Bucolo, S., & Matthews, J. H. (2011). Design led innovation: Exploring the synthesis of needs, technologies and business models*. In Proceedings of Participatory Interaction Conference 2011.*

Christiaans, H. H. (2002). Creativity as a design criterion. *Communication Research Journal*, *14*(1), 41-54.

Cooper, R., & Press, M. (1995). *The design agenda: a guide to successful design management*. John Wiley and Sons.

Cooksey, R. W. (2003). "Learnership" in complex organisational textures. *Leadership & Organization Development Journal*, *24*(4), 204-214.

Cross, N. (2003). The expertise of exceptional designers. *Expertise in Design, Creativity and Cognition Press, University of Technology, Sydney, Australia*, 23-35.

Cross, N. (2004). Expertise in design: an overview. *Design studies*, *25*(5), 427-441.

Daly, A. J., & Chrispeels, J. (2008). A question of trust: Predictive conditions for adaptive and technical leadership in educational contexts. *Leadership and Policy in Schools*, *7*(1), 30-63.

Dorst, K., & Reymen, I. M. M. J. (2004). Levels of expertise in design education. In *DS 33: Proceedings of E&PDE 2004, the 7th International Conference on Engineering and Product Design Education, Delft, the Netherlands, 02.-03.09. 2004*.

Dreyfus, S. E., & Dreyfus, H. L. (1980). *A five-stage model of the mental activities involved in directed skill acquisition* (No. ORC-80-2). California Univ Berkeley Operations Research Center.

Dreyfus, H. L. (2005). Overcoming the myth of the mental: how philosophers can profit from the phenomenology of everyday expertise. In *Proceedings and addresses of the American Philosophical Association* (Vol. 79, No. 2, pp. 47-65). American Philosophical Association.

Farr, M. (2011). Design management: Why is it needed now. *The handbook of design management*, 47-52.

Gloppen, J. (2009). Perspectives on design leadership and design thinking and how they relate to European service industries. *Design Management Journal*, *4*(1), 33-47.

Galli, F., & Suteu, I. (2013). Design thinking as a disruptive discourse embracing conflict as a creative factor. In *Design Management Symposium (TIDMS), 2013 IEEE Tsinghua International* (pp. 142-146). IEEE.

Galli, F. & Suteu, I. (2015). Design as power. An exploration into the dark side of design. *Proceedings of the 11th European Academy of Design Conference (EAD11)*, Paris.

Heifetz, R., Grashow, A., & Linsky, M. (2009). The practice of adaptive leadership. *Boston, MA: Harvard Business School Publishing*.

Fathers, J. (2003). Peripheral vision: An interview with Gui Bonsiepe charting a lifetime of commitment to design empowerment. *Design Issues*, *19*(4), 44-56.

Karjalainen, T.-M. (n.d.). IDBM Vol. 2. *IDBM Program, Aalto University*, *2*.

Kolb, Alice Y., and David A. Kolb (2005). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of management learning & education* 4, no. 2,193-212.

Kolb, D. A. (2014). Experiential learning: Experience as the source of learning and development. FT press.

Kruss, G., Wildschut, A., van Rensburg, D. J., Visser, M., Haupt, G., & Roodt, J. (2012). Developing skills and capabilities through the learnership and apprenticeship pathway systems. *Client report commissioned by the Department of Labour project–An impact assessment of the National Skills Development Strategy II. Cape Town. Human Sciences Research Council*.

Lawson, B., & Dorst, K. (2013). *Design expertise*. Routledge.

Linsky, M., & Lawrence, J. (2011). Adaptive challenges for school leadership. *Leading and Managing Schools*, 1.

Muenjohn, N., Chhetri, P., Hoare, L., As-Saber, S., & Suzumura, Y. (2013). Design leadership: a conceptual framework of leadership, design and team performance. *International Proceedings of Economics Development and Research*, 60, 157.

Norman, D. (2010).The research-Practice Gap: The need for translational developers. *Interactions*, August 2010, 9-12.

Polanyi, M. (1983). *The tacit dimension*. *1966*. Gloucester, MA: Peter Smith.

Seidl, D. (2004). Luhmann's theory of autopoietic social systems. *Ludwig-Maximilians-Universität München-Munich School of Management*. (pp.36-37).

Wrigley, C., & Bucolo, S. (2012). New organisational leadership capabilities: transitional engineer the new designer?. In *Leading Innovation through Design: Proceedings of the DMI 2012 International Research Conference* (pp. 913-922). DMI.

Zaleznik, A. (2004). Managers and leaders. Harvard Business Review, 1.