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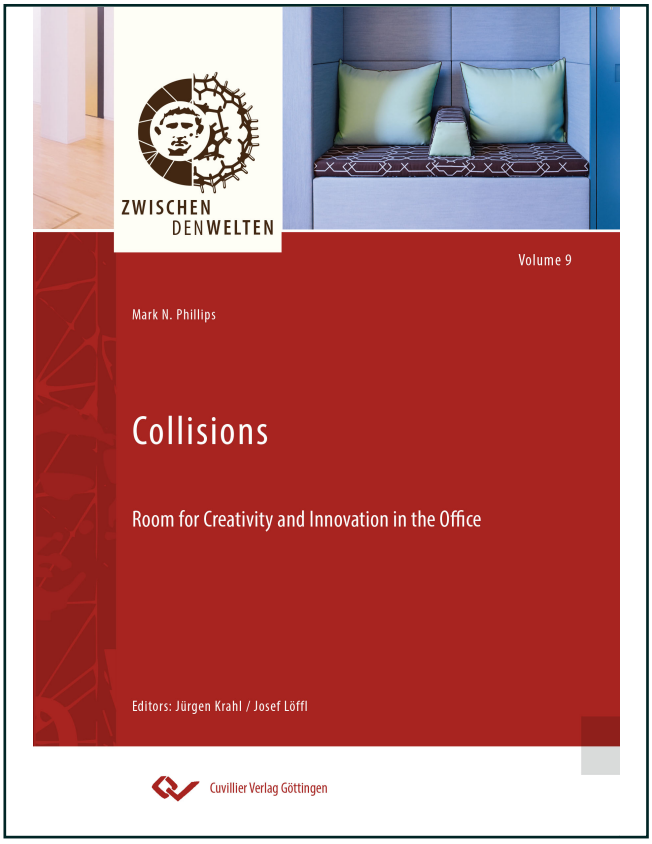
**Collisions**

Room for Creativity and Innovation in the Office

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# Chapter 1
# How does innovation arise?

At work?

- What has work got to do with creativity?
- Is innovation also work?
- Is the term ‘work’, and all that we generally understand it to mean, at all suitable for use in the context of being creative and innovative?
- Is there such a thing as creative work and where are we innovative?
- Is there a relationship between the spaces in which we work and the creative and innovative activity itself?

These are all questions that are of interest in this project and to which there are various answers.

However, there is one fundamental question that needs to be answered:

- How do creativity and innovation arise?

### Five Phases

As we are going to be concerned with the question of whether and how the designed office environment affects human creativity, we will need to have a closer look at what causes creativity. First of all, it is important to clarify that when we talk about creative work, we are not only concerned with the so-called creative industry. We are addressing all disciplines which have the requirement as part of the daily routine to develop new things or to create them or to question conventional practices and in that way generate innovation. This might be something temporary or simply a description of one’s own activities and is completely independent of whether one is for example, a web designer or a programmer. The question “how does something new come about?” is certainly not as easy to answer as the request for a definition of creativity. Over the past few years, I have accumulated a number of suggestions and possible answers under http://wieneues.blogspot.de/. This blog is a collection of impressions, lectures and literature on the topic that will be dealt with in detail in Chapter 3, Creativity – State of the Discussion.

Prof. Gerald Hüther, neurobiologist and author explains what happens in the brain when something new is anchored there. The brain is extremely plastic in terms of its architecture and he uses this in referring to the 'little man experiment' in which the reaction of six-month old babies was compared with their reaction six months later. (Video: Can Babies Tell Right From Wrong?, *NYTimes.com – Video* [2]). Babies can decide intuitively on what is good and what is bad i.e. this is not learnt rationally but is already available intuitively. The question that he raises is, why later in life anything new or new mind-sets are seen as something painful. He quotes Hermann Hesse: 'Courage, my heart, take leave and fare thee well!' and adds the following to it

> *My heart and not my brain! … Our ideas and conceptions ... are closely coupled with our emotional centres.*[1]

In conclusion, we can say that we want a lot of things that are new. However, we find it naturally and physically difficult to abandon our old habits. We are guided by our system and it is very difficult for us to depart from what we are used to. Something has become connected or has manifested itself in us, often subconsciously.

Prof. Hüther plays a decisive role in the film "alphabet – Angst oder Liebe" (alphabet – fear or love). The film deals with the question as to whether it is possible that already as a child we know everything and it is our education and training that over the years is responsible for some of this knowledge withering away. Perhaps in this context, experiencing something new is our own degeneration because instead of experiencing love, we only experience fear. Here, it becomes very clear that in creating something new, there is a close dependence upon which exterior influences are having an effect on us. On the other hand, David Kelley, the Guru of Design Thinking, not without reason, talks about "unleashing the creative potential within us all" in his book "Creative Confidence" [4] indicating that many of the prerequisites for creativity lie in or even better, lie within ourselves.

In a programme for local German radio (SWR 2 – Aula) with the title "Der zündende Funke im Kopf – Geheimnis Kreativität" (A Spark in the Head – The Secret of Creativity), Prof. Rainer M. Holm-Hadulla describes the five phases of creativity namely, preparation, incubation, illumination, realisation and verification: [5]

> *However, ideas about how creativity starts are often blurry. It is easy to ignore that there are positive and negative aspects. It does not come about all by itself and it is often the cause of tension that is sometimes very difficult to bear. It has*

[1] *„Wohlan, mein Herz, nimm Abschied und gesunde" und ergänzt „Mein Herz und nicht mein Gehirn! … Unsere Vorstellung und Überzeugungen … sind eng mit den emotionalen Zentren verkoppelt" [3]*

> *to be worked for and many hurdles have to be overcome on that path to a creative life.*[2]

Here, the internal tension that is part of the creative process is being discussed. During the incubation period, this tension lies within us and is the pre-requisite for the production of something innovative.

> *In order to produce something extraordinary, one finds oneself in a tense situation. One encounters difficulties and sometimes even failure. Some manage to bear the tension of the "not yet" especially when supported by sympathetic companions and go on to face the creative incubation phase. In it, the known takes on new forms. Something new and useful is in the process of being hatched.*[3]

One could describe the process of dealing with this tension at every phase as innovation and creativity management. In any case, there are various parameters and descriptions for this. At the Faculty of Design of Coburg University, I have been deeply interested in this in the context of the process of developing something new. In my research, I am especially interested in the moment of illumination. We ask ourselves what requirements both internal and external are necessary in order to produce that very moment when an idea is created. We are interested in the requirements, the preparation and incubation for innovation and creativity and what is needed for its further development, realisation and verification. Current results from brain research, psychology, philosophy, sociology and related fields form the framework for our research.

It is our own personal experience in design, in searching for this moment and in accompanying students in their search for these moments that lead to our special competence. Both we and our students then become the subject of observation. My observations make me believe that these moments do not occur in phases of tension, concentration and control but in phases of relaxation, contemplation and letting-go. However, we are generally not trained for these phases. This is why some of the requirements for creative processes need to be looked at more closely:

- Open-endedness and Motivation
- Eureka and Apercu – Promoting and fostering ideas

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[2] *„Allerdings sind die Vorstellungen, wie Kreativität entsteht, oft unklar. Es wird leicht ignoriert, dass sie Licht- und Schattenseiten hat. Sie stellt sich nicht von selbst ein und löst oft Spannungen aus, die schwer erträglich sein können. Man muss sie sich erarbeiten und viele Hindernisse auf dem Weg zu einem schöpferischen Leben bewältigen." [5]*

[3] *„Um etwas Außergewöhnliches zu produzieren, gerät man jedoch in Spannung. Man stößt auf Schwierigkeiten und scheitert gelegentlich. Manchen gelingt es, die Spannung des Noch-Nicht, häufig unterstützt von verständnisvollen Begleitern, zu ertragen und sich der kreativen Inkubationsphase auszusetzen. In ihr entwickelt sich das Gelernte unbewusst zu neuen Formen, etwas Neues und Brauchbares wird ausgebrütet." [5]*

- Risks and Choices
- Errors and error culture

At Coburg University, I work with students on interdisciplinary projects as well as mono-disciplinary ones. In these projects, it was and is still important to demonstrate openness right from the very time of setting the task. However, at the beginning, this can be confusing for the students. They do not receive enough information to be able to solve the task at hand. However, right at the very beginning of the project, the students are expected to express their own expectations so that they are able to start to solve the problem. Here, 'solving the problem' certainly also has something to do with the strenuous process of detachment from my supervision. As I do not expressly state any concrete expectations but consciously allow the students themselves not only to describe the task at hand but also their own expectations, they need to be able to deal with this openness and to do so right from the very beginning. This openness will be counterbalanced by the creation of familiarity on one side and trust on the other. This trust is absolutely necessary in order for students to be willing to try something new, something unknown as well as to promote courage and risk.

**Open-endedness and Motivation**

It is commonly said that the outstanding characteristic of Design Thinking is the open-endedness of the processes.

> *Design Thinking – if explained on a postcard – is creative thinking with a radical customer or user orientation. It is based on the principle of interdisciplinarity and in a structured, moderated iteration process, it links the attitude of open-endedness with the necessity for result-orientation. Design Thinking breaks with the notion that the future can be extrapolated from the data records of the past and searches for human needs that have not been (sufficiently) satisfied.* [4]

In so doing, open-endedness has always been the basis for a creative process compared to the earlier commitment to finding a solution. One's own experience demonstrates this when the level of one's own creative momentum then increases as the communication of one's own ideas about the type of solution decreases. The result of this is that open-endedness also means the loss of power and pressure. For without having a goal in mind, the exertion of pressure makes absolutely no sense, the direction is unknown. The loss of power however, is the pre-requisite for a creative proc-

[4] *„Design Thinking, - auf einer Postkarte erklärt - ist erfinderisches Denken mit radikaler Kunden- beziehungsweise Nutzerorientierung. Es basiert auf dem Prinzip der Interdisziplinarität und verbindet in einem strukturierten, moderierten Iterationsprozess die Haltung der Ergebnisoffenheit mit der Notwendigkeit der Ergebnisorientierung. Design Thinking bricht mit der Vorstellung, dass sich die Zukunft aus den Datensätzen der Vergangenheit ableiten lässt, und sucht nach menschlichen Bedürfnissen, die noch nicht (ausreichend) gestillt werden."* [6, S. 13]

ess with an open-ended outcome. Sometimes, the person vis-à-vis may be overwhelmed because openness is something with which one is not familiar. Frequently confusion occurs when goals are not described in a clear way. On the other hand, this approach provides an opening for additional energy that would probably otherwise lead to the classical defensive reactions.

> *The term 'Innovation' is in the same league of Management-Bullshitbingo-Ranking as 'Customer Centricity' and 'Strategies of Sustainability'. Someone who has the audacity to really use force to push for innovation is only providing a lip-service that provokes defensive reactions under the surface.*[5]

Power, pressure and force are just the opposite of an open-ended outcome and as such they are especially suitable for preventing innovation and creativity. They are meant to motivate from the outside and in so doing present exactly the opposite of the so-called intrinsic or internal motivation. Intrinsic motivation and creativity require each other. Various pieces of scientific research [7], [8] have demonstrated that one's own motivation for the task at hand produces a more creative result. It's fun to be creative. People find self-assurance and self-realisation in working in a creative manner. Mihaly Csikszentmihalyi [9] coined the term 'Flow' to describe full involvement in a creative activity. You can experience this flow which he describes as a state in which time and space disappear and a positive, attentive mood dominates which is focused on oneself. At the same time, one is so motivated that nothing is called into question. Motivation particularly needs a wide, open space which allows the motivation to flow back into it. Internal motivation cannot develop if relaxation, contemplation and letting-go cannot be really felt.

### Eureka and Apercu – Promoting and fostering ideas

Goethe talks of "Apercu" [10] and the term "Eureka" is Ancient Greek for "I have found (it)". The saying is traditionally known in association with Archimedes of Syracuse [11]. Archimedes is said to have jumped from his bath and then run naked through the streets of Syracuse shouting 'Eureka' after having realized how to prove that the king's crown was really made of pure gold and how to do so without destroying it. These are the very special instants when a new idea is created. In some cases, these moments involve a bath tub. However, in many cases it is the time that one spends in the bath and the muse that one experiences in the comfort and warmth of a hot bath.

[5] *„Der Begriff ‚Innovation' spielt im Management-Bullshitbingo-Ranking in einer Liga mit ‚Customer Centricity' und ‚Nachhaltigkeitsstrategie'. Es sind Lippenbekenntnisse, die unter der Oberfläche Abwehrreaktionen hervorrufen, wenn jemand die Frechheit besitzt, Innovation tatsächlich mit Kraft voranzutreiben." [6, S. 181]*

Some people live from their ideas. For them, it is not so much the fact that they earn money by doing so. They would be completely unhappy if they were not able to come up with new ideas. These people are creative geniuses. They are bubbling over with ideas. Our definition of creativity, however, has only marginally something to do with these people. If we look closely at the pre-requisites for the development of ideas, we will be able to find a considerable amount that can be transferred to the general promotion of creativity. Just as Csikszentmihalyi did in an investigation involving creative personalities when he looked at their **pre-requisites for creativity** and how they dealt with the creative moment. [9] The period of the creative processes with the emergence of ideas is the 'Flow' – a state of unconditional happiness and absolute ease that was common to all. He discovered that varied and very individual pre-requisites are needed to reach this common condition to promote ideas and to make them available to all.

Our experience with students at university has shown that happiness is one of the pre-requisites that play an important role. The author Frank Berzbach has mentioned this in his book too. Just as we were able to determine that the best pre-requisite for ideas is the feeling of happiness and security, so Berzbach describes in his book "Die Kunst ein kreatives Leben zu führen" [12] (The art of living a creative life) a number of pre-requisites for those who are professionally creative. These are the titles of a few of the chapters in his book 'Attaining Happiness', 'Zen and Creativity' or 'The Art of Drinking Tea'. He devotes a large section to 'Living and Suffering' in which he deals in considerable detail with negative thoughts and feelings, good and bad moods as well as depression [12]. Periods of depression are a similar phenomenon, similar to "flow" but with reversed signs. There too, ideas and thoughts are produced that would not be possible in normal everyday consciousness.

It is a very complex task to promote and foster the right ideas and bring slumbering thoughts to light with care for oneself and others. No matter whether a human being or a place is being addressed, if this task is taken seriously, both will need to be equipped with a high degree of sensibility. Part of this study will be concerned with how space can provide this sensibility. At the same time, the question needs to be asked on how the ideas that need to be promoted can be evaluated. In addition to a number of definitions, tools and methods, Christian Gänshirt describes in his book "Tools for Ideas – Introduction to Architectural Design", the dilemma facing the critique and evaluation of ideas.

> *The new, the original, the innovative features of a design create their own rules. And it is precisely this that since the start of the modern age has been the essential criterion of a design: making inventio more important than imitatio, invention more important than imitation. [13, p. 207]*

### Risks and Choices

A creative process is crucially a process of decision making and choices. It is a process involving analysis, comparison, selection, reconsideration, rejection and starting anew. In most cases, the processes are iterative, a procedure involving loops. During the process, one moves with each loop one level higher as if in an upward spiral. Every time decisions are taken, the question is raised as to where and when these decisions were made and how the decision making process can be supported in a positive way. The decision making process can certainly be influenced by interaction whether organised or spontaneous.

All decisions are coupled with the question about the risk that one is willing to take. Gerd Gigerenzer is one of the leading risk researchers. He has been Director of the Max-Planck-Institute for Human Development in Berlin since 1997. Since 2009, he is also the Director of the Harding Center for Risk Literacy which is in Berlin too. He advises companies and has investigated them in order to see how middle management evaluates the quality of its own decisions. In a survey, he asked managers about which decision they would submit to the next level of management should there be alternatives. Those questioned regularly confirmed that it was frequently the second or third-best solutions that were submitted. Those questioned found it difficult to communicate the best solutions to their superiors because these were intuitive and not rationally based and for this reason too risky for a rational decision making process.

Among the Petersberger Gesprächen 2012 [14], there is a lecture by Gerd Gigerenzer with the title “Wie trifft man gute Entscheidungen” (How do we make good decisions?). At the beginning of his lecture, he makes the following statement:

> *We consider intelligence to be an activity that is conscious and deliberate, which abides by the laws of logic. However, in our intellectual life, a lot is not of a conscious nature but is based on principles that have little to do with logic, intuition and gut feelings. We have intuitions about sport, friends, the right bank and other dangerous things. We fall in love; we feel that the DAX is going to go up. Could it be that such gut feelings lead to better decisions? That appears to be naive if not absurd.* [6]

Later on in his presentation, he provides support for the thesis that, in certain decision making situations, intuitive intelligence will make the better choice. Often, this

[6] *„Intelligenz stellen wir uns als eine überlegte, bewusste Tätigkeit vor, die den Gesetzen der Logik folgt. Doch vieles in unserem geistigen Leben ist unbewusst und beruht auf Prinzipien, die mit Logik wenig zu tun haben. Intuition, Bauchentscheidungen. Wir haben Intuitionen über Sport, über Freunde, über die richtige Bank und andere gefährlichen Dinge. Wir verlieben uns, wir spüren, dass der Dax wieder nach oben geht. Können solche Bauchgefühle zu besseren Entscheidungen führen? Das scheint naiv wenn nicht absurd.“ [14]*

happens without us being aware of what is going on. Gigerenzer also points out when it is better to make a rational choice and reflect on it a little longer and when it is better to follow one's gut feeling. In most decision making situations, however, we need forms of intelligence, rational and intuitive. Knowing that we use intuitive intelligence when making choices shows how important it is to raise the awareness of a working intuition as the basis for creative processes.

**Errors and Error Culture**

> *Intuition is experienced knowledge that reaches our consciousness very quickly but we do not know the reasons for it. They are not in language. Intuition is related to that part of our brain that is not conscious and that is the largest part. To brush aside intuition would mean to want to avoid using the largest part of our brain.* [7]

Instead of brain, we could also use the term intelligence. There is a large part of our intelligence that takes place in the subconscious and not in the rational part of our consciousness. Various methods are available during the decision making process and again and again the question is, which of these methods is the right one. It can be compared with a toolbox from which you can choose the most suitable tool for each task. But we are not certain which tool is the most suitable and so we make mistakes. If we recognize our mistake, we can learn from it. If we can communicate this error and discuss it with others then this is an even better learning process. A fundamental pre-requisite for creative activities is to be able to deal with errors in the decision making process. That means that an open error culture that makes it possible to discuss mistakes contributes substantially to whether creative work is possible or not. According to Gigerenzer, defensive decision making is one of the key problems of our society.

As we have mentioned already, the moment in which a new idea arises out of which an innovation develops, is a very special moment that is necessary, valuable and fragile for creativity and innovation. Prof. Holm-Hadulla uses the term "Illumination" [5], Goethe talks of Apercu and from ancient Greek came the term "Eureka". "Daily Rituals" is a further description for this moment and is the title of a book by Mason Currey that describes the daily routine of famous artists. There, we can gain an impression of the strategies of famous people from the creative environment in presenting their ideas and again and again producing new ones. Apparently, these rituals are necessary in order to cement the opportunities for muse within the daily routine. It

[7] *„Intuition ist gefühltes Wissen, was sehr schnell im Bewusstsein ist aber die Gründe dafür sind nicht bewusst, sie sind nicht in Sprache. Intuition bezieht sich auf jenen Teil unseres Gehirns, der nicht bewusst ist und das ist der Größte. Intuition grundsätzlich beiseite zu schieben bedeutet, den größten Teil Ihres Gehirns nicht benutzen zu wollen." [14]*

is crucial that muse is seen as part of the working day and not as a form of compensation. The promotion of ideas can be implemented if an awareness is present that it is not the efficient and target-oriented approach that is promising. Then, the very special moments of the daily routine arise almost by themselves – at least when viewed from the outside.

# Chapter 2
# What does WORK really mean? –
Extracts from publications

The way in which work is viewed in special publications about the workplace, especially in terms of creative activities in the office reflects an attitude that we need to take a closer look at in its function as the basis for our discussion about space for creativity and innovation. Some of the front covers of current specialist publications have been examined as well as a number of research studies and books. On the title pages, the catchphrases demonstrate in just a few words what is considered to be relevant. The choice of words used in the titles reveals the emphasis that is placed on the topic of the office workplace and reflects the general understanding of what it is.

Since 1981 the Fraunhofer Institute for Industrial Engineering (IAO) has focused its activities on the working environment and has played a leading role in an internal research project in the area of **non-territorial workspaces**. The Report 'Working Environments 4.0' attempts a forecast about '**How we will work and live tomorrow**' [16, p. 14]. Already at the beginning of the 1980s, the Fraunhofer IOA examined the fundamentals and effects of non-territorial working places in an internal research project that took place in Stuttgart. At that time, the institute did not find itself in a futuristic new building like today but in a standard office building with a standard office ground plan. There, a plan was tested in which the employees had a free choice of workplace combined with what was considered at that time to be an advanced IT infrastructure. On top of that, there were thoughts about additions to the workplace that were seen as necessary and also desirable and which would provide the employees with the feeling of not having to forego anything but rather of gaining something. I can well remember a room for relaxation and quietness in which there was a couch as well as the possibility of playing music and a choice of coloured lighting.