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## The Aesthetic Meaning of Syntactic, Semantic and Pragmatic Gestalt Integrations in Integrative Aesthetics

Design is widely identified with the shape of products, but this is not the general case but just a special case. We will need a much wider focus if we want to address *'transdisciplinary design'* (see Schwarzfischer 2010a, pp. 214ff). Very different Gestalt phenomena will be analysed, conceptualized and designed then, such as objects (e.g. products), meaning (e.g. communications) and actions as well as interactions (e.g. social systems or corporations). Already these few examples may show that we could use semiotic terms to make clear the different aspects which are in focus — *syntactics*, *semantics* and *pragmatics*. Traditional intradisciplinary design deals mainly with the *syntactical* composition of parts within a whole. This implicates an ideal design result, which claims validity for any user. Due to the fact that persons vary in time (within biographies or across fashion trends) and situational roles, we have to consider different ideals simultaneously. Hence, interdisciplinary design is capable of dealing with different *semantic* design problems, such as different codes used by different observers. As a result we have to design meaning against the background of other possible meanings. Only when including *pragmatics* and the genesis processes of desired values (preferred options) into design analysis, the resulting transdisciplinary design theory is capable of covering all kinds of Gestalt phenomena of a life form. Ecological as well as evolutionary perspectives suggest a strong relationship of economical resources, ethical value aspects and aesthetical preferences in a transdisciplinary design theory.

This theoretical background will be the starting point of a new approach towards an empirical aesthetics I call *'Integrative Aesthetics'* therefore. The minimal aim of this paper is the development of an aesthetics theory for transdisciplinary design. A ray of hope exceeds this modesty, which intends to fruitfully inspire the empirical research on Gestalt.

Gestalt theory will influence the terminology of this paper, and will also help to enhance the transdisciplinary comprehensibility of this approach. However, much more significant than the mere communicative benefit is the central position of Gestalt theory within this paper, which recommends starting there. For example, already Christian von Ehrenfels (1922, p.98) proposed that it was possible to build the whole aesthetics on the foundations of Gestalt theory: He assumed that the *level of configuration* (in German *'Gestalthöhe'* or *'Höhe der Gestalt'*) equals

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the beauty of a Gestalt. We will have to modify this quite static notion of Gestalt and complexity, in order not to miss the crucial point. Let us begin with the examination of an important feature of any Gestalt observation.

### 1. Gestalt as a Recoding Process with Relief of Resources

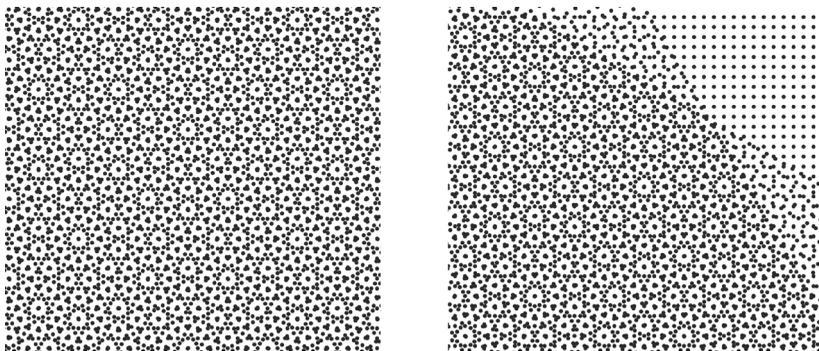
A classical controversy in Gestalt theory concerns the question, if a Gestalt is produced by the observer (what the *Graz school* suggested) or if Gestalten should be understood without a dualistic need for the "idea of extrasensory origin" (what the *Berlin school* advocated; e.g. see Koffka 1935, pp.559f). See Ash (1998, pp.139ff) for a more detailed discussion of this controversy, because this paper does not intend to solve those historical and philosophical problems. On the contrary, the heuristic and application-oriented perspectives will primarily serve as benchmarks.

So, assuming that any Gestalt can be understood as a dynamic perception process, then, the coding is changing during this process. Initially, we have the simple listing of sensory input data, which can be regarded as an *extensional coding*. (An extensional coding formulates its meaning by specifying its extension, that is, every object that falls under the definition: The result is a full listing of data, for example, the full listing of receptor input data.) Later, the input data are recoded into an *intensional coding* (which must not be confused with *intentional*). This *intensional coding* gives the extension of a Gestalt by specifying its relevant properties. Therefore, an *intensional coding* is 'algorithm-like', because this specification can be used to extrapolate the set of exemplars which are covered by own experience (e.g. to bridge occlusions or to identify similar cases of objects). As any observed pattern can be described by its regularities, it is possible to use a coding which specifies just these regularities. And this coding is what we call intensional and algorithm-like. Not all properties of the input data will enter the intensional Gestalt coding, but just the necessary ones. (The question of 'necessity for what?' meets always the pragmatics of the observer.) Hence, any Gestalt Integration is also a process of abstraction (see Schwarzfischer 2010a, pp.279f). This recoding process is already a kind of cognition, by which two basic advantages are enabled.

Firstly, as the intensional Gestalt coding is algorithm-like it can easily extrapolate the presented Gestalt. An extensional coding is limited to its explicitly listed data, but an intensional coding is not that restricted to a closed set. Secondly, it is mostly the case that the intensional algorithm-like coding produces a sparse code, which uses less resources than the extensional code (the full listing data). Due to this, the intensional coding works much more efficiently than the storage of a full listing of sensory data. Hence, a highly relevant relief of resources is a byproduct of the recoding process. Such a kind of relief of resources is called '*Cortical Relief*' by Kenning et al. (2002) as it releases neuronal resources. That text was very inspiring for the development of Integrative Aesthetics, although we did not simply adopt their assumptions and results.

In regard to our Integrative Aesthetics, the relief of resources is not a byproduct but a core concept. However, a second aspect has to be added: A kind of second-order observation is required that is capable of detecting that relief of resources. (This pre-attentional second order observation may not be confused with awareness.) Hence, our preliminary definition (which will be completed below) is: Any aesthetic experience is based on the observed relief of resources within the observing system, caused by a recoding process, which goes along with any Gestalt perception.

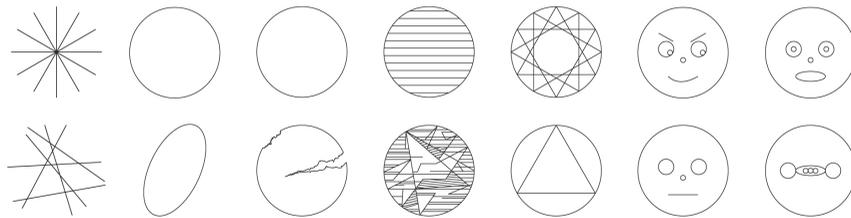
Many traditional and popular aesthetic theories interpret the topic of aesthetics rather static than dynamic. This misunderstanding is one of the main problems, not only of art theory. On the contrary, the *aesthetic experience* is no state, but a process itself. The resulting algorithm-like coding is not the aesthetic relevant object, only the recoding process. Therefore the resulting algorithm as an artefact is not that relevant—not even with respect to optimality, which is again thought too static widely (e.g. Weibel & Diebner 2001 or Redies 2007). This is true for many other approaches that are looking for the ‘*aesthetic measure*’ within the observed object, e.g. Birkhoff (1933), Eysenck (1942) or Palmer (1991). Just the moment of recoding is the point in time when the aesthetic experience happens. But what is an enduring aesthetic experience like music? According to our approach, music is a series of a huge number of single aesthetic experiences (which we call *Gestalt Integrations*), but not a state of aesthetic experience. A stimulus can induce a sequence of aesthetic experiences, but only when it is sufficiently complex, which allows the observer to focus on different detail-Gestalten. In this case we better speak of a *complex structure* rather than of a *singular Gestalt*. Finally, we can find several Gestalt Integrations in a ‘*multistable pattern*’ like that shown in figure 1.



**Fig. 1.** A *multistable pattern* (left), which consists of 3 dot grids, that are 30 degrees rotated each (right). However, phenomenally relevant is not the design principle as a *minimal code*, but the more rotational shapes of the observation. These rosettes are constructions of the observer within the perception process.

We cannot speak of *Gestalt* reasonably if we think of that figure's content as a whole (except the rectangle boundary). However, it is useful to call the content a *structure*, which is multistable and which is focussed by the observer, who is selecting one possible Gestalt at a time. This example shows clearly, how Gestalten are construed by the observer: Each circular Gestalt equals a specific pattern (which is a rotational symmetry in this case). Therefore, symmetries will be the methodical core of any quantification. But what are *symmetries* exactly? We should clarify this term in short, because the special case of mirror symmetry is very often confounded with the general principle. In general symmetries are defined as invariances: If a specific transformation leaves something invariant, we speak of *invariance* of that object against this specific transformation. In our context *symmetry* is used as a synonym for *invariance*. There are very different transformations which can be applied to various objects. Examples are mirror symmetry (invariance against specific reflections), rotational symmetry (invariance against specific rotations) or translation symmetry (invariance against specific translations). See Darvas (2006) or Weyl (1952) for more detail. Furthermore, it is important that symmetries must be considered as a continuous feature, in other words, we have to deal with invariance as a gradual phenomenon. In that view we can regard similarity as a gradual kind of symmetry, because the feature of identity (invariance) is substituted by the weaker term of similarity. Please note that both concepts can be quantified (Zabrodsky & Algom 1994).

Additionally, symmetries are analysed using the contradistinction of local and global symmetries (Zabrodsky et al. 1992). Objects are often symmetric at a specific scale, but asymmetric (or much less symmetric) at another scale. Figure 2 offers examples for this: If you look at the illustration of the *expressiveness principle* (second column from right), you will find mirror symmetry at larger scale in both versions. But, when exploring at a smaller scale, you will find asymmetry in the upper version. The illustration of the *integrity principle* in figure 2 (fifth column from right) may serve as another example. The rupture of the circle does affect the global rotational symmetry just a little. The circular shape with its rotational symmetry is still dominating. And also the abrasion at the upper left side of this circle is just an asymmetry at smaller scale. The larger scale symmetry is affected just relatively little.



**Fig. 2.** Seven principles of Gestalt Goodness (acc. to Rausch 1966, pp. 911ff): Lawfulness, independency, integrity, simplicity, richness of structure, expressiveness and meaningfulness. Upper row: Exemplars with pronounced aspects of each principle. Lower row: Variations with weak manifestations of those aspects.

Effectively we have to consider more than only two scales of symmetry measurement (global versus local). In doing so we could speak of *bandpass channels*, which is usual in visual research, when analysing *spatial frequencies*. There are separate brain areas for the processing of each frequency bandpass, but different studies suggest a different number of those bandpass channels. Wilson & Wilkinson (2004) propose that six bandpass channels should be sufficient for their specific stimuli, when writing on page 1061: *"It is nevertheless true, that these six suffice to encode all of the Spatial Frequency Information present in the stimulus; more than six channels would be redundant."* Again, this paper is not the place to decide this question, but the basic principle inspired a rather new research perspective. We defined symmetries as invariances against specific transformations. Therefore, the exchange of one bandpass channel with another is a very specific transformation. Hence, we can define a specific symmetry according to this transformation.

In doing so, we can completely formulate the *Gestalt Principles of Grouping* according to Metzger (2006) as different symmetries. Details and illustrated analyses to this issue will be found in Schwarzfischer (2012). Here we should just annotate that we have to consider different symmetries based on different transformations at different scales in order to analyse Gestalt phenomena comprehensively. A few examples of some *Gestalt Principles* rewritten as invariances may demonstrate the approach: *Law of Closure* (global symmetry is used to bridge local gaps), *Law of Similarity* (translation symmetry is used to group elements), *Law of Proximity* (output of the channels for low spatial frequency are used as gradual symmetry attractors, which form a global symmetry), *Law of Good Continuation* (global symmetries are used to derive local translation symmetries) and *Law of Common Fate* (global asymmetry between figure and background, but local translational symmetries within each).

It is also possible to translate the terms of Gestalt theory into the terminology of *Synergetics*, in order to facilitate quantitative research (see Haken & Stadler 1990 for details) — but with respect to our basis in a transdisciplinary design theory

and due to its practical applicability it is favourable to reduce the mathematical arsenal. Therefore the concept of invariances seems less abstract and sufficiently exact for analysing Gestalt phenomena in real world design problems, because there is mostly no need for a numeric '*aesthetic measure*' like Birkhoff's (1933) but for very tangible decisions in the sense of reasonable *preference aesthetics*.

Summing up, we can state that aesthetic experiences are the result of an evolutionary reinforcement of Gestalt Integrations, respectively the reinforcement of the relief of resources that any Gestalt Integration is accompanied by. These recoding processes can be analysed in terms of symmetries, which enable gradually quantifying research.

## 2. Semiotic Expansion of the Core Concept into Meaning of Action

So far, we addressed only stimulus inherent features, which we may call '*syntactical*' aspects, when using a semiotic terminology. However, there are other kinds of Gestalt Integrations, too. We may call them '*semantical*' and '*pragmatical*' *Gestalt Integrations*, because they also use other aspects, rather than the stimulus inherent *syntactical* ones. Due to reasons of space, we can illustrate these just with a few examples, in order to make the idea as clear as possible. Of course, there are several definitions of syntactics, semantics and pragmatics — moreover there are different schools of semiotics competing. Therefore we have to make clear which tradition of semiotic terminology we prefer to use here. As we want to deal with life forms in their environments it is not that useful to stick to linguistic approaches, because they tend to presuppose too much. More fruitful appears the very systematic and precise definition of Bischof (1998), who develops semiotics from an ethological and biocybernetical perspective. The crucial aspects seem to be compatible with the semantic conception in Škilters (2011), who quotes on page 169:

"Meaning 'consists of the set of actions the individual can undertake in that situation. The set of actions is determined by the goal-directed mesh of affordances' (Glenberg, Jaworski, Rischal, Levin, 2007, 223). However, there is no abstract but only a concrete individual who modifies the meaning articulation in a particular situation according to his or her experience."

Semantic Gestalt Integrations may consist of individual exemplars (as constituting elements), which are aggregated into a term or a category (as the emerging Gestalt). At another scale we can consider the sentence as a Gestalt, which allows using other words without destroying the meaning of the sentence (see Škilters 2008 or Škilters 2011 for more detail). This may proceed within the original language or by translation to another languages or other codes — due to the principle of transposability. Vukovich (1999) presents a comprehensive collection of symmetries within language, between sign world and life world as

well as relations between author, text and reader. Of course, semantics is not limited to linguistic structures. An example may illustrate this: In baroque palaces we will find in many cases paintings of classical mythology. One such painting can be easily replaced by another motive of the classical mythology, without changing the meaning of the palace as a whole. In general, we can state that meaningfulness is contributing to aesthetic experience (see e.g. Martindale 2007, p.188). Ambiguity is well-liked in art and poetry, because it provides more options of Gestalt Integration by multiple associations and connotations (see Kruse & Stadler 1995).

The pragmatic dimension is the most neglected field of aesthetic theory tradition, although especially pragmatics is central for any empirical theory. Bischof (1998, p.321) emphasizes, that only pragmatics can provide empirical reasoning for the correspondence rules of semantics and syntactics. Hence, any science has to deliberate its pragmatics carefully in order to decide if it is an empirical science or an axiomatic one. In our opinion, the core of pragmatics is located within the process of selection, which accompanies any observation (as any observation is an action). The selections of the point of view, the direction of view, the observed parameters and their spectrum, the used categorial differentiations, the level of detail, etc. etc. etc. — all these are pragmatic selections, even if the observer is not aware of all and not all selections can be chosen at will (due to evolutionary, bodily, cultural or psychic restrictions).

Pragmatic Gestalt Integrations, for example, may consist of discrete actions (as constituting elements), which are seen together in an action sequence (a so-called '*script*' as the emerging Gestalt). Obviously, pragmatic Gestalt Integration provides a corresponding relief of resources — like the syntactic or semantic ones. Another example may be the habit of specific contextualizations (as they are used in a '*hermeneutic*' to interpret the world). In an evolutionary perspective the most important pragmatic Gestalt Integration probably will be the synchronisation of behaviour with its obvious relief for the individual. For process Gestalten see Tschacher (1997) or Haken & Stadler (1990) as well as Bischof (1990).

In total, aesthetic experiences are induced by Gestalt Integration processes, which recode syntactic, semantic or pragmatic elements to Gestalten. And, of course, any combination between these categories will be found too. Hence, there will be competing Gestalten, which will be our topic below.

### 3. Gestalt Qualities and the Semiotic Dimensions

Sometimes the term '*Prägnanz*' is used to label a Gestalt which has somehow outstanding quality. This is problematic, because there are three different kinds of Gestalt qualities, which are often confounded (see Hüppe 1984, pp 24, or Rausch 1966, pp 911 for details): The *goodness* of a *single Gestalt* (stability or

pithiness of a form — in German 'Gestaltreinheit' or 'Prägnanz') does not match the *richness* of a *structure* (multistability or level of complexity of a structure — in German 'Gestalthöhe'). And both are different from the *fullness of meaning and expression* (evocativeness of a Gestalt or a structure — in German 'Gestalttiefe'). It is confusing to name all these qualities with the term 'Prägnanz' because in German it originally covers just the aspect of pithiness. Furthermore it is advantageous to consider the size of a Gestalt or structure (in relation to the observer, for example using an angle measure like 'cycles per degree' as used in spatial frequency analysis). It may be recommendable to use the term 'Gestalt' preferably only for singular shapes (which are not composite) and to use the term 'structure' for composite shapes. Of course, both can interfere, e.g. if we think of the different bandpass channels: A word can be interpreted as a composite structure of letters (as little children learn to read) or it can be observed as a singular outline Gestalt of the word as whole (what the advanced reader does). Hence, the pithiness of syntactical Gestalten is more or less a geometrical aspect. However, the semantic Gestalten emerge from the relational interdependency of the observer and the observed scene. That can be related to different semantic codes, such as biological, cultural or individual codes. Therefore, the aspects of expressiveness or fullness of meaning (the aspects of 'Gestalttiefe') will differ for diverse observers due to their socialization and experience. Note that the diversity of observers can easily be described in terms of symmetry: Is it possible to exchange the observing individual with another (transformation) without changing the observed meaning or expression (invariance)? The analysis of pragmatic Gestalten currently seems rather undertheorized, but the methodical approach is analogous.

Whenever concerning syntactic, semantic or pragmatic Gestalt Integrations, we have to realize, that ambiguity and multistability come up with the conflict of pithiness. The more different interpretations in a structure can be observed at the same time, the lower will be the pithiness of every single Gestalt (low 'Prägnanz'). This is a necessary feature, because any symmetry can be interpreted itself as a kind of redundancy — and different symmetries will compete in many cases (e.g. rotational symmetry and translational symmetry). And, of course, semiotic Gestalt phenomena at very different scales may be the case simultaneously. The resulting semiotic space is a rather complex one with a multitude of scales and dimensions.

Finally, the German philosopher Immanuel Kant demanded 'disinterested pleasure' as a premise for beauty (in his *Kritik der Urteilskraft*, 1790). However, that seems to be 'a posteriori' in an evolutionary perspective. Because the pleasure is disinterested only for this individual and at this moment only, but functional for the species as well as the further development of that individual (see Schwarzfischer 2010b).

#### 4. Destruction as a Problem of Competing Levels

Schwarzfischer (2008) defined *Gestalt Integration* as the sudden increase of *Goodness of Gestalt* (either by observing an existing form or by actively producing a new form), which can be the increase of *Prägnanz* (*purity of Gestalt* resp. '*Gestaltreinheit*') and/or complexity (*level of Gestalt* resp. '*Gestalthöhe*') and/or relevance (*meaning of Gestalt* resp. '*Gestalttiefe*'). Again, the latter two may be interpreted as a sequence of single Gestalt observations in time. That sequence elongates the aesthetic experience by using a series of single Gestalt Integrations (plus the structure itself as a '*meta-Gestalt*', which can be integrated additionally). However, the other case is also possible, when an existing Gestalt is dynamic in its Gestalt qualities.

In these terms we can define destruction ('*Gestalt Disintegration*') as sudden decrease of *Prägnanz* ('*Gestaltreinheit*') and/or complexity ('*Gestalthöhe*') and/or relevance ('*Gestalttiefe*') — and, on the other hand, it comes along with a rising demand of resources by encoding the phenomenon. The contrasting depiction of high and low degree of different Gestalt factors in figure 2 illustrates this idea. We include syntactic, semantic or pragmatic Gestalten, which in aesthetic research may occur at very different scales and in various dimensions (such as time and space, as well as perception and cognition, as well as various individual or social dimensions). According to Koffka (1935, pp 347) we have to differentiate between the *geographical environment* and the *behavioural environment*, in order to understand aesthetic problems. Due to dealing with all kinds of Gestalt Integrations (syntactic, semantic and pragmatic ones) we will have to distinguish also between perception (*presentational space*) and memory based cognition (*representational space*), as Grush (1999) annotates. Hence, we get different domains that are capable of serving as a medium within which Gestalt Integration can occur. Therefore it is not sufficient to analyse an object in *presentational space* (e.g. an artwork, an architecture, a text or a design object).

Conflicts cannot be avoided, when an individual's wish and a social norm are colliding or when a social habit (as a pragmatic Gestalt in a family, for example) collides with the development of the adolescent (who will more and more focus his own autonomy). Especially the sometime destructive behaviour of youth or of contemporary artists could not yet be explained within aesthetic theories. However, Integrative Aesthetics is able to deal with these phenomena if we analyse the aesthetics of an environment as a multi-level system with plenty of dimensions.

For illustration, an example of competing Gestalt phenomena: Why do many people like vintage cars, especially if the former owner is of some prominence, even if the value in use of this vintage car is much less than that of a contemporary car? Why would many people feel blessed if they owned the wreck James Dean

crashed with? A damaged Gestalt (syntactical aspects) may induce another Gestalt Integration, because a story becomes observable (semantical Gestalt), which may facilitate the active positioning within a party smalltalk (pragmatical Gestalt). In this case, the decreased syntactic Gestalt is less important to the observing system (the human) than the increasing semantic and pragmatic Gestalten together.

In sum, the balance of accounts of an aesthetic experience has to add up the positive and the negative results of all dimensions, which the situation consists of and to which the scene is related to — presentational and representational ones as well as atmospheric-unconscious and self-aware ones.

### 5. Piaget's Decentering as an Essential Aspect of Aesthetics

In order to understand aesthetic experiences completely, we have to introduce Jean Piaget's (1970) concept of '*Decentering*', which is of rather universal character, but which differs quite strongly from the *centering* concept by Gestalt theory (see e.g. chapter 5 in Metzger 1954/2001). Some rivalry might have been based on the constructivist attitude of Piaget which was closer on the *Graz school* than on the *Berlin school* of Gestalt theory. Again, this is not the place to decide this question (see Toccafondi 2002 for more details).

Additionally to the relief of resources, any Gestalt Integration widens the scope of validity of an actual case up to similar possible cases. Hence, any Gestalt perception has aspects of Piaget's '*decentering*' (also called '*decentration*'). Originally the term *decentration* is complementary to the term *concentration*, which denotes the focussing of a single aspect with limitation on it and without awareness of this limitation. In 'Integrative Aesthetics' we will use the concept more generally in the sense of '*extending the range of validity*' from an accidentally actual perception (as a special case) to related possible cases (the general principle, e.g. the algorithm-like encoding). We can easily see, that any Gestalt perception is already decentering. Just think about the well-known example of partial gestalt occlusion: Even if a part of a shape (e.g. a plate) is not visible due to occlusion (e.g. when a fork covers a segment of the plate's contour), we have no problem bridging the gap. This illustrates very simply the decentration, that happens by the perceptual understanding, which takes place in the moment of Gestalt Integration. The example-plate is no longer an extensive listing of receptor pixels but a very compact algorithm of its circular shape. This can be easily extrapolated to describe cases which are not covered by experience or perception and, of course, this already shows up the relevance for actions in a habitat of a life form, where it is essential to apply an action script to formerly unknown scenes or situations (as the transposition of a pragmatical Gestalt).

In general, any decentering means the changing of an observation mode, accompanied by a second-order observation, which realizes that '*extending the*

*range of validity.* We must keep in mind that neither the decentering nor the decoding process is usually conscious. Therefore ‘*second-order observation*’ must not to be confused with ‘*awareness*’. Aesthetic experiences of different systemic and semiotic dimensions are the subject’s view of these processes.

The view from outside may appear rather different in several cases — especially in cases of destruction. Gestalt Disintegration can happen intentionally, not only by youth or progressive artists, but also in everyday life as well as in animal behaviour. The destruction of any physical, mental or social object can be considered as a Gestalt Disintegration. On the surface, we see that an object becomes damaged or destroyed. But a profound analysis reveals that there is another effect at the same time on another system level: For example, if an adolescent degrades the familiar social Gestalt of his own family, then we have to look for the complementing process, where he is processing a Gestalt Integration. It may be his experience of autonomy and action competence in many cases is the focus. Any observer is necessarily focussing a narrow selection of possible observations, but it is not entirely coincidental which focus he processes and prefers. Similar is the case of a progressive artist, who may be executing animals for an art event, what corresponds clearly with a rough Gestalt Disintegration. However, he might wish to point at the possibility of avoiding cruelty at all, when thinking about this confrontation.

In comparison, the approach of ‘*Processing Fluency*’ (Reber et al. 2004) was interesting, but did not really explain what an aesthetic experience is, nor triggered an access to destructive, complex or conflicting situations. (‘*Processing Fluency*’ denotes the ease with which information is processed in the mind.) The main problem with *Processing Fluency* is therefore similar to that with Birkhoff (1933), according to whom we should rate the most simple shapes best in aesthetic quality. This is obviously not the case — laymen especially love ornaments.

Another approach seems to be compatible with our Integrative Aesthetics: The ‘*Zürich Model of Social Motivation*’ developed by Norbert Bischof (1990, pp. 374f) is constructed around the central motivational construct, called ‘*autonomy claim*’, which refers to a person’s demand to extend his sphere of influence. This can be identified clearly with our tendency towards decentering — even when we extend that towards preattentional perception issues.

Note, we will find just different reference Gestalten, all of them have to be included into our analysis, in order to make sense out of any scene. Any destruction has to be interpreted as a hint that there is a further Gestalt at another system level, which is more relevant to the agent: We have to reconstruct this active framing of the observing system.

## 6. Maximizing the Aesthetic Experience

If the proposed approach of Gestalt Integration is right, then we have to prefer more Gestalt to puristic alternatives. Let's take an example from architecture: The history of architecture shows the other direction, e.g. from richly decorated Renaissance buildings to pure cubic modernism. How can we understand this? The decreasing amount of Gestalten in the syntactic dimensions are compensated within the semantic and pragmatic factors: The meaning of any shape has to be analysed in the context of its appearance. In the 1910's there was no such pure form like a cube in the urban landscape. A radical shape had to affect strongly like a diamond, but this is not only due to its minimal probability which would be just a syntactic feature. The pragmatic power corresponds to the decentering aspect: The negation of the tradition denotes a strong emancipation of the architect (and the maybe democratic owner of the building as well, who may want to show that he disagrees with the belief in authority of former times, which the ornamental architecture stood for as a symbol). This highly increases the self-observed Goodness of Gestalt (his autonomous identity as an individual). So, this apparent loss of syntactic structure is a reinforcement of semantic and pragmatic Gestalt.

The Gestalt Integrations in different dimensions can interfere positively or negatively. They might sum up in a specific case, but compete in other cases. The sum might be zero or even negative. Different disciplines are involved with the aim of optimization and maximization of aesthetic experiences — even if they might use rather different terms due to an incidentally arisen terminology of each discipline (e.g. design, management, politics or the therapy of social systems). Therefore, a transdisciplinary design theory has to offer a framework which is capable of solving these problems productively (Schwarzfischer 2010a: pp.247ff). We have to keep in mind that the pragmatic dimensions ordinarily dominate the semantic and syntactic ones. For design purposes it is therefore advisable to start with the analysis of the pragmatic Gestalten in order to maximize those.

In regard to the strictly limited space of this paper, it is just possible to outline the problem of maximizing the aesthetic experiences. (1) Only observed Gestalt will induce the recoding process called Gestalt Integration. Hence, only actually observed Gestalt is aesthetically relevant (see Luebke et al. 2003). (2) In order to maximize these, we will have to superimpose different Gestalten which together will become a structure. (3) This structure cannot become infinitely complex, because otherwise the pithiness will become too bad. Therefore, we can add syntactical Gestalt just until we reach that threshold, which is determined by the observing system's own configuration (maximal resolution and level of detail of the observing system). (4) As syntactical Gestalt can be considered as being a kind of symmetry, we can use the principle of '*Hierarchical Symmetries*'. This is well-known in architecture, where the structured composition of a building complex as a whole has both high pithiness and remarkable complexity (e.g. a Renaissance

palace). However, every detail-complex has a similar relation of pithiness and complexity again, just at a smaller scale. In general, we could interpret this as spatially bandpass-filtered sections of reality. (5) Of course, we can bandpass-filter and optimize each resulting bandpass sections in any dimension, not only in spatial ones. (6) Moreover, we can add semantic Gestalten, which may diverge from the syntactic structure stepwise. For example, we sense biological codes such as the shape of plants more directly (within the presentational space) than specific subcultural codes such as specialized terminology (which will be processed within the representational space). (7) Each of those explicit denotative or implicit connotative steps may be seen as some kind of semantic bandpasses again. The degree of abstraction, the ages in history, the used sign systems or other parameters may serve as the dimensions that are cut into bandpass semantics. (8) The same applies for pragmatical Gestalten and structures, analogously. They appear in very different scales and dimensions, too. (9) The previous conflict of *aesthetics of production* and *aesthetics of reception* can be solved within Integrative Aesthetics, because any production process is in its core already a reception process due to the agent who is perceptually controlling his or her actions. Additionally, the pragmatical Gestalten (those which are actively produced as well as those already existing ones the agent is encountering) are probably always the most important ones for any observing system, as we tried to show in the examples ('modernistic architecture' in chapter 6 as well as 'James Dean's crashed car' in chapter 4).

## 7. Measurement of a Continuous Stream of Gestalt Integrations

An advantage of the framework presented here is the methodical progress. Now we can examine aesthetic phenomena from two very different points of view: Either we will survey subjective aesthetic experiences or we will start from the potential of decentering. The latter has extensive consequences, because it is possible to extend the analysis to fields, which are new to aesthetic research but nevertheless important for the hedonic research. (Hedonic research is the study of what makes experiences and life pleasant or unpleasant). It seems odd, but it is just unusual to use aesthetic terms or theories to describe social phenomena or institutions. Integrative Aesthetics is capable of dealing with the full range of hedonic relevant phenomena within one theoretical framework, we may get high profit by this approach.

Importantly, we have to realize the *constructivist* nature of the approach. We do not analyse transphenomenal objects, but observations as recoding processes. Hence, we have to keep in mind the perceptual, cognitive and socio-cultural sensitivities. The perceived goodness of Gestalt (Gestalt qualities) will be the main parameter of research. Whereas, we have to differentiate between the pithiness of Gestalt (*Prägnanz*) and the semiotic richness of structure. Both can be described and analysed by using the concept of symmetries (invariances) if we take the

situational disparity of local versus global symmetries into account. Under a specific condition global symmetries will become local ones—and vice versa (e.g. when changing the distance to the scene, the focus or the resolution of an image). It is fully impossible to list all the single methods and their specific parameters and research problems as the field of system-semiotic observations is extremely copious and diverse. But the idea of Gestalt Integration may work as a fruitful heuristic for aesthetic research and for design practice — at least. Any Gestalt phenomena can be analysed with regard of their decentering power, their frequency of usage, their mental priority and other aspects.

As a provisional result we can hold that aesthetic research has to reconstruct the observing system in its observing possibilities and habits. The core parameters for measurement are pithiness of Gestalt as well as structural complexity at all available scales and semiotic dimensions, using local and global symmetries.

### **8. Design as Therapy of Observations via Integrative Aesthetics**

The aim of a universal design theory is not at all restricted to shaping nice products nor the optimization of the advertising for them. It meets the comprehensive environment of the individual and the society as a whole.

More than 2400 years ago, the problem was defined in *'Hippias Major'* of Plato: What is beauty itself — beyond the simple listing of objects, which are attributed as having beauty? What is common to any aesthetic experience? We all know examples of aesthetic experiences, but we are still unable to predict them. This is the core of the problem, both in aesthetics and design theory. In terms of Piaget & Garcia (1989, p 28) there are three stages in every scientific development:

*"It seems to us likewise of a very general nature: it is a mechanism that leads from intra-object (object analysis) to inter-object (analyzing relations or transformations) to trans-object (building of structures) levels of analysis."*

A scientific theory needs to have explanatory power instead of just describing the phenomena. That will be found only at the third stage *'trans'*. Hence, the aim of this paper was to propose an approach to empirical aesthetics, which is capable of both analysis and prognosis (which again is the basis for falsification as well as for design synthesis). This framework of a trans-disciplinary design theory includes general problems of resources (economy), observations (aisthesis) and preferable interventions (ethics), due to the definition in Schwarzfischer (2010a, pp.148f.), which identifies design and therapy as interventions which require a sub-optimal reality. Otherwise neither design nor therapy is of any sense, because both intend to enhance (or even to maximize) hedonic well-being which we can regard as the sum of syntactical, semantical and pragmatological Gestalt integrations, each Gestalt weighted with its specific factor of relevance.

In sum, the theory of Integrated Aesthetics provides evident design strategies for both analysis and planning. Its framework enables the designer to understand and simulate any observing system with its physical, cognitive and cultural possibilities and restrictions. (The nature of an observing system is not limited to humans or mammals.)

Finally, to maximize aesthetic experience we can modify objects (what traditional intra-disciplinary design is doing), we can alter the observing system (what traditional therapy or education are trying) or we can manipulate the hermeneutics and the observing schemata (what politics and propaganda are working on).

### 9. A Short Conclusion

We hope that the essential line of reasoning could become visible although this essay is probably too brief. Does the presented theoretical framework of Integrative Aesthetics seem capable of explaining what an *'aesthetic experience'* is at all? Indeed, we think so: (1) The markedly temporal view at the recoding process with its release of resources is the core of any aesthetic experience. (2) The accompanying effect of decentering offers a new methodical approach, due to its own observability and measurability. (3) The so-called Gestalt Integration emerges within the observed presentational space (what we named syntactical Gestalten), but also within the representational space and between both of them (what is submitting semantical and pragmatistical Gestalten). (4) As any observation has to be regarded as an action by an observing system (mostly an organism) we have to assume pragmatic aspects in any observation (because any observation presupposes selections, the usage of specific differentiations, implicit values, etc. — even if processed without awareness). (5) Depending on the specific life form, the goal-directed behaviour, the situation and further factors, we will find that different Gestalten will have various weightings. As a rule we may expect that pragmatistical Gestalten will be more relevant than semantical Gestalten, and again, semantical Gestalten will be more relevant than syntactical Gestalten. Hence, mostly the presentational space will be less relevant than the representational space. This explains why all the object focussing approaches in aesthetics are not sufficient. (6) The Goodness of Gestalt (with its sub-factors of pithiness, multistability, expressiveness and meaningfulness) is in principle the basis for research analysis and application in design, but it has to be complemented by the integration of semantics and pragmatics. (7) Symmetries (in the sense of invariances) can be used for gradually and precisely describing any Gestalt phenomenon. This opens new possibilities of quantification within a relatively homogeneous approach.

## Summary

This paper presents a new approach towards an empirical theory, which seems capable of explaining what an 'aesthetic experience' is at all: 'Integrative Aesthetics' is based on the relief of neuronal resources in the process of 'Gestalt Integration', when the perceptual data are re-coded (from *extensional* to *intensional coding*). The algorithm-like Gestalt coding requires less neuronal resources, due to its much more efficient code and it widens the scope of validity of an actual case up to similar possible cases. Hence, any Gestalt perception has aspects of Piaget's '*Decentering*'.

This allows us to describe and to explain both positive aesthetic experiences and negative destructive acts: We can analyse aesthetic experiences without limitations to fine art. Destruction (*Gestalt Disintegration*) on one level is always conducted by integration at another level, which seems more relevant to the actor, due to its decentering power.

Measurements will be several symmetries, because any Gestalt can be defined in terms of symmetries (invariances) — and those can be measured gradually. Stimulus inherent features (syntactics) are used as well as semantics (individual and cultural) and pragmatic relevant Gestalten (e.g. action scripts). Analysis utilises pithiness and goodness (which are frequently confounded). Decentering can be measured itself, what offers an additional paradigm within this framework. The presented approach of '*Integrative Aesthetics*' is instructive for the understanding of the contradicting '*richness of the stimulus*' and the preference for '*processing fluency*'.

It is not possible to increase aesthetic experiences infinitely, due to the fact that both richness of structure (multistability of focus) and perceptual fluency (pithiness of Gestalt) require a sufficient signal-to-noise ratio.

**Keywords:** Relational Aesthetics, Gestalt Theory, Relief of Resources, Decentering, Symmetries, Semiotics.

## Zusammenfassung

Dieser Beitrag präsentiert einen neuen Ansatz einer Empirischen Ästhetik, der geeignet erscheint zu erklären, was eine 'ästhetische Erfahrung' überhaupt ist: 'Integrative Ästhetik' basiert auf der 'neuronalen Entlastung', die jede Gestalt-Integration begleitet, da die sensorischen Daten re-codiert werden (von *extensionaler* zu *intensionaler Codierung*). Der algorithmus-ähnliche Code von Gestalt benötigt weit weniger neuronale Ressourcen, da die 12 Messgrößen sind diverse, graduelle Symmetrien (Invarianzen), da jede Gestalt in Begriffen von Symmetrien beschrieben werden kann. Stimulus-inhärente Gestalten (Syntaktik) werden ebenso verwendet wie semantische Gestalten (individuell und kulturell gewichtet) sowie pragmatische Gestalten (z.B. Handlungs-Skripte). Die Analyse wertet Prägnanz und Gestalt-Güte (die häufig verwechselt werden) aus. Auch die Dezentrierung selbst kann gemessen werden, woraus ein zusätzliches Paradigma innerhalb dieses Theorierahmens folgt. Aufschlussreich ist der Ansatz der '*Integrativen Ästhetik*' auch für das Verständnis der widersprüchlichen Vorliebe für reichhaltige Stimulus-Strukturen und der '*Processing Fluency*'.

Ästhetische Erfahrungen können nicht unendlich gesteigert werden, da sowohl der Struktur-Reichtum (multistabiler Fokus) als auch die Wahrnehmungs-Effizienz (Gestalt-Prägnanz) ausreichende Signal-Rausch-Abstände brauchen.

**Schlüsselwörter:** Relationale Ästhetik, Gestalttheorie, Ressourcen-Entlastung, Dezentrierung, Symmetrien, Semiotik.

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