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IN MEMORY – MINNEORD

In memory of our friend, the lecturer, scientist and president

Lena Villner

Lena passed away on Saturday 19 September 2009 after a short illness. Lena was a university lecturer of architectural history at the KTH School of Architecture and took an active interest in several areas, including teaching, research, administration and public activities. In 1997, Lena defended her dissertation about Tempelman, which was as interesting as it was liberating in its ease of reading. In 2005, her academic career brought her to the position of director of graduate studies. In 2008, she became a reader in architectural history. We will remember Lena in particular for her strong commitment to the journal on Nordic architectural research, Nordisk Arkitekturforskning, and for her hard work for the association. Lena was a knowledgeable and highly respected member of the supervisory board, and in the period 2002-2004, she served as president of the association Nordisk Arkitekturforskning. Lena will be sadly missed by us all.

Vännen, läraren, forskaren och presidenten

Lena Villner

Lena lämnade oss lördagen den 19 september 2009 efter en kortare tids sjukdom. Lena var universitetslärare i arkitekturhistoria vid KTHs Arkiekturskola och aktiv inom flera områden: utbildning, forskning, administration och utåtriktad verksamhet. 1997 disputerade Lena på en intressant och befriande lättläst avhandling om Tempelman. Hennes akademiska karriär fortsätt 2005 med uppdrag som studierektor för forskarutbildningen. 2008 blev hon docent i arkitekturhistoria. Vi minns särskilt Lenas starka engagemang för tidskriften Nordisk Arkitekturforskning och hennes arbete i föreningen. Lena var en kunnig och respekterad medlem av styrelsen och under perioden 2002-2004 var hon president i föreningen Nordisk Arkitekturforskning. Det är med stor sorg och saknad som vi minns Lena.

Architectural Competitions

Empirical Observations and Strategic Implications for Architectural Firms

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Abstract:

This paper explores architectural competitions as processes of participation and choice. The participation of architectural teams involves a choice of reading the competition brief for *instructions, indications or inspirations*. The participation of the competition jury involves a choice of reading design proposals positively or negatively. Both sets of choice rely more on judgment than on calculation. An integral part of making these choices is the definition and selection of criteria on which choice can be made.
For architectural teams winning a competition is a chance event, because the judgments they must make in preparing the entry may all equally well become the cause of success and the cause of failure. The subsequent choice of the jury will determine the soundness of the judgments. If winning is a chance event there is little room for strategic thinking. On the other hand, such awareness creates the freedom for architectural teams to choose between reading competition briefs for instructions, indications or inspirations for other reasons than winning competitions. By analyzing the results of a simulation of repeated competitions between different strategies it is found that the value of wins that are won by chance may systematically be related to competition strategies.

Keywords:
Field studies, judgments, simulation models, luck, competition strategies

"[Successes] are not tryings, but things got by trying or luck" (Ryle 1949/2000) p. 144.

Introduction: The role of chance

Architectural competitions represent important and complex social institutions in modern society. From society's point of view they belong among the legitimate mechanisms for allocating work efficiently and fairly and for stimulating effort and creativity. From clients' point of view they are ways of producing variety in the pool of alternative built environments from which solutions can be drawn. From architectural firms' point of view they are opportunities for gaining work, fame and future income – and occasions for exercising and celebrating creative and aesthetic skills.

The intricacies of the architectural competition *as a process and procedure* have somehow escaped attention, however. Specific design proposals, and the specific results of architectural competitions, have sometimes been widely published, reviewed, and discussed, but the ways of preparing such proposals and of selecting the winner have more or less been taken for granted. Capabilities and competition rules are assumed to explain the individual and collective outcomes and the mere suggestion that the selection of the winner involves more than just an objective comparison of achievements on well-established criteria raises fears that the competition be unfair and biased. Such fears risk undermining trust in the legitimacy of the architectural competition as social institution.

As soon as we start to reflect on the nature of architectural competitions we come to realize that *making judgments* is an integral part of the competition process. The competition brief defines a severely under-determined task, and in making sense of it the architectural teams supplement the brief with a host of additional design premises and inferences about the intentions of the client, the needs of the users, the architectural preferences of the jury, etc. On their part the juries face an over-determined task of selecting only one winner among the design proposals that differ on multiple dimensions and criteria. The jury members make individual and collective judgments concerning the intentions and potentiality of the individual proposals which also imply the selection and prioritizing of criteria on which the winning proposal excels. Thus, judgments being an integral part of architectural competitions we cannot claim to understand them unless we understand how judgments are made and how they are legitimized.

My first aim in this paper is to account for the role and exercise of judgments in relation to architectural competitions. Conceptually, judgment will normally imply the arrival at *reasonable* conclusions. A rational conclusion would be calculable from pre-established premises, but in our case such premises do not exist. Therefore, making judgment entails the concurrent choice of premises and conclusions. The conclusion is reasonable to the extent that it can be meaningfully justified on legitimate premises without being derived from them. Premises and conclusions are co-produced in the process of making judgment. But it is also implied that multiple combinations of premises and conclusions might have been engineered, and that judgments may subsequently be rendered incorrect, biased, or random by subsequent events.

My account of the co-production of premises and conclusions in architectural competitions will build on an extensive empirical study of competing architectural teams as well as of the jury. The fallible character of judgment will become evident in the sense that only the winning entry will not in some respect become mistaken by the subsequent decision of the jury. The contingent character of judgment is established by accounting for some of the multiple alternative combinations of design premises and conclusions that might as well have emerged, but happened not to emerge on this occasion.

The history of architectural competitions is littered with failures, because on every occasion there is only one winner and many more losers. Apparently, there is ample opportunity to learn from failure. You may learn from losing that you made an erroneous judgment on one or more aspects of the competition, but it would be a vacuous conclusion for the future that you should take care to make only correct judgments. Being correct is not a quality of the judgment but of the situation that prevails after the judgment was made. No matter what, those situations only allow the winner to have his or her judgments corroborated by the result of the competition. It would also be a vacuous conclusion that judgments should be replaced by evidence, because such evidence cannot exist at the time when design premises

have to be chosen by the architectural teams. Without design premises it would be impossible to produce an entry, but whatever premises the architectural team chooses they will be rendered right or wrong by the jury's subsequent decision. Any design feature that originates from such chosen premises may equally well become the reason for selecting or for disqualifying the design proposal. Since the selection of a winner entails judgment on the part of the jury, criteria do not exist a priori to be known, revealed or inferred by the architectural teams. Thus, from the point of view of the architectural team aiming at winning the competition a sense of taking part in a gamble would be justified even if such a sense is probably not common. In practice, the randomness of the outcome is construed as a failure to foresee the true premises or, in the words of one of the architects, "to have pressed the wrong buttons". Based on our empirical observations, no right or wrong buttons exist to be pressed. There are only buttons that are made right or wrong after having been pressed.

Randomness as an idea is shunned because it is believed to spur fatalism and relativism. If it is not possible to predict the consequences of one's action the basis for behavioural choices seems to erode. If consequences are random, one action is as good as any other action. However, these implications do not necessarily hold. Even when it is impossible to predict what one will get, it is not necessarily inconsequential what one tries to achieve, i.e. what strategies are pursued. Strategies are not necessarily equally good even if none of them will predict the outcomes in any specific context. But to distinguish between strategies we have to imagine a very large number of competitions from which certain patterns may be recognized. Since we can only hope to observe a few competitions the large sample must be produced "artificially". This is possible to do in the form of a simulation model. The vision is to be able to characterize the observed phenomenon not in terms of evidence (that it indeed happened) but in terms of probabilities, odds etc.

Imagine that whatever is observed to happen represents a draw from a probability distribution over a range of possible outcomes. Alternative strategies shape the probability distribution and delimit the range of possible outcomes in distinct ways that are not necessarily similarly appreciated – even if they are equally bad in predicting the result of the architectural competitions at the level of individual and aggregate outcomes.

My second aim is to explore alternative competitive strategies and to suggest criteria on which they differ. If such criteria can be found they can be made subject to conscious (rational) choice. No strategy will change the fact that for each competition you will have only one winner and many more non-winners. But the many ways of winning, and the many more ways of losing, may not all be of equal value and attractiveness.

Plan of the paper:
The paper is divided into three parts. The first part covers the methodology of the research. I will reflect on the non-intuitive use of ethnographic data in building simulation models. Normally ethnographic case studies are charged with the task of explaining what actually happened with reference to the specifics of the context. A successful explanation will convince us that *what happened had to happen,* given the circumstances. Simulation models assume a large role for chance and randomness, to the extent that other things than what actually happened might just as well have happened. The focus is on understanding the range of things that might happen and to define some probability distribution over this range of possible outcomes. Thus, to link our ethnographic study to the simulation model we re-interpret the data, not to inform us of what happened and why, but to sensitize us to the things that did not happen, but might have happened, and will probably happen in the future.

The second part covers the empirical evidence and the interpretation of all the points of bifurcation that the process contained. Most of the empirical data are published elsewhere, and here I will only give a few illustrations of the types of judgment which architectural teams and juries are making in the process of conducting a competition. The discussion concludes by suggesting alternative sets of strategies that architects might pursue, strategies that might influence the ways in which judgments are exercised and rationalized.

The third part is creating a simulation model on premises largely derived from the empirical study. Running the simulation produces a wealth of results of the comparative aggregate performance of architectural teams which are

pursuing different strategies. The results are analyzed to show that on other criteria than winning some strategies are systematically better than other strategies. Winning is a chance-event, but the situation in which you likely find yourself, should you be lucky to win the competition, is not unaffected by your choice of strategy. Thus, an argument for strategic choices can be made in spite of the randomness of the competition.

Methodology:

Data.

This paper builds on empirical data and analyses published elsewhere (Kreiner 2005; Kreiner 2006; Kreiner 2007; Kreiner 2007). The centrepiece is a detailed case study of a particular architectural competition.

Data were collected in a number of ways. First, in preparation for the case study, and to sensitize us to technologies and practices of doing architectural design, we conducted a full ethnographic study of a competition team in an architectural firm. It pointed us towards important issues, such as the negotiated authority of the competition brief, the construction of the client and the jury, and the definition of Archimedean points for the design (Kreiner 2005) – issues that were subsequently pursued in the interviews with the architectural firms in our case study.

Secondly, we conducted participatory observations of the jury of the competition being studied. The author being a regular member of the jury, full access to all documents and all negotiations were ensured. The first-hand experience of the jury at work allowed a rich reading of the official documents. Especially the ambiguity of the competition brief and the assessment report became visible in the deliberations of the jury.

Thirdly, subsequent to the announcement of the competition result we interviewed three of eight architectural firms participating in the competition. Interviews were semi-structured and were aimed at getting the participants to reconstruct their design process, but also to have them self-assess their entry ex post facto and to evaluate the result of the competition. We interviewed the winning team and by implication two losing teams. All interviews were tape-recorded and fully transcribed. The CEO and another partner from each architectural firm participated in a full-day seminar to discuss and validate our observations and tentative interpretations.

Finally, we have continued to follow the subsequent design process and its implementation and are able to document the inscription into physical structures of the intentions of the winning architect, the preferences of the jury, and the multiplicity of actors and events that emerged subsequent to the competition itself. However, in the present paper I will focus on the process up until the announcement of the winner.

Case study methodology.

This wealth of data would allow a rich and detailed case study. However, a traditional case study doesn't utilize our data very well. Case studies are focused on explaining what actually happened. Beyond doubt it is valuable to understand why things happened. But hindsight – the knowledge of what did in fact happen – lures us into believing that what happened had to happen (Fischhoff, Kahneman et al. 1975)! We reconstruct and rationalize the sequence of events in support of this contention. E.g. realizing subsequently that the client does not appreciate corroded iron, the failure of such unfortunate design choices appears to be inevitable. But such inevitability does not exist in our data. Rather, we know from observations that (a) such negative or positive preferences may be outcomes as well as premises; (b) that acknowledged preferences are negotiable and often simply neglected, and (c) that the jury is free to draw very conflicting implications from unfavourable design features, including to discard the entry or to demand this feature to be reworked during the subsequent implementation. The last-mentioned option allowed in our case the jury to prefer a particular entry in spite of strong doubts about the viability of its most salient feature, i.e. the glass façade (see below). To honour such observations I will reorient the case study to include not only what actually happened but also all the things that might easily have happened, while did not happen on this occasion!

To categorize highly complex, contradictory, incommensurable ideas and entries into a very distinct, yet crude categorization of winners and non-winners: that is the task which juries face. Since the jury is held accountable to the institutional logic of architectural competitions they must be explicit and convincing in their

justification for categorizing one as winner and the others as non-winners. The assessment report contains a specific assessment of each individual entry, highlighting good and bad features according to the jury's criteria. The assessment concludes with the categorization of the entry. Both the assessments and the justification for selecting the winners require explicit criteria.

However, by necessity the criteria for categorization must be developed or chosen after the architectural teams have submitted their entries. Categorizing entries into winners and non-winners will require comparisons across entries on design solutions that differentiate the entries. Until we know the proposed solutions we cannot know what differentiates them. There exists no prescription that would ensure winning, because if everybody followed the prescription they would not be differentiable on that point and picking a winner would still require additional criteria.

But if criteria are developed after the architectural teams have submitted their proposals there is no way for the teams to predict their fate in the particular competition. Whatever the future will bring is uncertain and undetermined at the time of action. Action must be take without the knowledge of the future and winning is no part of the action itself. As Ryle (1949/2000) reminds us, winning is a situation that emerges only after the action, and is not a quality of the action taking us to that situation. In terms of preparing an entry, there is no difference between the winners and the non-winners. Their proposals all rely upon judgments subject to error, and most of them are made erroneous subsequently by the decision of the jury. Since the decision of the jury is also necessarily judgmental, in the sense that outcomes and criteria are co-produced in the process of making the decision, those teams who were proven correct in realty might conceivably have been proven wrong, and vice versa.

Thus, what we learn from case studies and ethnographies of architectural competitions cannot be linked to the actual evidence of what happened. What happened is only significant in the sense that it proves that it *could* happen, not that it had to happen. We also learn that many other things could have happened, even if they did not happen. As we will show below, the jury in this case took the design requirements in the brief lightly – and we know now that to do so is an option for juries. However, this insight has no predictive power, since on the next occasion the jury may interpret the competition brief literally, if that will serve the argument for picking a winner. The jury did in fact neglect explicit requirements in the brief, thus it could happen – and it *can* of course happen again, but also it may not happen next time. Thus, such reflections make us aware that experiential learning is potentially misleading. They also make us aware that the judgments necessary for action most likely will be made erroneous by subsequent events. Such awareness will be meaningful and realistic, even if it is shunned as unfortunate because it risks undermining motivation for participation and effort (Brunsson 1989).

Simulation modelling.

In the simulation model to be described below the driving force is randomness, chance or luck. In each competition the achievement of each architectural team as evaluated by the jury is represented by a number between 0 and 1. In repeating the simulation again and again we look for patterns in the aggregate performance and outcome. We claim to find such patterns, but what do we learn from this?

Simulation models are not reality, even if I would claim that the model developed here takes inspiration from our empirical studies of architectural competitions. It is hard to believe that the results of simulation models *in themselves* can teach us anything. The value lies in the ways in which the model inspires us to learn from empirical facts – or rather, to prevent us from drawing too strong implications from single events in a complex reality.

Our model produces results that are clearly consistent with highly individual careers and successes. If e.g. an architectural team wins a disproportional high number of competitions we are inclined to ascribe certain abilities and practices to the team in order to explain the success. They become role models for other architectural teams which achieve a lesser degree of success. While it is perfectly possible and imaginable that different teams have different capabilities we can show in the simulation model that it is also perfectly possible that the teams differ only in terms of luck. If the latter is the case there would be nothing to learn from successful teams.

Simulation models allow us to put experienced events into a broader picture and thus to reduce the significance of what actually happened in view of all the things that might have happened. Actual events are significant, not least in their consequences for actors and context. But they may be less significant as lessons to learn from. History may be a lousy teacher when it lures us into seeing causalities where randomness prevails. Simulation models may serve as an antidote to being fooled by randomness (Taleb 2007). But as for all antidotes, the simulation models only have a role to play in relation to empirical observations. It is in the interplay between the simulated (i.e. imagined) and the experienced worlds that insight may be obtained: imagination framed by experience, and experience enriched by imagination.

Sources of Unpredictability in Architectural Competitions

As mentioned above, the data from the case study of architectural competitions have been published and elaborated elsewhere. Thus, what follow is a distillation and a brief illustration of our observations and analyses.

The phenomenon studied is *a single, sealed bid, invited tender competition* (Kreiner 2007). Eight architectural firms were invited to participate in the competition which involved preparing a design for the remodelling of an old factory building to fit the needs of a modern university. All design proposals were submitted anonymously, and the architectural firms behind each entry were revealed only after the jury had selected the winner.

The jury consisted of three professional architects and civil engineers, appointed by the Architects' Association which also appointed a secretary for the competitions to oversee that the competition was professionally, fairly and legitimately executed. A number of representatives of the client organization sat on the jury as well, while several consultants were hired to provide certain inputs to the proceedings, including preparing the competition brief.

The competition brief outlined the task and was distributed to the architectural firms. It contained a short description of the client organization, the existing building and some parameters of the acceptable solutions. Some requirements were spelled out clearly and unambiguously. E.g. it was stated that the principles of construction and installation should be simple, that the building should provide good working conditions, and that operational costs of the facility should be minimized. On other aspects, the brief served more as inspiration. E.g. design proposals were invited that either matched the surrounding built environment or deviated from it distinctively. On yet other aspects the brief ventured to provide illustrative examples. This was true of the floor space plan which was explicated in the brief, but explicitly not as a mandatory plan. Thus, the brief was a mixture of instructions, inspirations and illustrations provided to the architectural teams.

The time limit was narrow, allowing just a few weeks of work with an absolute deadline. The task was complex and included the collection of a substantial amount of additional information as well as developing creative solutions that could be communicated in short texts and be summarized on bulletin boards. The teams experienced an excessive but not unusual work pressure.

For more detail on the processes of architectural competitions, please refer to Kreiner (2005, 2007).

The Architects' Judgment: Granting authority to the competition brief

I will focus on just one of the many dilemmas that architectural teams face in preparing an entry to a competition. The dilemma is whether to interpret the competition brief literally or inspirationally. Below data are provided to illustrate the dilemma and the strategies to deal with them.

Invariably, architectural teams begin their work by reading the competition brief closely and repeatedly. Thus, it is a very central source of information. The teams related how they repeatedly returned to the brief for inspiration and confirmation when they met obstacles in the design work. While the brief consists of few mandatory requirements and many expansive, conflicting and engaging ideas and illustrations, the teams seemingly search it for clues to the needs, desires and dispositions of the client and the jury.

It almost goes without saying that such a text will be read in many different ways by the architectural teams. Prior experience from

working with the client and the jury members may bias the reading. The following occurrence illustrates this point. As mentioned above the competition brief contained an illustrative floor space plan which included a multifunctional auditorium of a certain size is. One of the teams had difficulties fitting in a full-sized auditorium – in their own word this requirement became a "road block" for them. In an interview, the architect reflected on this experience,

... you always learn when you see the final result. When seeing the winning entry I realized ... that they had not taken the brief's m2 requirement for this function literally. We gave it priority – yes, we found it important. [Translated by author].

This little piece of evidence has significance in several ways. It shows that this architectural team interpreted the text as a requirement and a strong preference of the client. The fact that the brief categorized the floor space plan as an illustration could meaningfully be understood as indicative of a specific expectation and desire. The team read the illustration as revealing a preference. Furthermore, on a previous occasion, the architectural firm had experienced the capacity of auditoriums to be a very important issue for this particular client. Thus, one cannot blame the architectural team for taking the indicated size of the auditorium seriously – and for feeling compelled to make sacrifices on other aspects of the design in order to honour this requirement. This proved to be a mistake since without penalty the winning team deviated from the illustrative floor space plan. Thus, reading the brief as instruction on this aspect turned out to be a mistake in the end, but at the time the architectural team made its judgment it would be unfair not to acknowledge the judgment as sensible.

While not reading the illustrative floor space plan as an instruction the winning team still included the indicated type of auditorium in their proposal, if somewhat smaller than mentioned in the brief. In a sense the brief was read as an indication, not only as a source of inspiration. What I am suggesting is the possibility that the auditorium could have been left out altogether. Elsewhere in the brief the university was quoted as being dedicated to interactional forms of teaching. Auditoriums facilitate a lecturing type of teaching. Putting more emphasis on the pedagogical values than on the illustrative floor space plan might possibly have led to a proposal with no auditorium at all. That might prove to be a mistake too, but it might also have allowed the optimization of other design features that could create new preferences in the jury. We cannot know if the winning team would still have won, had they cut out the auditorium; we also cannot know if the winning proposal would have won, had other architectural teams dared to skip the auditorium. All we can know is that fact that the teams make (and have to make) explicit and implicit judgments about the text of the brief – judgments that reflect a reading of the brief as instructions (delimiting the solution space), as indications (symbolizing the identity and values of the client organization, e.g.) or as illustrations (providing inspiration for exploring what the client could get).
I will analyze how architectural teams can strategically choose to read the competition brief as instructions, indications or illustrations. There is little empirical evidence that such reading is actually chosen strategically. The practice seems to imply a literal reading – reading for instructions and indications – as far as it is possible. The design task being highly creative and underspecified in any case, it would not seem unreasonable to search for some premises for the work, and the brief would be a natural place to search. Premises are also routinely searched for elsewhere, as when the teams collect information on the preferences and past records of the jury members. While reassuring in a psychological sense, and possibly instrumental in the sense of ensuring a consistent design proposal, there is little rational argument for reading the brief literally. Compliance with a constructed image of expectations of the client and the jury will not guarantee success – it may as well lead to failure, as illustrated above.

The architectural teams seem invariably to read the brief carefully and continuously during the competition. While they cannot choose to read it correctly, they might choose to read it in a specific way – within a consciously chosen frame of mind that makes the team interpret the text as instruction, indication or illustration. Whatever choice they make, it may be proven wrong by later events. If we are dealing with a competition for primacy (March 1999), any reading will most likely be proven wrong. Thus, the argument for strategically reading the brief must find its rationale in some quality other than being proven correct and winning the competition.

The Jury's Judgments: Reading the Entries

One would think that the legitimacy of the architectural competition depended on the fair and objective application of the criteria stated in the competition brief. The fact that the results of architectural competitions are seldom contested suggests that they are found to be fair and legitimate. However, this does not mean that winners are found by the objective application of criteria specified in the competition brief within the bounds of a set of institutional rules. Below I will illustrate what juries actually go through when selecting winners in architectural competitions.

As mentioned above, parts of the brief are very ambiguous descriptions of the client organization, of its values and needs. Other parts are fairly explicit requirements that must be met. This suggests that certain points of the brief should be kept out of the architectural teams' strategy considerations. If failing to respect the stated parameters would automatically disqualify the proposal it would be foolish not to take them literally. To disqualify such proposals would at the same time testify to the fairness and legitimacy of the competition.

Such opinions are prevailing among practitioners, but they are not justified by empirical evidence. We only need one illustration of a jury disregarding the formal requirements to know that because it happened it could happen again.

Below we give such an illustration from our case study and the way in which the winning proposal was reviewed in the assessment report. The proposal was highly praised for its robust and visionary design, but the façade towards a public park was commented on critically several times,

The proposed glass south-façade is interesting, but is also technically challenging. The shown façade is still to find its final form. … In relation to the south-façade a number of issues remain to be resolved, e.g. water-proofing and especially [shading]. The façade must possibly be changed somewhat to function satisfactorily. …The south-façade should be simplified and possibly also modified in order that its expression to a higher extent concords with the identity of the surroundings. Further the jury has doubts about the economical viability of the heat-reflecting glass without any form of sunshades. The façade needs further elaboration and technical documentation.

[Translated by author].

The façade was an integral element in the design, and in many respects it is said in no uncertain terms that the jury does not find it persuasive. It violates the general requirement that "the principles of construction and installation should be simple" (The Jury's Assessment Report, p. 9); it violates the mandatory requirements of working conditions in the building; it violates technical requirements; it violates the explicit concerns for minimizing the operational costs of the facility. Nonetheless, the jury issues an invitation to elaborate on the proposed façade. It is fairly obvious that the jury might also have decided to disqualify the entry on exactly these grounds.

The fact that the jury did not disqualify the entry in spite of serious reservations and qualms indicates the amount of license the jury has. If it wants to it can read the design proposals as "work in progress" and invite the architects to change, elaborate and correct elements of the design. But it can also read the proposals literally – as one architectural team experienced in our case study when a choice of colour was criticized for being too expressive. The motivation to read the proposals one way or the other has less to do with the seriousness of the design aspect, and more to do with the result of the architectural competition. In the present case, the jury was convinced that the proposal with the glass façade should win – and found ways of reducing the seriousness of the technical, economic, aesthetic and functional problems with the façade. The seriousness was reduced by inviting the architects to change the façade, thereby making the serious problems transient.

It is suggested that the jury's choice of a winner cannot be rational, because the criteria for evaluating the alternatives are developed or discovered in the process of choosing. Assessments are made of multiple design aspects and features, but it is the choice of a winner – and by implication, of the many non-winners – that determines the evaluation of such design elements. Knowing it is the winning design proposal, the jury will reduce the weight and importance of unfortunate design aspects by portraying them as transient problems to be expected at this early stage of the design process. Knowing it is a non-winning design proposal, the jury can portray distinct aspects and features as unfortunate and ultimate for the design proposal – thus making them disqualifying for the entry.

Let me emphasise that there is nothing illegitimate in these practices of reading the winning and the non-winning design proposals differently. First of all, the jury's decision was not formally or informally contested. The architectural teams expressed only a few misgivings about design intentions having been read wrongly by the jury. Secondly, the jury is charged with the task of differentiating a winner from the rest on criteria that cannot be stated a priori, and that need to be developed and elaborated simultaneously with or subsequent to the selection of the winner. The multiplicity of aspects and nuances need to be glossed over before the entries can be categorized in only two types: winner and non-winners. The differential reading of the proposals is a mechanism for increasing the contrast of the competitive picture to justify the selection of the winning proposal.

The license of the jury in reading the design proposals is demonstrated above. Such license can be misused to treat certain ideas and proposals unfairly. However, it can also be used to ensure that the client will invest in the best design proposal to the knowledge of the jury at the time when the competition is over. That knowledge is significantly different from the knowledge on which the brief was originally written. Among other things the client and the jury is now informed by eight specific proposals that teach the client what it is possible to get – and what they might have asked for in the first place had they known then what they know now. Such retrospective sense-making needs not be a sign of weakness of mind or lack of discipline. It may also be the hallmark of learning.

Empirical findings: The role of judgments in architectural competitions

In one sense, a case study faces an easy task of explaining what actually happened. In explaining why the architectural competition found the winner it did we can rely on the jury's assessment report, which was convincing enough to dissuade criticism. The losing teams blamed the failure on their own misreading of the brief. But in another sense, a case study faces another task as well – the task of explaining all the things that might have happened, but did not happen on this occasion. Following the necessary judgments made by the architectural teams in the face of the vastly underspecified design job we can reconstruct their rationale and see the result as guided by reason. But not least in comparing judgments across teams and the subsequent decisions by the jury we also come to realize that many different judgments could be justified with reason. The implication of this insight is the fact that the saliency of what actually happened is weakened. What happened is a specific empirical manifestation of the multiple judgments made by architectural teams and the jury. But every judgment might have fallen out differently, even under the specific circumstances that we studied here. A change of any judgment might have changed the composition of entries and the decision of the jury. Thus, we become convinced that what happened was merely one specific empirical manifestation of all the things that might have happened under the given circumstances. That these alternative histories did not occur cannot be explained by pre-existing and given parameters of the competition and its participants. The only thing that is pre-given is the fact that the competition will have one and only one winner in the end. But which particular well-articulated and rationalized entry that will win appears to be a matter of chance.

Explaining what actually happened entails the construction of a causal argument: that what happened had to happen given the circumstances. But our case study and the way we have interpreted the data provides a very different kind of insight, namely that what happened did not have to happen at all! Alternative histories would have been just as likely to occur under the given circumstances – and just as easy to rationalize in causal terms ex post facto. My argument is not that the outcomes would have been different had the circumstances been different. Given the circumstances of the studied architectural competition, the outcomes might easily have been different, in terms of the design proposals submitted and the choice of winner.

In one view, the case study reaffirms the trust in the architectural competition as a social institution. It produced not only a winner, but also a fair winner, the selection of which could be argued convincingly enough to pre-empt any open opposition or criticism. Given the rarity of such opposition and criticism, this reaffirming result is probably not a matter of chance. However, this does not imply that chance has no role to play – that luck may not better explain the particular winner than the causal

reasoning used to justify the design proposals and the competition result. We may test the role of chance by asking ourselves what implications we may draw from the particular history of events experienced in the studied competition. Chance events harbour no lessons for the future; if there is a causal argument there will be such lessons to be impressed on future participation in architectural competitions.

Consider the architectural firm that read the competition brief literally and came to consider the illustrative floor space plan as revealed preferences. They lost to a competitor who did not take the illustration for an indication, but this could hardly be taken as a lesson to be followed in the future. They knew well that on previously occasions the client actually did take the brief seriously – and we know that it would certainly be within the jury's zone of license to do so. Thus, the lesson is simply that a jury in the future may or may not interpret the words of the brief literally. There is little advice from this lesson on how to act rationally in architectural competitions. It becomes clear that judgments are required for which there is no independent reason or cause. Luck or chance, then, must be a more appropriate way of explaining the subsequent success of the design judgments of architectural teams: the luck of predicting the eventual preferences of the jury, or the luck of invoking such preferences in the jury that will favour one's proposal.

The unpredictability of the jury's decision (and the criteria and preferences used to justify it) is explained by the fact that the decision is more judgment than choice. The definition of decision criteria and the choice of the winner are not separate, consecutive processes, but intertwined and iterative processes. Only in retrospect will the sequence be corrected so that preferences and criteria come to determine the outcome. We know that other combinations of premises and outcomes would have been possible – and perhaps even likelier given the serious reservations expressed in the assessment report about the glass façade. The lesson is that the zone of license for juries in architectural competitions is wide. Where within this zone a particular jury will come to rest, is a matter of chance more than circumstances and boundaries.

Alternative strategies

We should acknowledge that when luck and chance play important roles experiential learning towards improved performance is inhibited. However, if our empirical results are valid we should not regret such inhibitions because the learning that would be possible would most likely be false. However, events driven by chance do not rule out that patterns at aggregate levels of performance exist. Strategies for acting now can be chosen with an eye to what would pay in the long run, and may be rationally justified even if leading to catastrophic consequences in the short run. Insights into what pays off in the long run may be hard to get when you have access only to the short run. Likewise, insights into the odds of chance events may be hard to calculate when the number of observations is very limited.

Before suggesting ways of circumventing such problems, let me discuss examples of competition strategies that might be possible to choose. In this paper I will concentrate on the strategy of architectural firms in preparing a design proposal. And in continuation of the above results from the case study I will assume that the different strategies are based on the various ways in which the competition brief can be read. Reading it as instructions (whenever possible), as indications or as illustrations represents different strategies for locating and balancing proper premises in producing the design proposals. When the brief is read as instructions the challenge is to find solutions that honour the brief without sacrificing other design criteria too much. When read as indications the challenge is to collect additional information about the client and/or the jury to be able to interpret the brief richly and adequately. When read as illustrations the challenge is to make the brief a resource and foundation for the creative exploration of design options. In the two first-mentioned cases, the proper premises are assumed to pre-exist, if hidden, implicit and not easily discerned; the aim is to determine the expectations of the client and the jury, and fulfil such expectations to the best of one's ability. In the last-mentioned case, the design premises are constructed and implicitly the challenge is to teach the client and the jury new preferences and criteria. The two former strategies have an exploitative nature, applying the creative skills and architectural competence to solve a given design problem. The third strategy has more of an explorative nature in

searching new applications for the creative skills and architectural competencies.

These different ways of reading the brief are all possible. The jury remains in control of the fate of any design idea and proposal, of course. But the different strategies lead to proposals that *allow* different types of acclamations whether or not the jury actually perceives them in each particular case. They differ in terms of affordance (Gibson 1986). A proposal that builds closely on the requirements stated in the brief lends itself less easily to strong positive or negative evaluations. Thus, if the strategy of reading the brief literally succeeds it is unlikely that the evaluation will be very bad. It is also unlikely that the evaluation will be very positive. Giving people what they expect will create satisfaction, but no excitement. Furthermore, since taking the brief as instructions requires compromises on other design aspects in the end the jury may also end up mildly unsatisfied with the proposal.

If the architectural team makes inferences about the preferences and desires of the client and the jury, it may come to base their proposal on a much better understanding of the situation than what the literal reading of the brief would allow. Thus, with luck the team may produce a proposal that better fulfils the needs and wishes of the client than it was able to express in the brief. The evaluation will be comparably more elated. On the other hand, such inferences are uncertain and the assumptions about what the client and the jury really want and prefer may be misguided. In that case, the evaluation will be comparably stronger, but now on the negative side.

Finally, when the architectural team ventures out to explore what design would fit the site, the type of client and the circumstances irrespectively of the brief and the current expectations, the design proposal may easily become controversial. If the proposal is really path-breaking the jury may find excuses for neglecting or circumventing the requirements stated in the brief. The motivation for doing so is highly related to the quality or originality of the proposal. More likely, perhaps, such proposals fall short of being considered ingenious and will then receive immediate disqualification.
Such considerations lead us to formulating two generic strategies, based on what the team attempts to achieve on which parameters. The risk element is one such parameter. Clearly, the strategy of reading the brief as merely an illustration and inspiration implies a high risk of losing badly, i.e. of receiving very bad evaluations and finish last. But it also implies a chance (however slight) that the deviation from the expectations will be considered ingenious and that the evaluation will be extremely positive. The variance in results will be more temperate in the two other cases. The chance of winning with a big margin is low, but the risk of losing with a big margin is also quite low.

The high variance strategy is probably associated with a lower average performance in the competition. Very poor performances will be more frequent than very excellent performances will be, and this drives expected performance down. Thus, we can express the generic strategies as either gambling on the tail or on the mean of the probability distribution over the range of performance levels. Gambling on the mean translates into a desire to do well most of the times by sacrificing the chance of rarely doing extremely well. Gambling on the tail of the distribution translates into a desire to preserve the chance of doing extremely well by accepting that you will do very bad most of the times (March 1999).

We have no way of knowing how in reality the two strategies compare in terms of success. We have far too few observations to determine the probability distributions, and we have far too much noise from other factors to isolate the effects of competition strategy. In this situation we may have to rely on modelling in order to get an idea of the relative strength of the competition strategies. In the next section, we will describe a simulation model of architectural competitions and let the various strategies compete against each other.

The simulation model:
The model simulates repeated competitions between the same eight architectural firms. Each simulation consists of 50 competitions, and the simulation is run ten times. In reality, we experience such competitions in small numbers, one at a time and only a very few in total. The large number of repeated competitions in the simulation model allows us to situate the specific outcome of a single competition in the contexts of all the other outcomes that the competition might conceivably have had.
In each individual competition a winner is found and the data on the winning entry is

accumulated. Thus, we have a total of 500 wins to be distributed over eight architectural firms, and we have five hundred winning entries to be distributed over a scale of achievement level (explained below).

For each architectural firm, in each individual competition, a random number between 0 and 1 is generated. The number is translated into the level of performance in the evaluation of the jury. This translation depends on the strategy adopted by the architectural firm. Thus, a random number of 0.5 will translate into the mean performance within the distribution defined for the architect, and the mean performance is lower for architects gambling on the tail of the distribution than for architects gambling on high average performances.

Figure 1

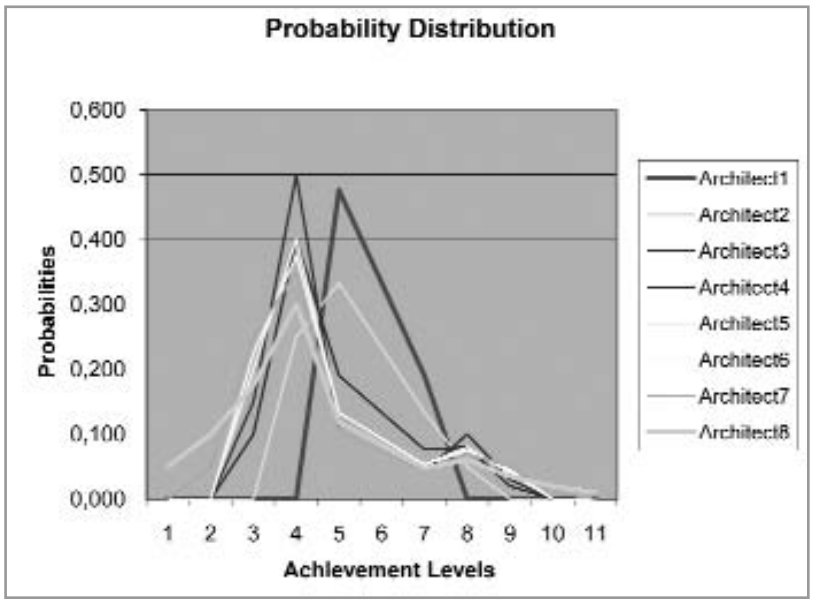
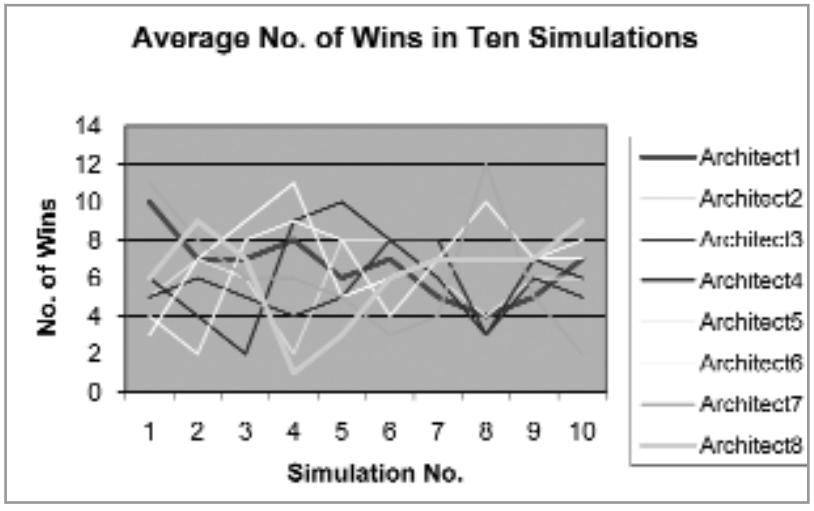


Figure 2



The random number reflects several elements of chance. First, architectural teams employ a very uncertain technology when preparing a design proposal. Add to this the very tight deadlines for the competition, and we would expect the level of achievement for the same firm to vary quite a bit from one competition to the next. Relative to what one aspires to do performance will vary from time to time. Secondly, the random number represents the unpredictability of the jury's reading of the proposal. Occasionally, the team successfully predicts the preferences of the jury. On other occasions, the team successfully plants new preferences in the minds of the jury and the client. We recognize such occasions after the competition, but during the competition judgments subject to error are the only way forward. The outcomes are unpredictable.
The performance level represents the jury's evaluation of the team's performance. The levels vary from "1" to "11". The higher the number the more positive enthusiasm is expressed about the proposal; the lower the number the stronger criticism is levelled against the proposal. In between, more or less satisfaction will be communicated in the assessment report and elsewhere.

Results.
Assume that we let a variety of strategies compete against each other. See Figure 1 for the strategy profiles that compete in this version of the simulation.

Recall that each simulation consists of 50 competitions, repeated ten times. The number of wins per simulation for each architect is depicted in Figure 2.

It appears that there is no pattern in the number of times each strategy wins competitions. Notice that surprisingly Architect8 (who represents the most radical strategy in terms of high-variance/low mean) is winning the highest number of competitions relative to the other architects in simulation No. 2. It seems that either Architect8 is lucky enough to score very high, or is lucky that the rest of the architects score sufficiently low, with a frequency that ensures him (or her) more then a "fair" share of the wins. The result is achieved by chance, of course, but still it testifies to the fact that such outcomes are possible. The number of wins evens out over time across the architects. This is shown in the dynamic average of wins across the repeated simulations in Figure 3. It

appears that the dynamic averages converge as the number of competitions grows large. It is hard to distinguish between the various competitive strategies as represented by the eight architects in the simulation model. This is perhaps significant in itself since reading the competition brief for inspiration only (the essence in the strategy of Architect8) might be seen as a risky strategy. However, within the parameters of the simulation model it seems not to imply a reduced winning rate.

However, on other dimensions the strategies become distinguishable. We calculated the average performance level on which each strategy won their competitions. We suspect that the higher the performance level, the higher the enthusiasm of the jury and the client. Such wins on a very high performance level will probably be more intensely communicated, and probably also earn the architect more fame than wins on the lower part or in the middle of the scale. Probably, such projects will also satisfy architectural firms professionally. In Figure 4 we present the average "thrill" of wins for each strategy across the ten runs of the simulation. The picture is not surprising: with due variation (and with due reservation in view of the simulated reality) the most daring gambling on the tail of the distribution is rewarded, while the most radical gamble on the mean is penalized. The pattern is confirmed in Figure 5 by showing that the dynamic averages do not converge.

The competition between different strategies can now be summarized. You cannot influence the odds of winning by choosing any particular strategy. However, you can influence the situation in which you find yourself after the competition, should you be lucky to win a competition. When reading the brief literally and making compromises to honour the requirements and expectations of the client and the jury you will end up having to implement designs that are less attractive projects – from an architectural as well as a reputational point of view. When entering with the type of proposal that you think is optimal regardless of what is required and expected, you will end up implementing much more attractive projects.

It takes luck to win architectural competitions. But if our analysis is correct, it takes strategy to maximize the benefits of being lucky. The less authority granted to the brief and the jury, the more likely will the architectural firm spend its

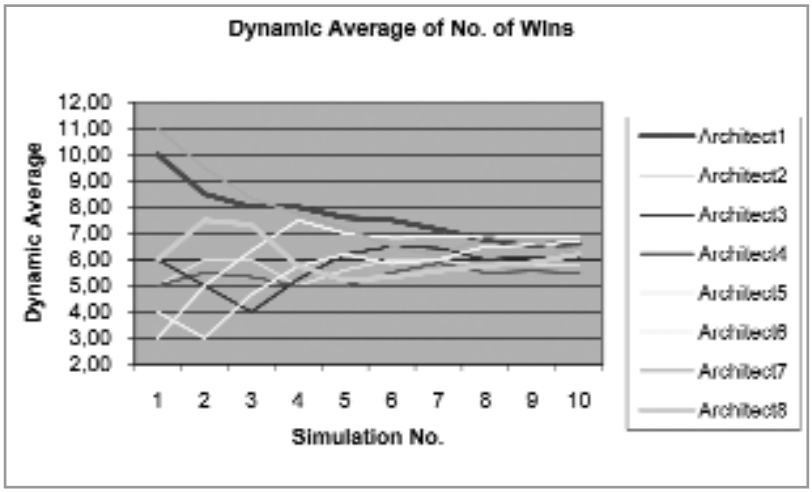


Figure 3

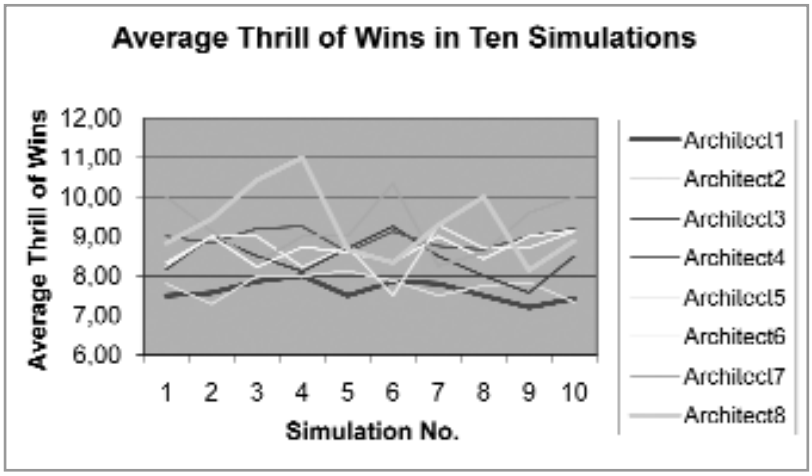
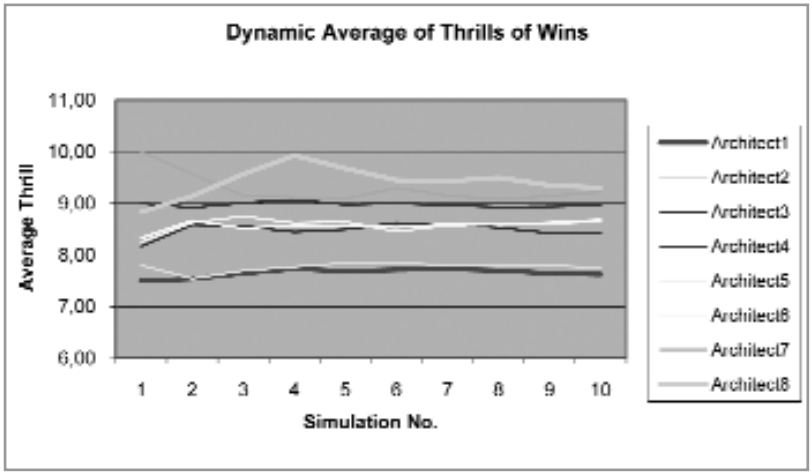


Figure 4

Figure 5



time and resources on worthwhile projects. The reassuring (and somewhat surprising) part of the story is the fact that pursuing worthwhile projects does not reduce the volume of work that the architectural firm will acquire through architectural competitions.

Conclusions and perspectives

My focus on architectural competitions is narrower in many respects that it needs be. Architectural firms acquire contracts in many other ways than by winning competitions. Also they cannot choose which competitions to participate in. Often they rely on being invited. In my discussion and in the simulation model a competition for primacy is assumed. That is, it doesn't matter if you end second or last. What matters is winning or not winning. However, regularly doing very badly in architectural competitions may influence the chance of being awarded work without competition, or lower the chance of being invited to the next architectural competitions. We should be aware that the spectrum of interests and concerns may be much broader than described here.

On the other hand, we are studying a set of problems that are noticed elsewhere. The winner's curse could serve as headline for tendencies noticed in architectural practices as well as in other spheres of action. Compromising on professional, ethical, economic, and academic standards will often be claimed to improve the chance of being hired, being awarded the grant, or the like. When such compromising is excessive the attractiveness of the job or the grant etc. will be reduced to a point where winning may not be valued at all. This study suggests that perhaps the compulsive compliance with external, preconceived expectations and norms is neither attractive nor instrumental. Whenever a competition for position is real the criteria for rank ordering entries will partly be rationalized retrospectively. If this is the case, the chance to invoke or teach the jury or client new preferences and criteria through creative and radical proposals is never nil. Deviating from expectations may often harm the chances of winning, but occasionally it may give the jury the opportunity for positively distinguishing the proposal. Integrity may pay off sufficiently often to allow architects, researchers and others to excel and grow.

If we were able to convince all architectural teams to follow the strategy of reading the brief for inspiration only, what would happen? We have already shown that the strategy does not influence the chance of winning. Knowing that there are no more competitions to be won than before, the wins will still be distributed on participants by chance. But the level of thrill will change dramatically. The chance of winning with a pedestrian design proposal is substantially reduced. From society's point of view, such change would lead to increased quality of the built environment – as well as to increased satisfaction amongst architects and clients alike.

Finally, we have yet to study and model the strategies of clients and competition juries. They can choose to write competition briefs for communicating expectations and requirements, or write them to maximize their inspirational effects. They can choose to read the design proposals for indications of the architects' intentions or read them for inspiration for future elaboration of the proposals.
Perhaps the most general lesson from our study is the demonstration that aim and focus may diverge in complex and uncertain realities. The aim of participation in architectural competitions is to win, no doubt. But we showed that focusing on winning would be in vain – and would risk harming the value of winning. With a focus on the quality of the design proposal in itself, winning becomes a side-effect, and nothing in our study would suggest that the side-effect may not fulfil the aim better than the alternative. Applying for research funds, and doing business for profit, does not imply that the focus should be on the application or the making of money. Focusing on designing good research project and on creating customer value may possibly lead to funding and profits as side-effects.

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