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Planning Errors



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Planning can be thought of as the mental process of anticipating future actions. When things go wrong in the planning process, that is referred to as a planning error. Such errors affect either the intended or the actual outcomes or characteristics of the affected projects. However, planning theory rarely addresses errors, in spite of the countless ways in which mistakes can be made.

1 Introduction

Whether in our professional (including spatial planning activities) or personal lives, we all make plans every day. Given this everyday experience, it can surely be seen that \triangleright *Planning* leads to the desired positive outcomes in the majority of cases. However, some plans go wrong and planning errors occur; these errors often dominate the subsequent debates after being taken up by the media. A prominent current example in Germany is the new BER airport in Berlin, where Murphy's Law ('Anything that can go wrong will go wrong') seems to have taken on a life of its own. Countless other examples could be added; one source where German examples can be found is the *Schwarzbuch* (Black Book), which compiles a remarkable number of major and minor planning errors and is published annually by a German taxpayer advocacy group (cf. Bund der Steuerzahler 2013). Particularly instructive descriptions of planning errors are also documented in publications by Erler (1990), Hagen (1988), and Schnaars (1989).

As far as theory is concerned, it should be noted that scholarship (in this case, philosophical action theory) 'largely ignores failed actions' (Grunwald 2000: 62) and that 'the issue of planning failures is rarely discussed in the textbooks on planning science' (Grunwald 2000: 97). Dörner (1989), Reason (1994), and Schönwandt (1986) are among the exceptions here.

Planning errors can also be considered from a legal perspective; however, that is not the aim of this article (\triangleright *Building law*).

2 Definition of 'planning error'

If we wish to take a more systematic approach to the issue of *planning errors*, first we need to define what is meant by 'planning' and 'error' in this article.

This article is based on a relatively broad, threefold definition of planning (Heidemann 1992: 113) according to which planning can be understood as 'processing knowledge', 'problem solving', or as a 'productive process' (see Table 1). Even the brief description of the term *planning* in Table 1 suggests that there are countless ways in which mistakes can be made.

Particularly during the initial phase of planning as a means of problem solving (see Table 1), the fear of making errors of the kind this article deals with can paradoxically work as a brake on creativity or give rise to mental blocks. Therefore, during this phase, all potential solutions should be on the table initially. As the planning process progresses, each potential solution is examined for weaknesses and some may then need to be discarded. But it should thus be clear that it is of little help to speak of errors occurring in the most preliminary stage of the mental process.

Put abstractly, planning errors affect either the *intended* or the *actual* characteristics of the affected projects (cf. Schaub 2006: 471). In general, they involve deviations whereby the actual outcome deviates from the intended outcome in a certain aspect (e.g. the planned construction costs for the Berlin airport were EUR 2 billion in 2006, whilst in 2016 the officially stated expected construction costs had ballooned to EUR 5.4 billion) or a deviation from a potentially correct set of characteristics. Thus there is an error if (1) aspects of the actual outcome do not correspond to what was intended, or (2) the actual outcome does correspond to the intended one but with

consequences that differ from expectations. Possible causes could include aspects that were presumed unimportant and thus were not taken into account, or intended characteristics that subsequently proved to be inadequate (unsuitable). For example, the ground has been rising for years under the town of Staufen near Freiburg as a result of geothermal drilling, leading to cracks in the buildings in the historical centre. This aspect was not considered during the planning for the drilling. This case is also an example of one of the most common causes of planning errors: a lack of knowledge about current conditions, and of course about future ones (▷ *Forecasting*) in particular.

Table 1: Planning definitions according to Heidemann

Planning concept	Explanation	Example/outcomes
<p>Planning as a means of processing knowledge</p>	<p>Planning in this sense is the process in which authors, who are equipped with certain knowledge as part of a planning entity, draw up instructions or messages directed at certain addressees.</p>	<p>An employee responsible for routine tasks, for example at a planning office, is involved in this kind of planning. The outcome of this kind of planning is that the information available in the planning office reaches the actors who need it for their projects.</p>
<p>Planning as a means of problem solving</p>	<p>Here the activity involves carefully considering what would be an advisable course of action given a difficult situation.</p>	<p>The outcome usually takes one of the following three forms: outline plan, programme or project.</p>
<p>Planning as a productive process</p>	<p>This is about preparing for practical activities.</p>	<p>The result is usually a detailed programme of action describing exactly who is to perform what activities, who is to pay for the activities, and who is to benefit from them in what way. What is actually produced here remains open and can vary, e.g. a regional plan, an energy strategy for an urban district, or a building.</p>

Source: the authors, based on Heidemann 1992: 113

3 Who decides what a planning error is?

The following discussion aims to illustrate why it is not always easy to determine whether a planning error is present or not.

For example, when *actual* and *intended* outcomes differ, one should ask whether the deviation should be called an error or merely a divergence that can be tolerated. After all, perfect outcomes for planning are extremely rare since they almost always involve complex systems in which numerous influences, some more disruptive than others, are or can be at work.

The following questions arise in connection with *actual* outcomes: Is this or that characteristic of the actual outcome even determined in the planning process? Is it something that is even known? In other words, how often are the outcomes of the planning process actually recorded (and thus examined after the fact) through evaluations or audits (▷ *Evaluation, audit*)? A closer look shows that systematic evaluations of planning outcomes almost never take place. Furthermore, another question arises in this context: At what point in time should this or that aspect of the desired outcome actually materialise? For example, when can success be ascertained for a child-friendly living environment? After one year, five years, 10 years, or even 50 years? Some planning is specifically focused on ensuring that nothing (negative) happens.

When the *intended* outcomes are considered, the following questions arise: How do these outcomes come about? Who specifies them, and on what grounds? After all, planners do not work with an ‘objective description of the real world’ as a reference from which they select intended outcomes and variants, but instead with what are called planning approaches. These planning approaches are, in Kuhnian terms (cf. Kuhn 1962), fundamental paradigmatic thought patterns that are reflected in the use of certain objectives and ways of viewing problems, a certain discipline-specific knowledge (theories and methods), and a certain transdisciplinary and in particular ethically-grounded background knowledge (▷ *Ethics in spatial planning (Raumplanung)*). Thus planning approaches function as a sort of lens through which one views the world. It follows that there can be no question of ‘objective’ outcomes. For example, someone who prefers the urban design approach to ▷ *Urban planning* will think and plan much differently than someone who practises urban planning as location planning (e.g. using a ▷ *Preparatory land-use plan*) (for details see Schönwandt/Voigt 2005). All planners, often without realising it, use at least one such approach that affects their communicative and practical planning activities – again, sometimes knowingly, sometimes not. One challenge stems from the fact that every planning approach focuses on certain aspects more acutely than others and also has its own ‘blind spots’, meaning that every planning approach is limited in its problem-solving potential. Table 2 shows the four main results of comparing actual and intended outcomes.

Even when the intended and actual outcomes match, it is by no means certain that all stakeholders will be satisfied. For example, the list of criteria for the intended outcomes could be viewed by stakeholders as incomplete, since assessments already take place here. The German Sustainable Building Council’s sets of criteria for assessing the sustainability of buildings do not include location as a criterion, meaning that the question of what influence a building’s location will have on its sustainability is not addressed at all. According to Turney, Lakenbrink, and Bötzel (2012: 46), the assessment of a building ‘usually ends at the edge of the building or, if need be,

at the edge of the property’. For architects, whose work is mainly focused – in accordance with their planning approach – on the building, that may be sufficient (though many architects would also find this view too narrow). Urban and spatial planners in particular, whose main activities include location planning, would be likely to see this narrow perspective as a potential cause of planning errors. This dissatisfaction can be explained by the different planning approaches of those described above. Another example: After building a bypass road, the planners who advocate the ‘transport planning to speed up traffic’ planning approach will be satisfied with the outcome, while those who plan according to the ‘transport planning to reduce traffic’ approach will criticise the bypass for ‘attracting’ additional traffic. Moreover, what people consider good and desirable often changes with the passage of time. In the 1950s and 1960s, ‘car-friendliness’ was considered a positive characteristic for a city, while today people view it quite differently (▷ *Guiding principles for urban development*). Even when the intended and actual outcomes do not coincide, some stakeholders may be satisfied anyway. The second road bridge over the Rhine near Karlsruhe, called for by a majority of the regional assembly, might not be built. That would at least satisfy Karlsruhe’s municipal council, where a majority is against building the bridge (as of 2016). These examples make it sufficiently clear that assessing planning errors is just as much about scrutinising the *intended* outcome and not just the *actual* outcome.

Table 2: Intended vs actual outcomes

Constellation	Result	Explanation
intended = actual	ALL are satisfied	The actual and intended outcomes coincide and ALL stakeholders are satisfied.
intended = actual	Only SOME are satisfied	The actual and intended outcomes coincide, yet only SOME of the stakeholders are satisfied.
intended ≠ actual	SOME are satisfied anyway	The actual and intended outcomes do NOT coincide, but SOME of the stakeholders are satisfied anyway.
intended ≠ actual	NOBODY is satisfied	The actual and intended outcomes do NOT coincide and NONE of the stakeholders is satisfied.

Source: the authors

4 Errors in thinking

Thus far, this article has examined *planning errors* from the perspective of the underlying understanding of the planning task. Another aspect is that plans are always made by people whose planning, as shown by empirical research into the psychology of thinking, is subject to a

host of unconscious and inherent mental tendencies (errors in thinking) that are also reflected in our planning errors and failures (cf. Schönwandt 1986 or Dörner 1989). So now the focus is more on the planners themselves than on the task of planning. We cannot completely switch off these errors in thinking, but it is possible to prepare oneself for them, to recognise them, and then to avoid or compensate for them. Table 3 shows examples of some of these errors in thinking; more comprehensive compilations can be found in Schaub 2006 and Frey/Schulz-Hardt 2000.

Table 3: Examples of errors in thinking during planning

Errors in thinking during planning	We tend
Understanding the situation	<ul style="list-style-type: none"> • to ignore the underlying problems and mainly react to obvious and undeniable difficulties; • to overlook most of the available information; • to look mainly for the information we want to find, and to suppress information that contradicts our expectations; • to analyse situations only superficially and form opinions based on limited key information, from which we then extrapolate to form a fallacious overall picture; • to assume that trends will continue in a more or less linear fashion; • to ignore future uncertainties (misjudgments are inevitable given the impossibility of predicting the future); • to overlook the inherent contradiction between the long-term perspective of planning and the rapidity and dynamism of social change; • to consider information under time pressure as correct even when it is clearly wrong; • to assess the timing of processes inadequately.
Producing recommendations	<ul style="list-style-type: none"> • to plan with rules of thumb instead of analysing problems thoroughly; • to judge a possible solution as good/appealing or bad/unappealing before understanding it; • to implement the first halfway acceptable solution to a problem instead of systematically looking for other possibilities; • to only look for other possible solutions which are 'close to' our failed first solution; • not to look for promising alternatives when a possible solution turns out to be unsuitable but instead to invest further in activities that have already proven to be unsuccessful.

Errors in thinking during planning	We tend
Working in groups	<ul style="list-style-type: none"> • to confuse agreement about a situation within a group with the correctness of that situation; • to underestimate the risks associated with a plan ('collective blindness'); • to avoid straining or jeopardising positive relationships with other people instead of deciding or acting in a way based on the facts.
Measures (methods/instruments)	<ul style="list-style-type: none"> • to overestimate the effectiveness of planned interventions (illusion of control); • to inadequately consider the after-effects and side-effects of planning measures.
Evaluating outcomes	<ul style="list-style-type: none"> • to say 'I knew it would happen' after the outcome of planning is clear, thus unconsciously glossing over how little we originally knew; • not to properly assess planning outcomes or correctly allocate responsibility for successes or failures (failures are sometimes reinterpreted as successes; ability and luck are confused).

Source: the authors, based on Schönwandt 2002: 54 et seq.

5 Are planning errors avoidable?

How can planning errors be prevented? Avoiding such errors completely is simply impossible. The potential sources of error range from very small to very large. For example, Dörner (1989: 279) emphasises the smaller sources: 'In reality, failure results from our tendency to make small errors here and there, which then accumulate.' In contrast, Maurer (1993: 211) finds countless examples of major cases of 'basic stupidity'.

For those who would like to reduce errors, in our view the following orientations are useful to keep in mind: *deal with the 'facts'*, i.e. undertake a proper 'reconnaissance' to gain 'real world' insights, and *continue to scrutinise your thinking*, which includes any recommendations for action which have been formulated (i.e. work out 'interpretations' as mental constructions for interpreting the insights gained through the reconnaissance exercises). Against this background, the following aspects (see Table 4) can be helpful and should be rigorously scrutinised on a constant basis.

It would be important here to design work processes which integrate theoretical and practical aspects as closely as possible so that they form a durable self-learning system in which no error will be made more than once.

Table 4: Error-resistant planning

Planning levels	Points to consider
Reconnaissance	<ul style="list-style-type: none"> • Evaluating/scrutinising the data used • Systematically evaluating planning outcomes • Systematic and (where possible) multichannel monitoring of relevant situational aspects as an early-warning system for incipient problems
Interpretations	
Planning approaches	<ul style="list-style-type: none"> • Scrutinising the paradigmatic planning approaches underlying each planning process; they are the 'lenses' through which the world is viewed and, above all, they constitute the 'intended outcomes' that are crucial to determining whether or not something is to be considered an error.
Focus on problems	<ul style="list-style-type: none"> • Use the 'problems first' principle when drawing up plans. • Evaluate/scrutinise 'socially constructed' problems (as given or expected deficits). • When drawing up plans, avoid starting only from the objectives (as desired conditions).
Terminology	<ul style="list-style-type: none"> • Use meaningful terms. • Reduce vagueness and imprecision.
Statements	<ul style="list-style-type: none"> • Make convincing statements and strive to keep them consistent. • Avoid contradictions.
Methods	<ul style="list-style-type: none"> • Evaluate/scrutinise the methods used; every method has its strengths and weaknesses. • Use transdisciplinary methods and do not limit yourself to the repertoires of methods in individual disciplines.

Planning levels	Points to consider
Evidence	<ul style="list-style-type: none"> • Consider the empirical support for your statements and avoid assumptions that contradict the available information. • Provide/request substantiating and invalidating evidence.
Values	<ul style="list-style-type: none"> • Strive for worthwhile goals with effects and consequences that are acceptable for stakeholders. • Deal with conflicting values in a thoughtful manner.
Recommended actions	<ul style="list-style-type: none"> • Solve problems using appropriate means. • Especially with planning as a means of problem solving, keep in mind that one cannot fully grasp complex social systems purely through analytical means, so recommendations need to allow for knowledge deficits and uncertainty. For example, 'Use plans that keep options open', 'Take small steps', 'Individual steps must serve a purpose on their own' (when other steps do not 'work' or cannot be taken), 'Exercise caution with final plans', etc. • With planning as a productive process, make detailed and transparent plans from the beginning; isolate exceptional risks and address them through special containment planning.
Participation	<ul style="list-style-type: none"> • Ensure that the people and groups affected by a problem are involved in the planning process related to the problem.
Errors in thinking	<ul style="list-style-type: none"> • Be alert for errors in thinking. They lurk in all of the points listed here.

Source: the authors, based on Bunge 1987: 5 et seq.

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