The SF2™ vision of Systems Planning℠

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Abstract

The vision of Structure–Function–Form (SF2™) paves the way for Systems Planning℠, with applications in the context of city, state, and enterprise affairs.

1   Introduction

Cities, states, and enterprises are typically built and conducted[1] with hidden — or, mildly put, not properly formulated and expressed — mental models, information, and assumptions. This assertion remains largely anecdotal[2], as it conveys knowledge that is understandably sensitive to admit and disclose (Perdicoúlis, 2013b). This non-explicit planning style precludes the *visualisation* and — most importantly — *argumentation* and *verification* of the conceived, proposed, and debated ideas.

2   Innovation

Structure–Function–Form (SF2™) provides an X-ray View™ to city, state, and enterprise affairs — e.g. to *visualise* and *understand* 'what there is', 'how it is put together', and 'how it works'; *design* 'how it should work'; or *assess* how likely it is (or has been) to 'work as expected' (Perdicoúlis, 2010).

The explicit visualisation, understanding, and communication of mental models, information, and assumptions is so important that Structure–Function–Form (SF2™) leads to the creation of Systems Planning℠ and becomes the *ideal way* [a.k.a. 'dream' or 'vision'] to work with city, state, and enterprise systems (Perdicoúlis, 2011a).

The SF2™ originates from Systems Thinking in spatial planning (Perdicoúlis, 2010, pp.14–17), with practical influences from System Dynamics (Perdicoúlis, 2010, pp.22–24), and is manifested and developed through the applied R&D of Systems Planning℠ (Perdicoúlis, 2010, pp.18–22).

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[1]From *con-* [L], together, and *ducere* [L], to lead, with the original meaning of 'leading to a safe place'; alternative expressions include 'governed' (from κυβερνείν [Gk], to steer) and 'run' [En], be in charge of, manage.

[2]Literally 'unpublished', from αν- [Gk], 'not', and εκδίδειν [Gk], to publish.

3 Achievement

In general, the achievement of SF2™ is the visualisation of intangibles such as structure and function (Figure 1), as well as the relations between them (Table 1).
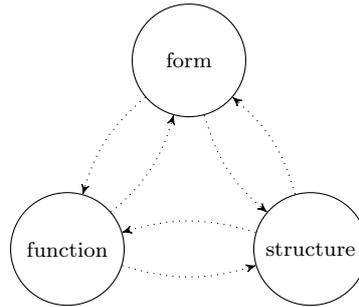

FIGURE 1   SF2™ facets and potential relations in *information flow* view

The relations between the SF2™ facets (Figure 1) depend on the *perspective* — i.e. who is using the SF2™ — and the *mode* of use — i.e. what to do with the SF2™ (Perdicoúlis, 2013c) — Table 1.

PERSPECTIVE	MODE	TERM	SAMPLE RELATIONS
Scientist	discerning	discern	function $\xrightarrow{\text{discern}}$ structure
Scientist	predictive	forecast	form $\xrightarrow{\text{forecast}}$ function
Engineer/ Artist	creative	design	function $\xrightarrow{\text{design}}$ structure
User	practical	use	form $\xrightarrow{\text{use}}$ function

TABLE 1   The SF2™ relations may be either *operations* (shown here) or *information flows* (Figure 1)

The 'X-ray' capacity of the SF2™ vision displays important facets of reasoning that are typically invisible, such as the information flow in decision-making. Figure 2, for instance, shows the information flow in an advanced decision-making model known as 'systems learning' (Perdicoúlis, 2010, pp.42–44), with the additional 'XYZ' labelling that serves for the explicit definition of the planning problem (Perdicoúlis, 2010, 58–66).
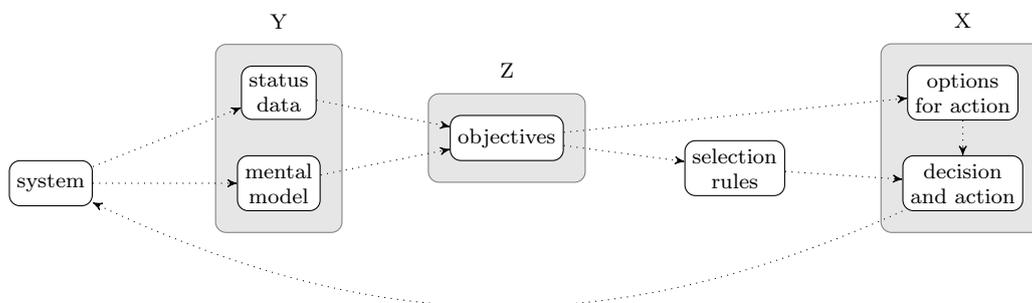

FIGURE 2   Information flow and 'XYZ' labels in the systems-learning decision-making model

The 'XYZ' definition of the planning problem (Figure 3) is practically a visualisation of reasoning, including 'logical causality' in dashed arrows (e.g. means, requires, therefore) and 'physical causality' in solid arrows (e.g. provokes, causes) — (Perdicoúlis, 2011b).
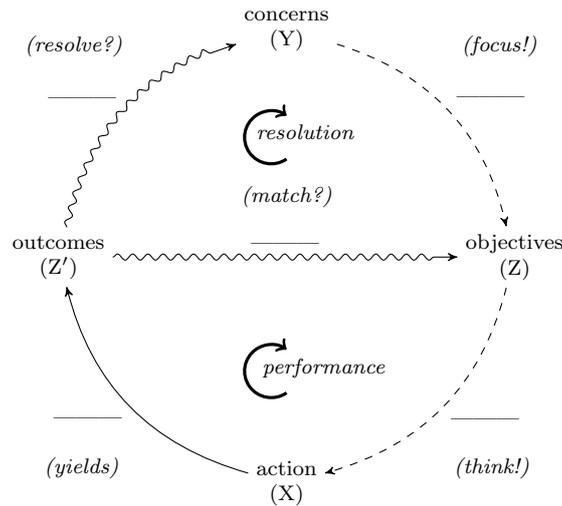

FIGURE 3   'XYZ' problem template with guidance (in parentheses) for the completion of the blanks

4   Discussion

The visualisation breakthrough of SF2™ stands behind the Explicit Planning™ *modus operandi*, conducting to system knowledge, visual reasoning, and a structured problem definition (Perdicoúlis, 2010, 2014). Nonetheless, 'explicit' should not necessarily mean 'indiscriminately shared': the control of information (i.e. 'who hears what') is the responsibility of each planning administration. Hence, SF2™ should be applied with discretion: its value is in *training* people to reason and plan, rather than as a 'sharing protocol'.

Typical logistics issues associated with the implementation of SF2™ include the choice of communication media (e.g. computer, chalkboard, paper) and means of collaboration (e.g. mediated or independent contributions). Learning the 'coding and decoding' rules of the associated diagrams is also a technical issue, easily resolved with exercises and practice.

Regarding the relations of SF2™ with professional praxis, its popularity or 'market share' currently depends on 'word of mouth' — mainly through the academic milieu. Contrary to recent academic 'impact' tendencies (Perdicoúlis, 2013a), take-up rates should not indicate the capacity of the vision for Explicit Planning™.

5   Conclusion

The Structure–Function–Form (SF2™) vision of Systems Planning℠ facilitates the visualisation of intangibles such as structure and function, which is necessary to turn planning explicit. The

deployment of the SF2™ vision is currently through the applied R&D of Systems Planning℠ to city, state, and enterprise affairs.

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