

Where is the design in the organizational design?

Sergey Khromov-Borisov

International School for Social and Business Studies, Slovenia

khromov@sensecraft.eu

Abstract

The author shares the surprising discovery that there are organizational design and “organizational design”. The first is a collection of assorted concepts and practices of systemic analysis, building and rebuilding of various organizations. It exists under many names like “strategic management”, “startups”, “change management”, “business model”, etc. The second is the theory and practice of human resource organizing, stemming from the social sciences, that originally appropriated the very name of organizational design. The article presents the literary review of both fields, the case study analysis of rare successful concepts and tools of the “real” organizational design, and offers the prospects for design community within this uncharted territory.

Keywords: organizational design, design tools, business model, activity-based view, resource-based view, first-, second-, and third-order design, semantic appropriation

AS YOU NAME A BOAT, SO SHALL IT FLOAT

The terms and definitions in management are no less important than the brand names in business. So, we will start with the name of an applied discipline “organizational design” (or “organization design”),¹ the meaning of which seems rather obvious – until we start to dig.

Who needs “organizational design”, and when

Persons in charge of their organizations (we call them managers) strive to keep the status quo by all means – with just two obvious exceptions:

1. Starting the new organization (we call them startups), and
2. Radically reforming the existing one (when no other option has left).

When there is no need in change, no one needs to plan (i.e. design) and implement (again, design)² that change.

¹ The terms “organizational design” and “organization design” are used interchangeably.

When you endeavor something for the first time, it is natural to look for advice in popular (or, better, in scientific) sources. Simple search for the keywords “organization(al) design” delivers wealth of literary sources³ – but even a superficial glance on them reveals something strange.

The whole literary corpus on the “organizational design” (OD) deals with the sociological view of organizations as groups of human beings. The most accepted definitions confirm this observation, e.g.:

“Organization design is conceived to be a decision process to bring about a coherence between the goals or purposes for which the organization exists, the patterns of division of labor and interunit coordination and the people who will do the work.” (Galbraith, 1977, p. 5)

“An organizational design is the plan of an organization's rationally designed structure and mode of operation. The formal structure of an organization is its framework of roles and procedures.” (Clegg, Kornberger, and Pitsis, 2016, p. 517)

However, even the novice manager realizes that an organization comprises much more than just a human component. And the management theory, in the contrast to the organization theory, confirms this:

“There are eight areas in which objectives of performance and results have to be set: Market standing; innovation; productivity; physical and financial resources; profitability; manager performance and development; worker performance and attitude; public responsibility.” (Drucker, 1954, p. 63)

“Management can be described as the process of accomplishing organizational mission, strategies, goals, and objectives through the use of people (human resources), money (financial resources), things (physical resources), and data (informational resources).” (Miles, 2012, p. 8)

Hence the design of an organization, to be fruitful, should embrace all the substantial constituents, taken as a system. Moreover, to be successful its foundation should:

- Minimize the theory-practice gap;
- Offer effective and efficient instruments of design.

Well, it should – but, surprisingly, it does not, in all the mainstream literature. We may call the present situation the “semantic appropriation of definition”.

When it all has gone astray

The most of the reviews on the topic mention Chester Barnard as a founding father of the organization theory – which, in turn, laid the foundation for the organizational design. And nearly all of them repeat his canonical definition of organization: “a system of consciously coordinated activities or forces of two or more persons.” (Barnard, 1938, p. 73). Alas, nobody reads the sources of quotations. The thing is that another Barnard’s definition gives much broader picture:

“A cooperative system is a complex of physical, biological, personal, and social components which are in a specific systematic relationship by reason of the cooperation of two or more persons for at least one definite end. Such a system is evidently a subordinate unit of larger systems from one point of view; and itself embraces subsidiary systems – physical, biological, etc. – from another point of view. One of the systems comprised within a cooperative system, the

² “Design is to design a design to produce a design.” (Heskett, 2005, p. 3).

³ Google Scholar returns 22,200 references to such search (as of 2023 April).

one which is implicit in the phrase "cooperation of two or more persons," is called an "organization" ...” (Barnard, 1938, p. 65)

It is this Barnard’s arbitrary labeling that reduced the object of management and design from his own “cooperative system” down to its social subsystem for many decades. To avoid confusion, we will henceforth refer to the appropriated term as “organizational design”, and to the “real” field of theory and practice as Organizational Design (OD).

The “organizational design” discipline evolved through several schools (Van de Ven and Joyce, 1981, pp. 4–13), few if any of which attempted to overcome the Barnard’s legacy. The “socio-technical” school originated in the famous Tavistock Institute as early as 1949 (Trist, 1981, p. 19) had a prospect to become a fruitful exception. Its proponents a priori admitted that an organization comprises at least a technical component, along with a social. Moreover, they understood “technical” in the much broad sense, as “the tools, techniques, devices, artifacts, methods, configurations, procedures and knowledge used by organizational members to acquire inputs, transform inputs into outputs and provide outputs or services to clients or customers” (Pasmore, 1988, pp. 55–56). Some of them made even one step further, stating that socio-technical system “has, in fact, social, technological and economic dimensions” (Rice, 1958, p. 4). So, there was a chance – alas, it was lost. The initial motivation of the socio-technical school was to fix the purely “technical” approach of the spontaneous design for the organizations governed by the engineers. So, after postulating more adequate definition of the “organization” they immediately drifted away from it to the same parochially social mainstream.

NATURA ABHORRET VACUUM⁴

Le bourgeois gentilhomme

The Molière’s character, Monsieur Jourdain, have been speaking prose without knowing it for more than forty years.⁵ Through even more years, the practitioners and academics tried to define and design organizations with more their components taken into account, without using the already occupied term “organizational design”. Two most general such components, or perspectives, are those of activities and resources.

The distinction – and often the opposition – of the two perspectives goes back to the two ancient Greek philosophic traditions, those of Heraclites (the world as universal flux, *becoming*) and Parmenides (the universal stasis, *being*), Mourelatos (2014). As Van de Ven and Poole (2005) state, “although expressed in different terms, the distinction between viewing reality as consisting of things or processes is deeply embedded in current literature on organization studies”.

In the course of the present discussion more frequently used names are “Activity-based view” (ABV) and “Resource-based view” (RBV).

⁴ Nature abhors vacuum. The exact phrase was coined by François Rabelais in his series of books titled “Gargantua and Pantagruel” in the 1530s but the very idea dates back to Aristotle.

⁵ “The Middle Class Gentleman” (Le Bourgeois Gentilhomme) by Molière (Jean-Baptiste Poquelin, 1622-1673) translated by Philip Dwight Jones, <https://www.gutenberg.org/files/2992/2992-h/2992-h.htm>

Activity-based view (ABV)

Historically, there were several waves of managerial attention to the activity-based view. We can distinguish the “process control”, the “business process management”, and the “value chain” overlapping periods.

The more technical “process control” view dates back to the establishment of mass production on the basis of division of labor, factory system, assembly line and standardization. Its formalization started about a century ago with the introduction of process charts by Frank and Lillian Gilbreth (1921) and the concept of statistical process control (SPC) by Walter Shewhart (1931). Later, SPC has evolved into the Total Quality Management (TQM) movement by Shewhart’s coworkers W. Edwards Deming (1952) and Joseph Juran (1962, pp. 10-1–10-30) and their Japanese disciples (Ishikawa, 1996, p. 63).

The “business process management” (BPM) was born by transferring the manufacturing process practices and tools onto other organizational processes (Walker, 1992). The first documented instance was the IBM Corporation Business Systems Planning (BSP) program launched in 1970 (IBM Corporation, 1975). Predictably, this version of BPM was entirely centered on the information systems. Also, the concepts of “information architecture” and, later, “enterprise architecture” – which can be regarded as a version of OD – accompanied the BPM development. Alas, both concepts were ever since appropriated by the IT profession. The only broadly popular version of the BPM was the early 1990s “business process re-engineering” (BPR) fad that did not last long. Also, the above-mentioned Tavistock socio-technical school independently developed their own version of BPM under the name “unit operations” (Emery, 1966), but it passed entirely unnoticed outside the school even by academics.

The “value chain” approach was offered by the eminent strategy theorist Michael Porter in his 1985 book “Competitive advantage” (Porter, 1985, pp. 33–53) and stays one of the most popular organizational frameworks.⁶ The conceptual difference with all the previously listed ABV approaches is its simplicity. Porter offers a generic ontology of main business activities packing them into easily comprehensible visual presentation. This simplicity explains, at least in part, the sustaining popularity of the value chain. Porter did not stop on this achievement and 11 years later offered the development of his activity-based vision in the form of “activity system” (Porter, 1996).

In addition, the strategy theorists also applied the activity-based view within their “strategy-as-practice” concept (Jarzabkowski, 2005).

Finally, the fundamental work of Thompson (1967) on the coordination of activities may be ascribed to the antecedents of ABV as well. Building upon Thompson’s framework of three types of activity coordination, Stabell and Fjeldstad (1998) amended Porter’s value chain with two more value creation configurations, value shop and value network. The real significance of this quiet revolution still awaits the recognition it deserves.

⁶ Google Scholar returns 1,110,000 references to the “value chain” search (as of 2023 April).

Resource-based view (RBV)

Like its counterpart, the resource-based view is not monolithic approach. Besides the namesake theory, it embraces “competences”, “capabilities”, “dynamic capabilities”, etc. (there is an ongoing debate whether they all are analogous or different entities). Historically, sociologist Philip Selznick seems to be the first in this field, when introducing the notion of “distinctive competence” (Selznick, 1957, pp. 42–56) – one of important intangible resources, as we understand it now. Then economist George Richardson introduced the term “capabilities” of the organization (Richardson, 1972), and the presently widely accepted “resource-based view” was laid by the seminal article by Birger Wernerfelt (1984). In the parallel stream of the “evolutionary theory” of the firm Nelson and Winter (1982) amended the notion of capabilities with those of “routines” and “skills” as organizational and personal capabilities correspondingly. Prahalad and Hamel (1990) offered “core capabilities” and, finally, Teece et. al. (1997) developed the concept of “dynamic capabilities”. Several comprehensive reviews describe origins and development of the field (Foss, 1997, pp. 3–18; Sanchez, 2001, pp. 143–157; Barney and Arikan, pp. 124 –188). Some researchers also derive the knowledge-based theory of the firm from the resource-based view (Grant, 109-122), and others combine the latter with the resource dependency theory (RDT) as the inside and outside perspectives of the organization’s resources (Fraczkiewicz-Wronka and Szymaniec, 2012, pp. 16-29).

Resources plus activities

An economist Edith Penrose is commonly praised as an originator of the RBV. She did define the organization (the industrial firm) as a collection of productive resources. But her distinctive achievement was understanding that “it is never *resources* themselves that are the ‘inputs’ in the production process, but only the *services* that the resources can render,” where “resources consist of a bundle of potential services and can, for the most part, be defined independently of their use, while services cannot be so defined, the very word ‘service’ implying a function, an activity.” (Penrose, 2009, p. 22) This means that Penrose combined resources and activities into the integrated productive system, i.e. organization. Unfortunately, her pioneering approach passed unnoticed and for more than half a century the “resource-based view” and “activity-based view” crystallized into the two not merely distinctive, but competing approaches.

Rare attempts to bring together ABV and RBV repeated occasionally,⁷ but never reached the mainstream. As for the full-fledged integration, we can find just solitary examples with no or little followers (Mathews, 2006; Grandori and Soda, 2006, Gaya, 2016).

Quite separate field that unites the resources and activities in its way is system dynamics. It was invented in mid-1950s by the MIT scientist Jay Forrester (1961) and popularized only in mid-1990s by Peter Senge (1990) (without ever using its name though). System dynamics presents any organization as a system of stocks and flows, with multiple feedback loops that generate counterintuitive nonlinear behavior. Being in essence the computer simulation instrument, the system dynamics needs technical skills that prevents it from the widespread acceptance. The metaphor of stocks and flows appears in

⁷ For instance, Richard Rumelt explained his “strategic firm” as “characterized by a bundle of linked and idiosyncratic resources and resource conversion activities” in (Rumelt, 1984, pp. 556-570). It is characteristic that all the citing literature reckons Rumelt in the pure RBV school. See also (Ray, Barney and Muhanna, 2004, pp. 23-37; Sheehan and Foss, 2007; Lewis and Gregory, 1996; pp. 144-164).

the economic literature as well (Dierickx and Cool, 1989), but it keeps focus on the resources, seeing the flows as their purely mathematical dynamics, not as the complementary configuration of activities.

More recent implementation of system dynamics principles is the outstanding methodology being developed by Göran Roos for the last 30 years (Roos, 2019). It synthesizes RBV, ABV (through system dynamics and Stabell and Fjeldstad's value configurations), and the theory of measurement. On the theoretical side, it tries to overcome the drawbacks of the classical RBV, and on the practical side it creates a unique instrument for analysis, measurement, and (re)design of the strategic resource configuration.

Yet another (and most popular of all) attempt worth mentioning is the “strategy maps” OD tool offered by Robert S. Kaplan and David P. Norton (2004) as a complement to their “Balanced Scorecard” performance measurement instrument.

Gradual evolution

Probably due to unsatisfied demand from the management profession, several classical OD scholars made some humble moves to more inclusive concepts. The most known of them is Jay Galbraith who offered the only broadly popular concept in this field, the 5-element “Star Model”. He adjusted this model several times, gradually adding ABV and RBV elements into it. First, he expanded his 1970s model element “Information and decision processes” (Galbraith, 1977, p. 31) to more integral “Processes” comprising business processes in their modern understanding (Galbraith, 1995, p. 14), and later added the sixth element “Capabilities” (Galbraith and Kates, 2007, p. 3).

Much less known is the approach suggested by other OD veterans, Michael Tushman and David Nadler (1997). They offered the concept of “organizational architecture” (not to be confused with the enterprise architecture mentioned above) and the “congruence model” to describe its design.

To wind up, most of the efforts to build up the applied OD discipline outside its appropriated sociological version did not succeed. ABV and RBV keep on living their separate and contradicting lives. Rare attempts to synthesize them did not gain momentum. Moreover, even being combined, all the reviewed above approaches lack such important element of organization as its product, or, more precisely, the value proposition (Lanning and Michaels, 1988).

ENTER BUSINESS MODEL CANVAS

Since the first publication, millions of managers and consultants use the Business Model Canvas (BMC)⁸ without realizing that it is, in essence, an OD instrument (recall Monsieur Jourdain again). There are dozens of frameworks bearing the name “business model” (Alexander Osterwalder, Yves Pigneur and Christopher L. Tucci, 2005; Burkhart, Julian Krumeich, Dirk Werth and Peter Loos, 2011; Wirtz et. al., 2016) but only one of them became so successful. Is it a pure game of chance, or winning marketing strategy – or there is something else in this exact realization?

To answer this question, one should formulate the criteria of success. We offer the following list:⁹

- Comprehensive model of organization as a system (ontology)

⁸ By the book authors' statement, <https://www.strategyzer.com/books/business-model-generation>

⁹ The author compiled it on the basis of the BMC co-creators research (Avdiji, Elikan, Missonier, and Pigneur, 2020, pp. 695-734) confirmed by his own experience and a series of expert interviews.

- Relative simplicity and/or steep learning curve
- Clear visual representation
- Self-education option (availability of step-by-step guides)
- Universality (flexibility across industries, business scale, geography, etc.)
- Fostering group work
- Assistance in solving “wicked problems”
- Seamless interface with the other management tools
- Solid theoretical base

Building upon this list it is possible to put forward a hypothesis for the future research regarding success factors for various managerial concepts and tools.

As of yet, we can make more obvious statement: The Business Model Canvas eventually embraces both ABV and RBV, as well as value proposition. Moreover, BMC offers a generic ontology of nine main organizational elements while leaving the room for design customization by filling in individual constituents for each element. Such combination of simple fixed framework with lower level flexibility seems to be the key to the evident popularity of this instrument. Take notice that only the two other popular OD concepts, the Star Model and the value chain, offer at least three of our success factors: (1) simplicity on the base of (2) generic ontology, and (3) visual representation.

But where is the design in the organizational design?

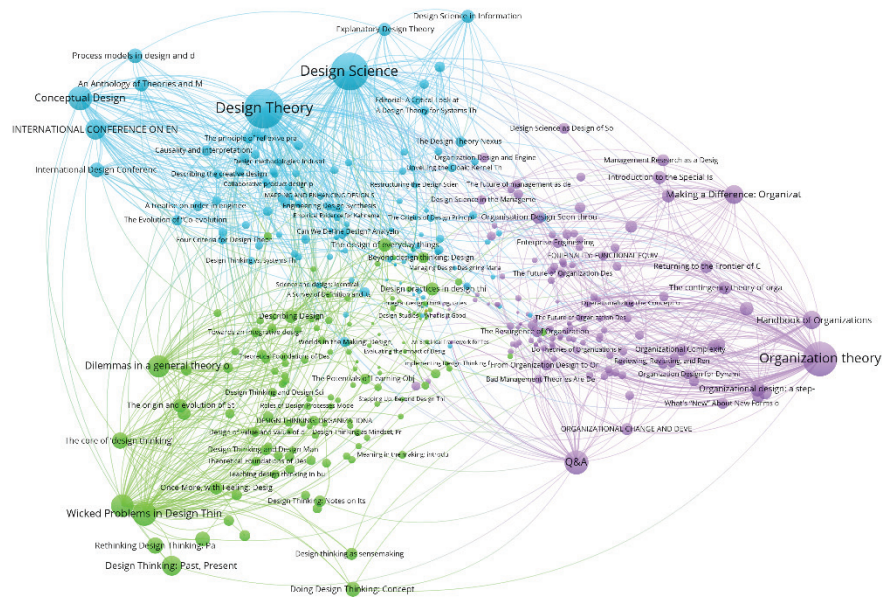
One of the most amazing results of the bibliographic research in this field is that overwhelming majority of works uses the word “design” without addressing the very discipline of design, be it theory, practice, or research. The result of bibliometric analysis¹⁰ is presented at the Figure 1. It demonstrates nearly zero overlapping of the three thematic fields: Organizational design, Design science, and Design thinking.¹¹

This phenomenon may be even bigger cause of the present unsatisfactory state of the OD than previously demonstrated semantic appropriation of the term. On the flip side there are great opportunities for transdisciplinary research.

Figure 1. Co-citation map for three thematic fields: Organizational design (violet), Design science (cyan) and Design thinking (green).

¹⁰ The research methodology is the following: (1) references collection through the snowballing method; (2) forming the text corpus in PDF files; (3) metadata extraction with the Zotero application; (4) citations extraction by means of Python plugin; (5) network building with the Gephi application; (6) network analysis with the VOSviewer software.

¹¹ The absence of interaction between Design science and Design thinking is quite remarkable by itself.



The model case of the Business Model Canvas

The creators of the BMC never connected it to the OD directly – probably to avoid the semantically appropriated term. Though they mention synonymous “design of enterprises” in the very beginning of their book (Osterwalder and Pigneur, 2010, p. 3), then repeat “We design organizations, strategies, business models, processes, and projects.” (Osterwalder and Pigneur, 2010, p. 125). Also they devoted a chapter to the use of design principles and techniques within the BMC implementation.

But the designerly uniqueness of the Business Model Canvas is much deeper than just applying design within it. It is most uncommon instance of the OD framework that was *ab initio* developed following the basic principles of the design science – we may call it second-order design, or meta-design. Its co-creators presented the case analysis in their recent paper that passed nearly unnoticed¹². By applying the design science research methodology to their own three projects (including BMC) they elaborate the approach they call “design theory for visual inquiry tools” (Avdiji et. al, 2020). This approach allows both the analysis of the existing management tools and deliberate design of new ones. It comprises nine principles to design such tools and five propositions to test their comparative advantages.

The secondary case of the Intellectual Capital Navigator¹³

Avdiji et. al. call to develop their research by means of the design science, i.e. by creating new management tools along their design principles and testing them along their propositions. However, there is a faster alternative path: to analyze an already existing design case (Avila and Orestis Terzidis, 2017). After broad search, we have selected several rare descriptions of OD instrument development, namely the “Intellectual Capital Navigator” (ICN) by already mentioned in the RBV section Göran

¹² Just 47 citations as of 2023 April (by the Google Scholar data).

¹³ The historical name “Intellectual Capital Navigator” is misleading and may be responsible for less than deserved popularity of this tool. Much more adequate name would be “strategic resource configuration”.

Roos (2019), “Quality Function Deployment” by its main author Yoji Akao (1990), and “Process Chain Network” by Scott Sampson (2015). In the present article we analyze the ICN secondary case. The summary for the design project is presented in Table 1. and the comparative results for the two case studies in Table 2.

Table 1. Design project summary for the Intellectual Capital Navigator.

Cycle	1: Defining customer requirements	2: Translating the requirements into a valuable solution	3: Improving usability of the solution
Period*	1994 to 1999	1999 to 2004	2004 to 2005
Problem domain	Deficiency of available concepts and tools for analysis, reporting and management of intellectual capital	Deficiency of available concepts and tools for analysis and utilization of organizational resources	The estimation tool is not intuitive enough for developing resource configuration
Design requirement	How to define and measure intellectual capital?	How to define, measure, and orchestrate organizational resources?	How does one test and evaluate resource configuration?
Solution domain (artifacts)	- Intellectual capital ontology - IC Distinction Tree as an organizational model	- Organizational resources ontology - Capturing dynamics (concept of mutual transformation) - Intellectual Capital Navigator - Estimation tool (IC Index)	- New estimation tool (effector plot) - New analysis perspective (value creation logics) - Step-by-step instructions - Dissemination of accumulated knowledge (a book ¹⁴)
Joint inquiry techniques	- Defining - Ideating - Prototyping - Testing	- Re-defining - Ideating - Prototyping - Testing	- Fine-tuning - Testing - Implementing

*The dates for each cycle are rough estimation allocated by the dates of relevant publications.

The retrospective description of design project by Göran Roos strikingly resembles the description by Avdiji et. al., hinting at some general underlying principles:

“The tool’s development has taken the form of an iterative process with the following elements: A theoretical construct (for example the tool) is synthesised or developed; The theoretical construct is applied in a practical application; The construct, the application process and the outcome is evaluated for strengths and weaknesses; The strengths are retained and a search takes place for knowledge domains that can contribute to reducing the identified weaknesses.” (Roos, 2019, pp. 14)

Table 3. Comparison of the primary (BMC) and secondary (ICN) case study analyses.

Design Principles	Business Model Canvas	Intellectual Capital Navigator
Conceptual model		
1.1. Frame	Business Model ontology (mutually exclusive and collectively exhaustive)	Intellectual capital ontology (mutually exclusive and collectively exhaustive)
1.2. Rigor & Relevance	Business models body of knowledge Extensive testing and refining	RBV body of knowledge Extensive testing and refining

¹⁴ Roos, Pike, and Fernström, 2005.

1.3. Parsimony	Strategic level (9 building blocks)	Strategic level (5 building blocks)
Shared visualization		
2.1. Functionality	Exploration, hypothesis generation, and presentation through generic ontology (shared design space) Complementary design tool (Value Proposition Canvas)	Exploration, hypothesis generation, and presentation through generic ontology (shared design space) Complementary estimation tool (effector plot)
2.2. Arrangement	Business Model Canvas (rigid arrangement)	Intellectual Capital Navigator (flexible arrangement)
2.3. Facilitation	Business Model Canvas template	Rich visual guidebook
Directions for use		
3.1. Ideation	Business Model Canvas filling in	Resource Distinction Tree composition
3.2. Prototyping	Group discussion	Group discussion
3.3. Presentation	Sticky notes (material or virtual) over the Canvas	Intellectual Capital Navigator

Based upon a framework from Avdiji et. al., “A design theory for visual inquiry tools”.

Even the brief analysis and comparison of the two independent cases demonstrate the common ground in the design principles application to the organizational design – and it is not a tautology.

ORGANIZATIONAL DESIGN BLUE OCEAN FOR DESIGNERS

Our research, the first of its kind, demonstrates what a *tabula rasa* is the whole field of “real” organizational design for both theorists and practitioners of design. The design science is much less mature than the organizational science, but, being already armed with its own specific theories and tools, it has enormous opportunity in turning its attention to such a rare greenfield cross-disciplinary opportunity, though being late for about a century.

Theoretical implications

Our pilot research reveals two discoveries:

1. Despite the ingrained use of the word “design”, the historically formed “organizational design” discipline mysteriously never crossed its paths with any other design-related discipline.
2. Principles of design research and design science do produce valuable results when applied to the organizational design field.

We propose the research agenda in several subfields simultaneously:

- First-order design being applied to the very field of OD
- Second-order design being applied to the design of the OD tools
- Third-order design being applied to the design of organizational artefacts by the tools’ users.
- Design of complementary toolkits for OD

Practical implications

The proposed cross-disciplinary approach should help practitioners to choose OD instruments more consciously, and even develop their own scientifically based OD tools and toolkits – on the contrary to the presently reigning intuition and fashion.

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