Entrepreneurship as Design (Science)

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CHALMERS
UNIVERSITY OF TECHNOLOGY

Agenda

1) What is Design Science?
2) Entrepreneurship as Design
3) Journal of Business Venturing Design

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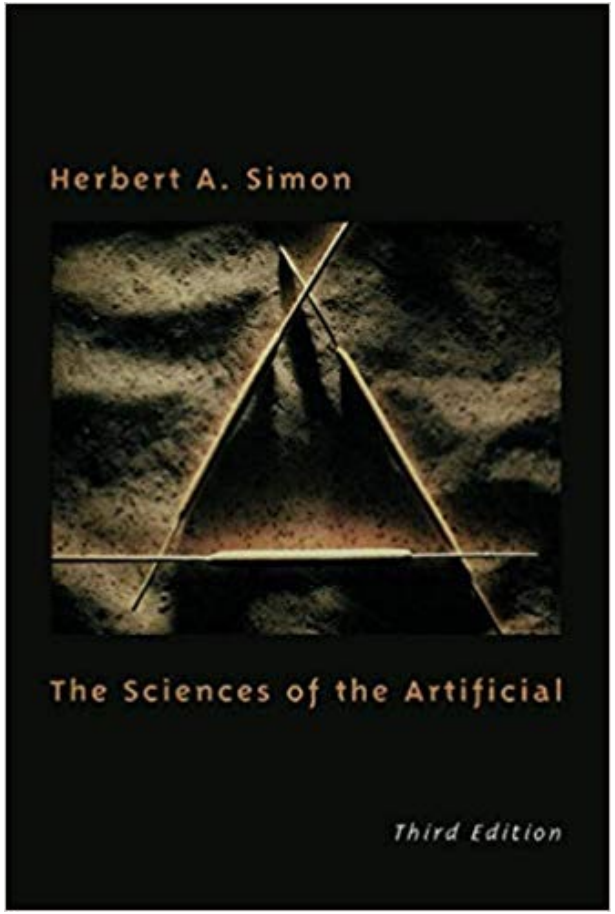
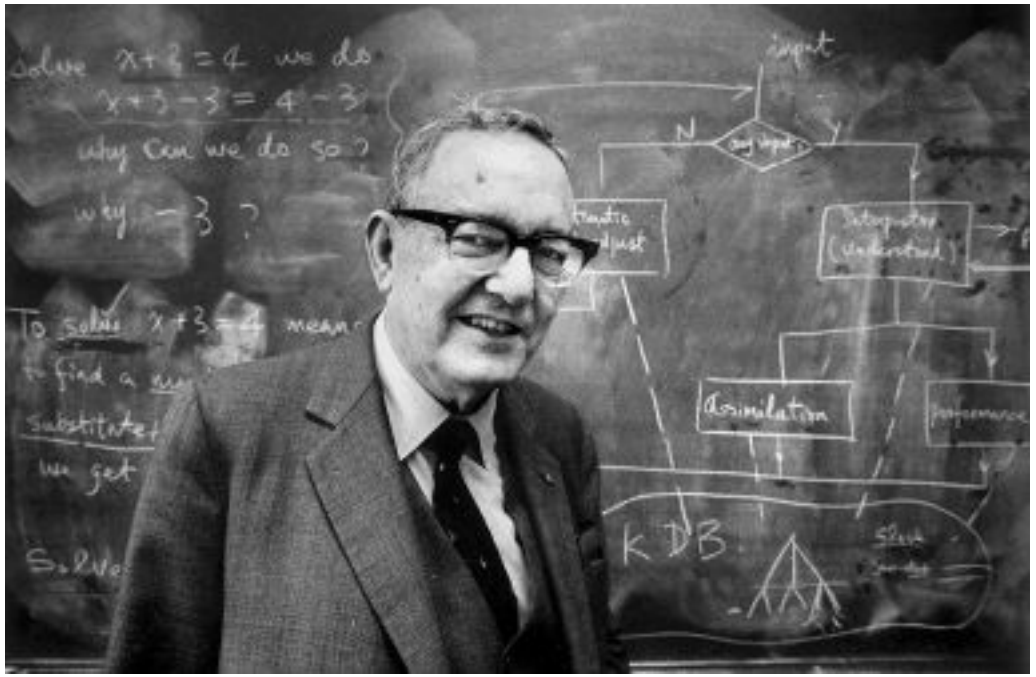
Describing the Natural vs Designing the Artificial





Natural Things and Designed Artifacts

”The natural sciences are concerned with how things are.

Natural Things and Designed Artifacts

”The natural sciences are concerned with how things are.

Design is concerned with how things ought to be with devising artifacts to attain goals.”
(Simon 1996: 114).

Natural and Designed

"If natural phenomena have an air of 'necessity' about them in their subservience to natural law,

Natural and Designed

"If natural phenomena have an air of 'necessity' about them in their subservience to natural law, artificial phenomena have an air of 'contingency' in their malleability by environment" (Ibid: xi)

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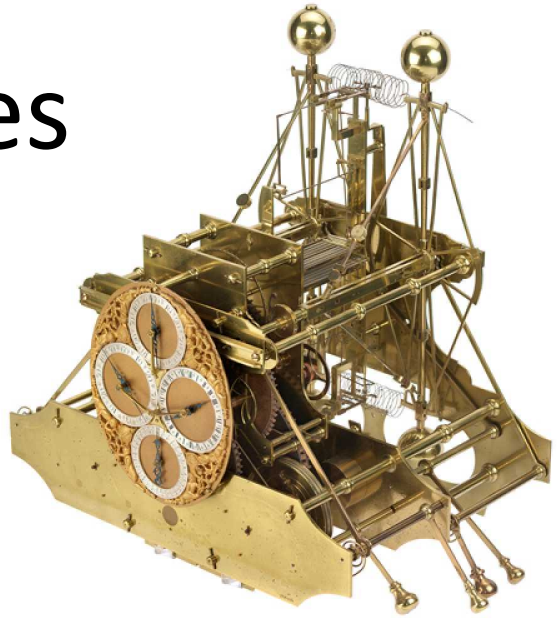
"An artifact can be thought of as a meeting point an *interface* in today's terms between an *inner* environment (the substance and organization of the artifact itself) and an *outer* environment (the surroundings in which it operates)" (Ibid: 6).

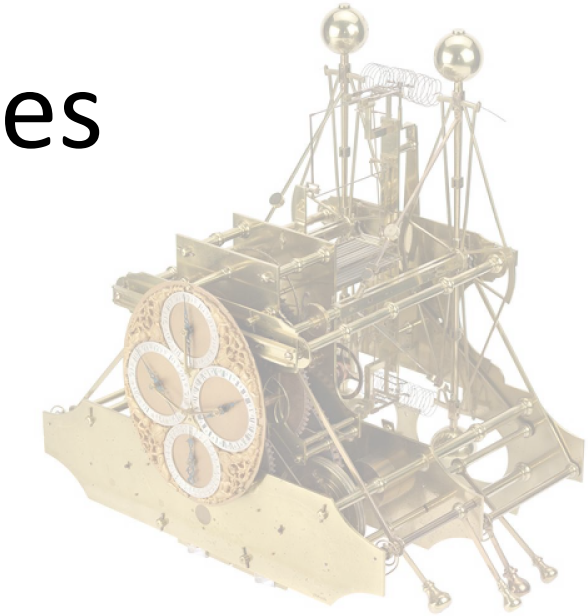
Artifacts as Interfaces



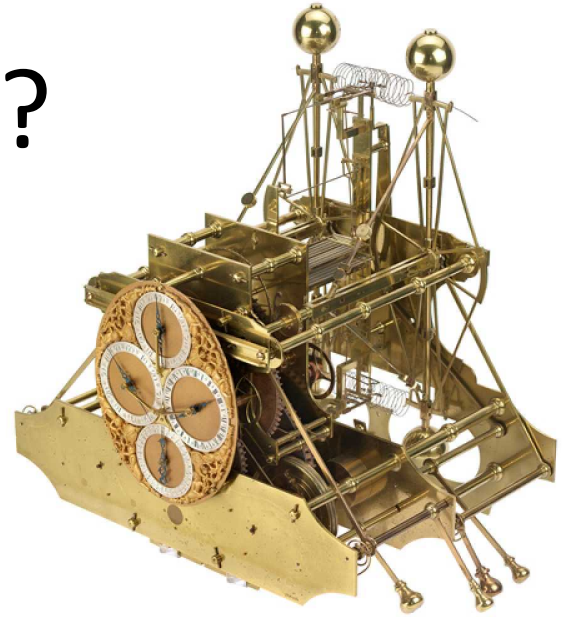
”Whether a clock will in fact tell time depends on its internal construction and where it is placed.

Artifacts as Interfaces

"Whether a clock will in fact tell time depends on its internal construction and where it is placed. Whether a knife will cut depends on the material of its blade and the hardness of the substance to which it is applied."
(Ibid: 113)



A Science of Design?



” What can we say about it? What is there to study besides the boundary sciences those that govern the means and the task environment?” (Ibid: 113)

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   - Entrepreneurship as a Design Process
   - Entrepreneurship as a Design Science
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Entrepreneurship as a Design Process

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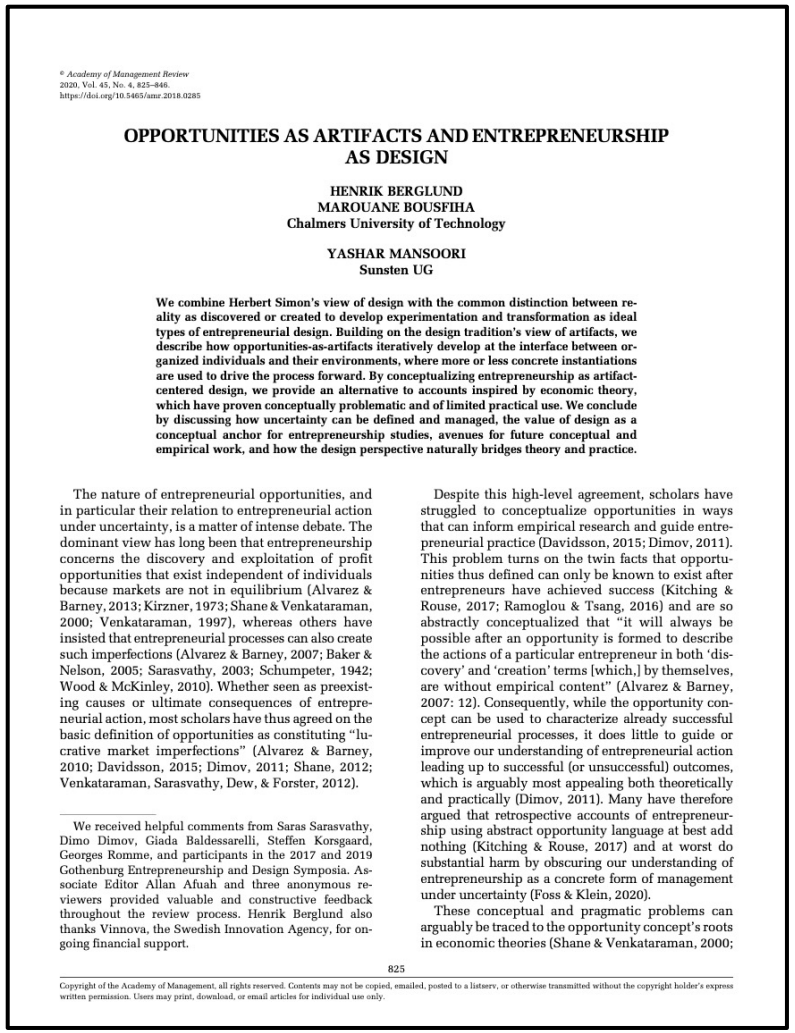
"design processes are frequently guided by quite abstract goals and vague notions of "interestingness" (Simon, 1996), which are themselves clarified with the aid of intermediate artifacts employed throughout the process."
(Berglund et al. 2020: 827)



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OPPORTUNITIES AS ARTIFACTS AND ENTREPRENEURSHIP AS DESIGN

HENRIK BERGLUND
MAROUANE BOUSFIHA
Chalmers University of Technology

YASHAR MANSOORI
Sunsten UG

We combine Herbert Simon's view of design with the common distinction between reality as discovered or created to develop experimentation and transformation as ideal types of entrepreneurial design. Building on the design tradition's view of artifacts, we describe how opportunities-as-artifacts iteratively develop at the interface between organized individuals and their environments, where more or less concrete instantiations are used to drive the process forward. By conceptualizing entrepreneurship as artifact-centered design, we provide an alternative to accounts inspired by economic theory, which have proven conceptually problematic and of limited practical use. We conclude by discussing how uncertainty can be defined and managed, the value of design as a conceptual anchor for entrepreneurship studies, avenues for future conceptual and empirical work, and how the design perspective naturally bridges theory and practice.

The nature of entrepreneurial opportunities, and in particular their relation to entrepreneurial action under uncertainty, is a matter of intense debate. The dominant view has long been that entrepreneurship concerns the discovery and exploitation of profit opportunities that exist independent of individuals because markets are not in equilibrium (Alvarez & Barney, 2013; Kirzner, 1973; Shane & Venkataraman, 2000; Venkataraman, 1997), whereas others have insisted that entrepreneurial processes can also create such imperfections (Alvarez & Barney, 2007; Baker & Nelson, 2005; Sarasvathy, 2003; Schumpeter, 1942; Wood & McKinley, 2010). Whether seen as preexisting causes or ultimate consequences of entrepreneurial action, most scholars have thus agreed on the basic definition of opportunities as constituting "lucrative market imperfections" (Alvarez & Barney, 2010; Davidsson, 2015; Dimov, 2011; Shane, 2012; Venkataraman, Sarasvathy, Dew, & Forster, 2012).

We received helpful comments from Saras Sarasvathy, Dimo Dimov, Giada Baldessarelli, Steffen Korsgaard, Georges Romme, and participants in the 2017 and 2019 Gothenburg Entrepreneurship and Design Symposia. Associate Editor Allan Afuah and three anonymous reviewers provided valuable and constructive feedback throughout the review process. Henrik Berglund also thanks Vinnova, the Swedish Innovation Agency, for ongoing financial support.

Despite this high-level agreement, scholars have struggled to conceptualize opportunities in ways that can inform empirical research and guide entrepreneurial practice (Davidsson, 2015; Dimov, 2011). This problem turns on the twin facts that opportunities thus defined can only be known to exist after entrepreneurs have achieved success (Kitching & Rouse, 2017; Ramoglou & Tsang, 2016) and are so abstractly conceptualized that "it will always be possible after an opportunity is formed to describe the actions of a particular entrepreneur in both 'discovery' and 'creation' terms [which,] by themselves, are without empirical content" (Alvarez & Barney, 2007: 12). Consequently, while the opportunity concept can be used to characterize already successful entrepreneurial processes, it does little to guide or improve our understanding of entrepreneurial action leading up to successful (or unsuccessful) outcomes, which is arguably most appealing both theoretically and practically (Dimov, 2011). Many have therefore argued that retrospective accounts of entrepreneurship using abstract opportunity language at best add nothing (Kitching & Rouse, 2017) and at worst do substantial harm by obscuring our understanding of entrepreneurship as a concrete form of management under uncertainty (Foss & Klein, 2020).

These conceptual and pragmatic problems can arguably be traced to the opportunity concept's roots in economic theories (Shane & Venkataraman, 2000;

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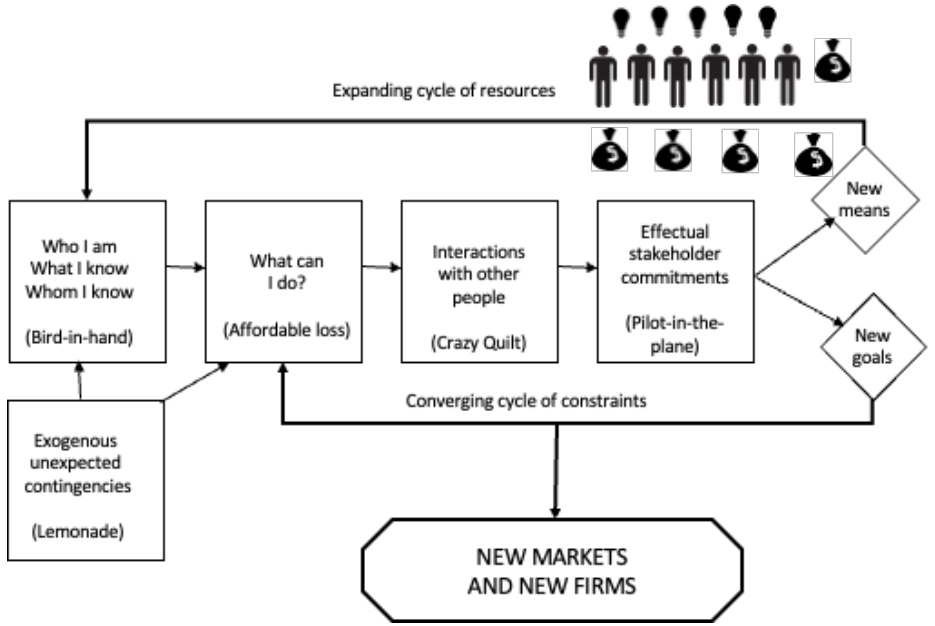
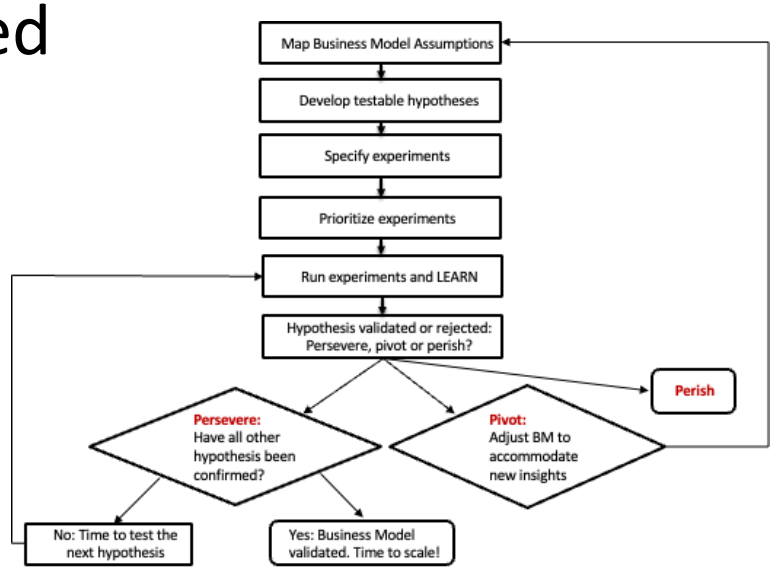




Abstract and Concrete

abstract artifacts, which are immaterial and sometimes quite vague concepts or ideas, and more

concrete instantiations of these abstract artifacts through which they are expressed and enacted

Software Artifacts

abstract artifacts, which are immaterial and sometimes quite vague concepts or ideas, and more

Narratives

Theories

Pseudocode

concrete instantiations of these abstract artifacts through which they are expressed and enacted

Operational software

Instantiated in HW

Product Artifacts

abstract artifacts, which are immaterial and sometimes quite vague concepts or ideas, and more

concrete instantiations of these abstract artifacts through which they are expressed and enacted

Entrepreneurial Artifacts

abstract artifacts, which are immaterial and sometimes quite vague concepts or ideas, and more

concrete instantiations of these abstract artifacts through which they are expressed and enacted

"opportunity" (Shane and Venkataraman, 2000)

"new venture idea" (Davidsson, 2015)

"entrepreneurial theory" (Felin and Zenger, 2009)

"symbolic blueprint" (Dimov, 2011)

"business model ontology" (Osterwalder, 2004)

"business plan" (Gruber, 2007)

"venture narrative" (Lounsbury and Glynn, 2000)

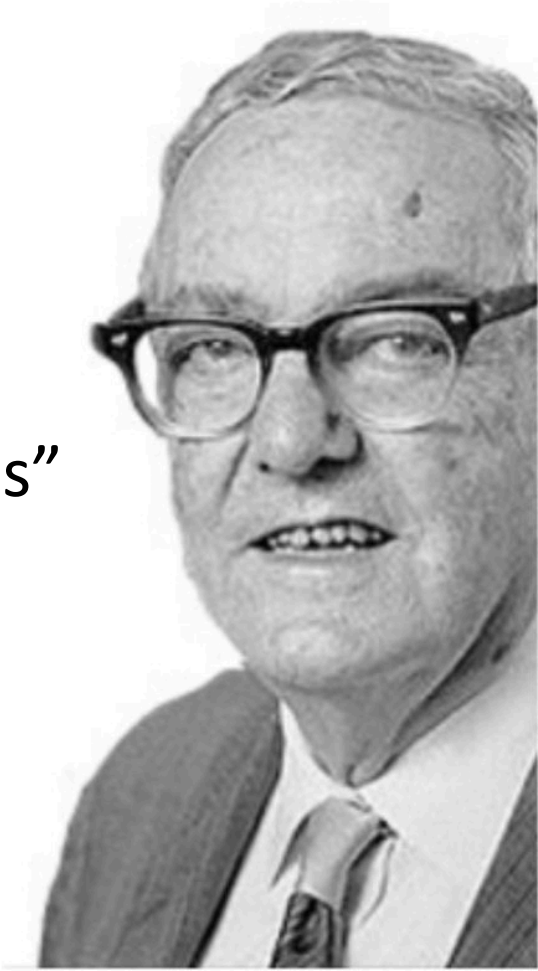
"product prototype" (Bogers and Horst, 2013)

"MVP" (Ries, 2011)

"Landing Page" (Camuffo et al. 2019)

Individual – Artifact – Environment

"… a relation among three terms:
the purpose or goal,
the character of the artifact,
the environment
in which the artifact performs"
(Simon, 1996: 5).



Individual – Artifact – Environment

(not Individual – Opportunity)

"… a relation among three terms:
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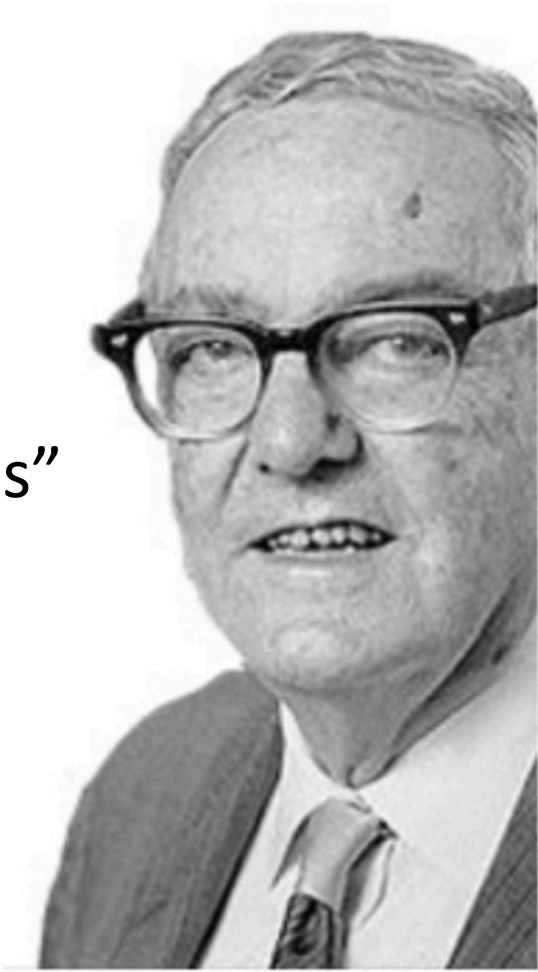

Entrepreneurship as a Design Science

Design, Science, and Humanities

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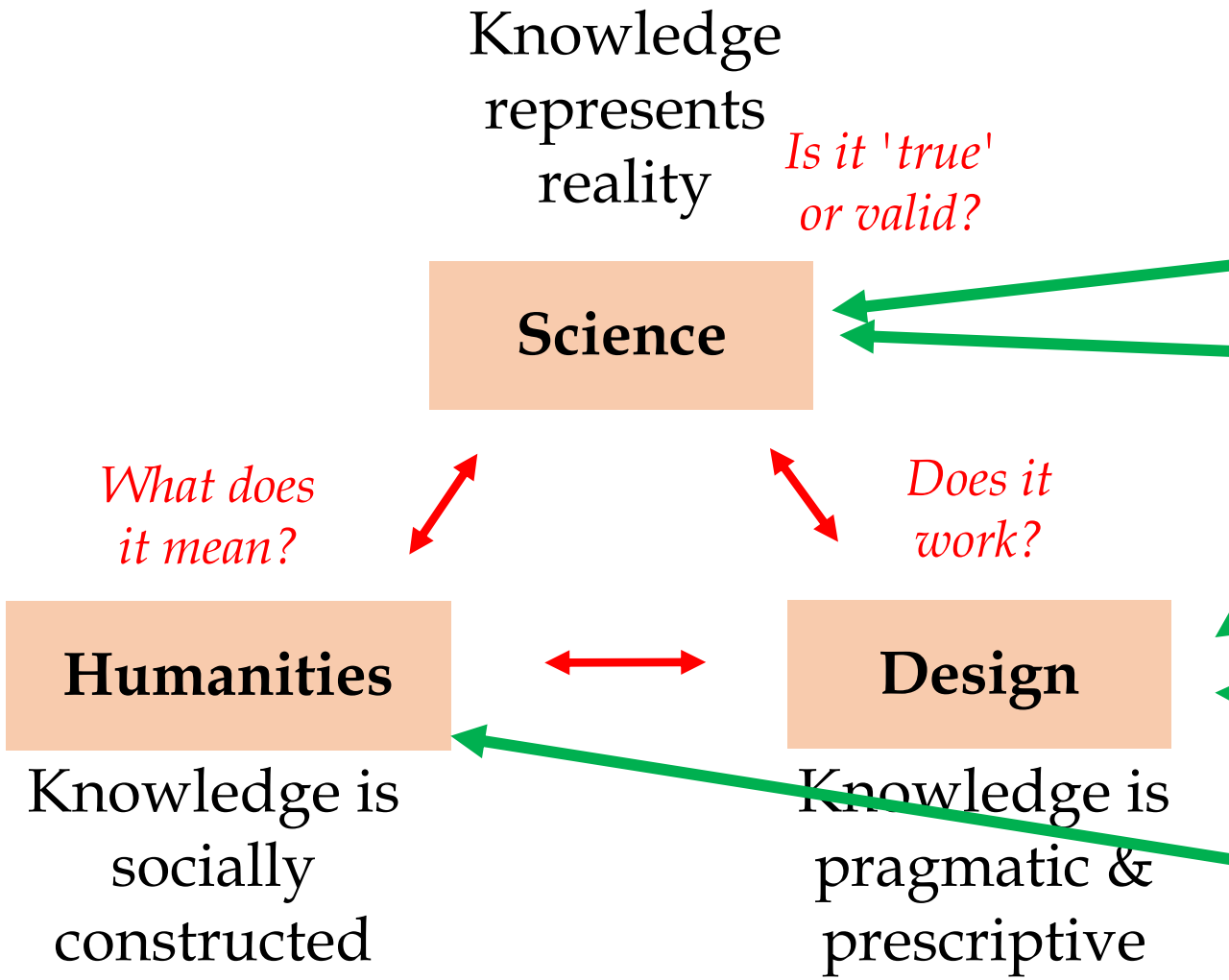

"An artifact can be thought of as a meeting point an *interface* in today's terms between an *inner* environment, the substance and organization of the artifact itself, and an *outer* environment, the surroundings in which it operates. If the inner environment is appropriate to the outer environment, or vice versa, the artifact will serve its intended purpose." (1996: 111).

Chicken metabolism,
Nutritional science,
Demography,
Market research,
…

Is it 'true' or valid?

Science

What does it mean?

Does it work?

Humanities

Design

What is (a worthy) life?
Is it morally defensible to treat sentient beings like this?

Operations analysis,
Financial optimization,
Business modelling,
Organizational design,
…

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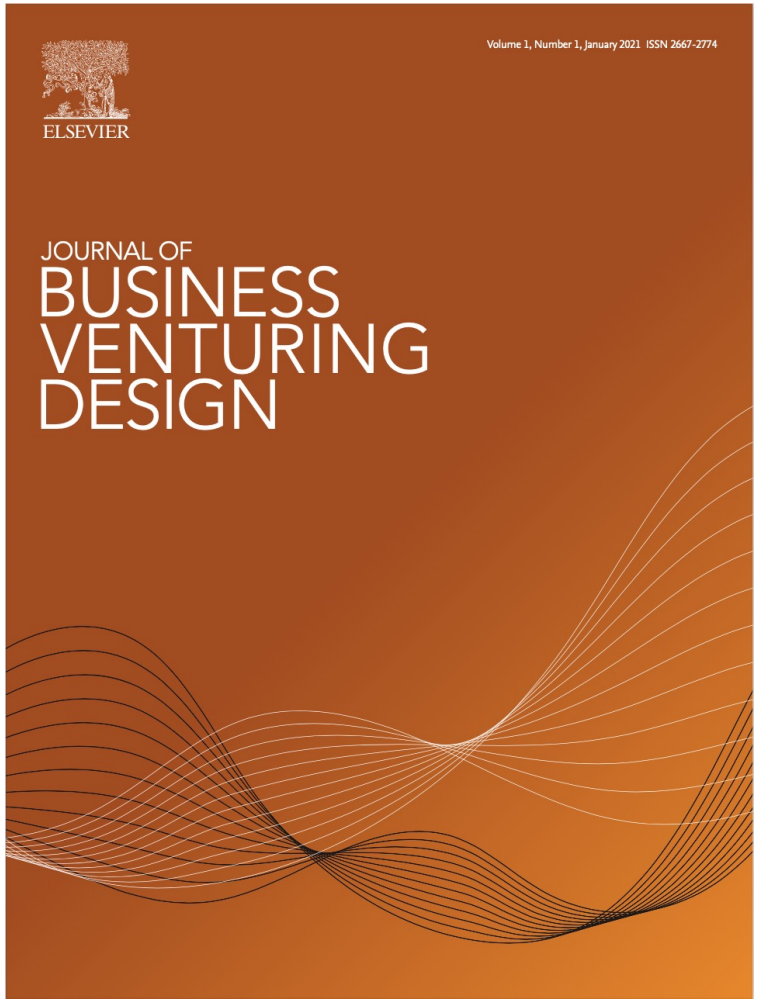
Journal of Business Venturing Design

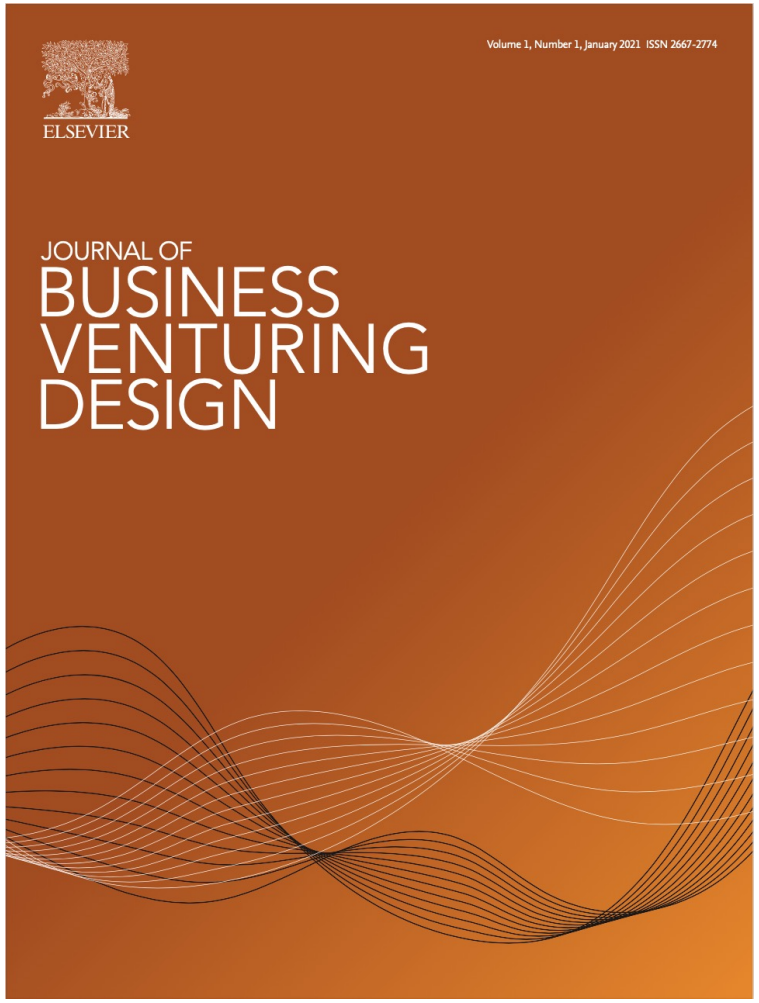


Aims & Scope

"*Journal of Business Venturing Design* publishes original works that advance both theoretical understanding and the practice of entrepreneurship. JBVD does so by regarding entrepreneurship as a form of design to be studied as a design science.

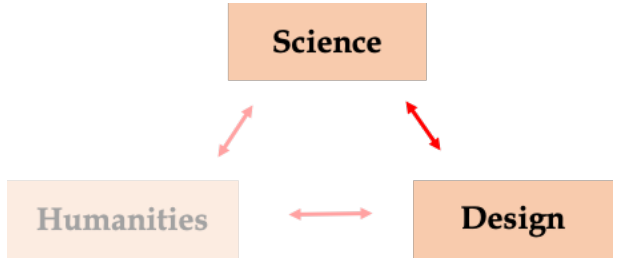
Entrepreneurship as design is broadly defined as the iterative and uncertainty facing process of establishing a new "business" (or "opportunity", "venture", "startup" etc.), typically by working with various intermediate artifacts."

Journal of Business Venturing Design

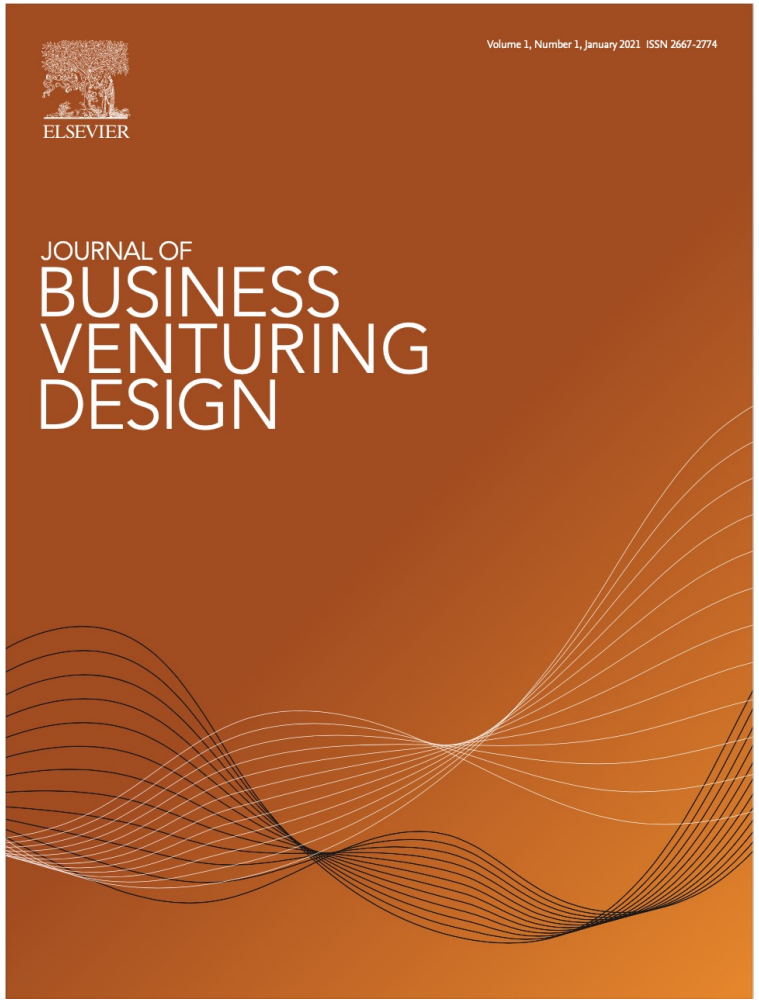


Aims & Scope

"To illustrate, explanatory research seeking a general causal mechanism on the form 'X causes A under condition B' can be turned into an instrumental design principle if X can be manipulated with predictable results."

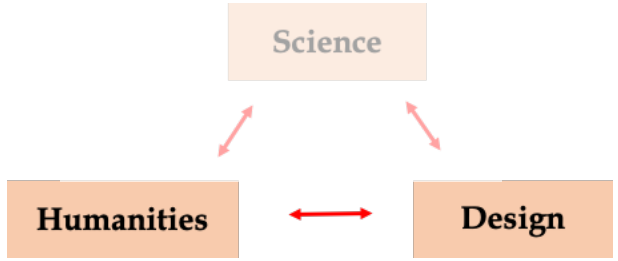


Journal of Business Venturing Design



Aims & Scope

"The instrumentality of design science highlights its ethical dimension. As opposed to purely descriptive or explanatory sciences, design science more directly helps manipulate the world in particular directions, suggesting that design scientists have a potential moral responsibility for the knowledge and tools developed."



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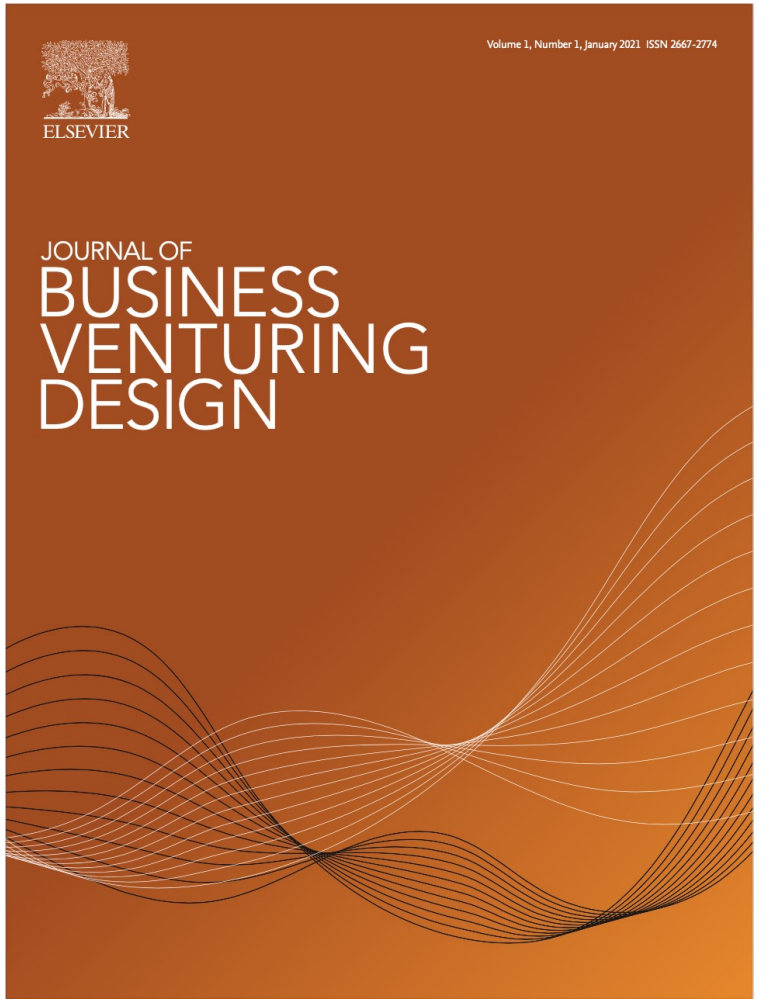

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Sep 9 & 10, Deadline July 1.
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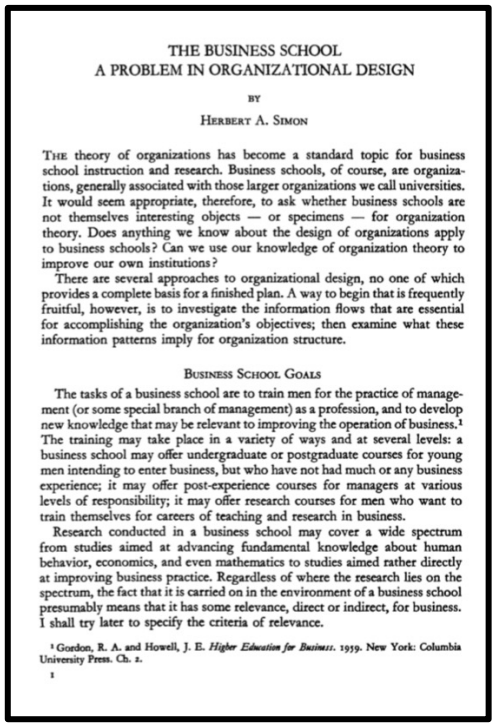
Backup

Design Science in Professional Schools

"…education and training for prospective or present practitioners in the profession and for persons wanting to do teaching and research in the professional school; research to advance knowledge relevant to the practice of the professions"



THE BUSINESS SCHOOL
A PROBLEM IN ORGANIZATIONAL DESIGN

BY

HERBERT A. SIMON

THE theory of organizations has become a standard topic for business school instruction and research. Business schools, of course, are organizations, generally associated with those larger organizations we call universities. It would seem appropriate, therefore, to ask whether business schools are not themselves interesting objects — or specimens — for organization theory. Does anything we know about the design of organizations apply to business schools? Can we use our knowledge of organization theory to improve our own institutions?

There are several approaches to organizational design, no one of which provides a complete basis for a finished plan. A way to begin that is frequently fruitful, however, is to investigate the information flows that are essential for accomplishing the organization's objectives; then examine what these information patterns imply for organization structure.

BUSINESS SCHOOL GOALS

The tasks of a business school are to train men for the practice of management (or some special branch of management) as a profession, and to develop new knowledge that may be relevant to improving the operation of business.[1] The training may take place in a variety of ways and at several levels: a business school may offer undergraduate or postgraduate courses for young men intending to enter business, but who have not had much or any business experience; it may offer post-experience courses for managers at various levels of responsibility; it may offer research courses for men who want to train themselves for careers of teaching and research in business.

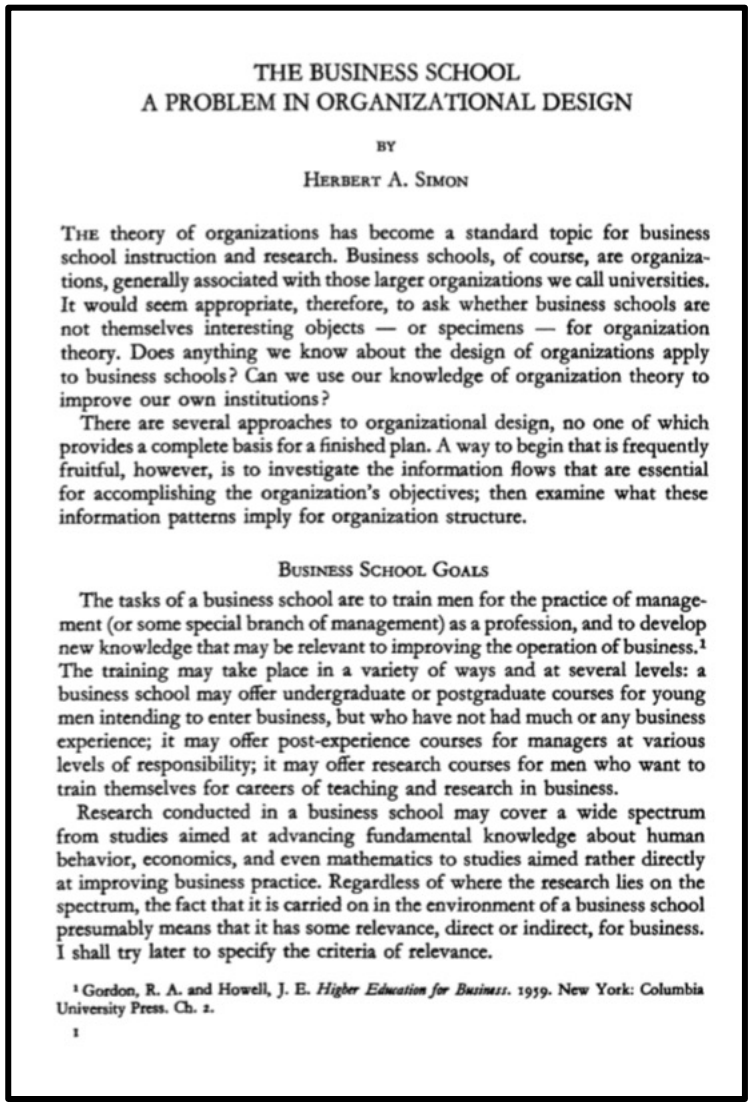
Research conducted in a business school may cover a wide spectrum from studies aimed at advancing fundamental knowledge about human behavior, economics, and even mathematics to studies aimed rather directly at improving business practice. Regardless of where the research lies on the spectrum, the fact that it is carried on in the environment of a business school presumably means that it has some relevance, direct or indirect, for business. I shall try later to specify the criteria of relevance.

[1] Gordon, R. A. and Howell, J. E. *Higher Education for Business*. 1959. New York: Columbia University Press. Ch. 2.

1

Design Science in Professional Schools

"The 'practical' segment of the faculty becomes dependent on the world of business as its sole source of knowledge inputs. Instead of an innovator, it becomes a slightly out-of-date purveyor of almost-current business practice"



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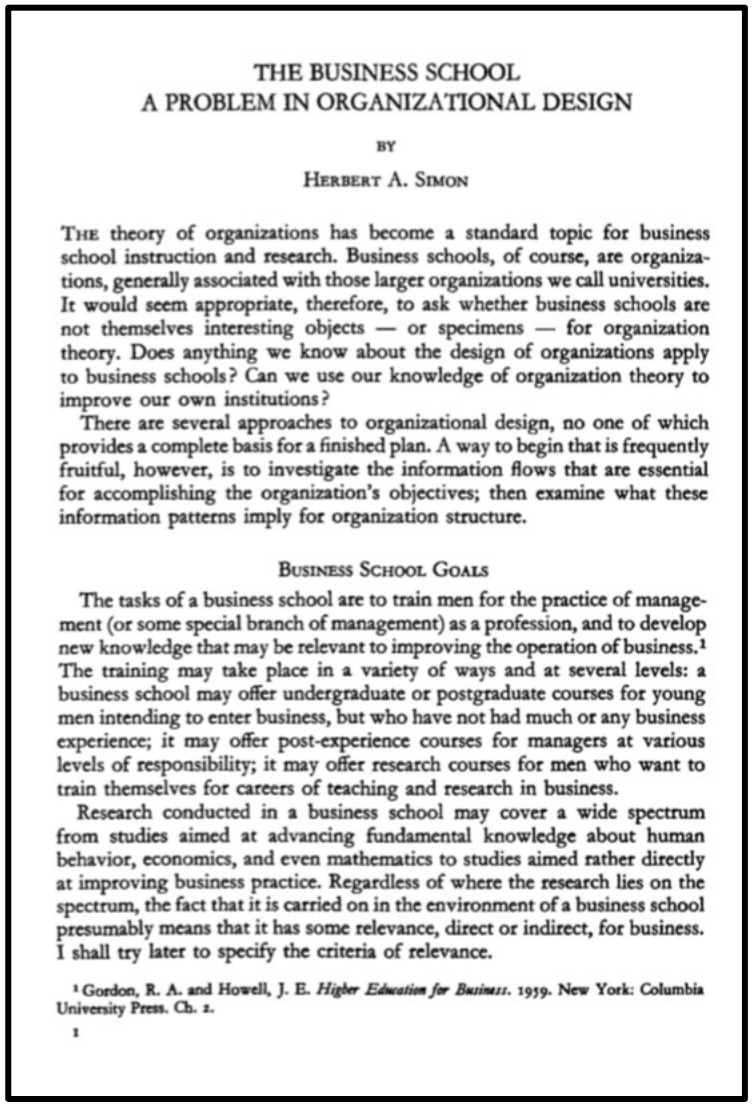
"The discipline-oriented segment of the professional school faculty becomes dependent upon its disciplines of origin for goals, values, and approval. Sealed off from the practitioner's environment, that environment becomes inaccessible and irrelevant to them as a source of data, of research problems, or of development and application of innovations."



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1

Professionally Oriented Institutions

Practice-oriented faculty

discipline-oriented faculty