

LEADERSHIP OF RESPONSIBLE AI:

Responsible Artificial Intelligence Shaping Artifacts

Why Are They Important?



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LEADERSHIP OF RESPONSIBLE AI:

According to the literature, artifacts are defined in a variety of ways.

Livari (2017) suggests the creation of Information Systems (IS) artifacts includes motivations associated with design science. While developing an information system, we must consider the technological solution, the information content, and the social and organizational structure that will utilize the developed system (Livari, 2017).

In addition, some scholars consider the constituent parts of an information system to include an Information Technology (IT) artifact, an information artifact, a design science artifact, and a social artifact (De Leoz and Petter, 2018, Lee et al., 2015).

The presentation of these underlying ideas influences the creation of Responsible AI (RAI) shaping artifacts.

Intro Shaping Artifacts



LEADERSHIP OF RESPONSIBLE AI:

Intro Shaping Artifacts continued

RAI shaping artifacts are identified as artifacts that shape the nature of RAI systems through their influence on design, development, implementation, and monitoring & include attributes such as scientific, ethical, principled, legal, and inclusive employee stakeholder participation as foundational elements (Adams, 2022).

For purposes of this guide, RAI shaping artifacts are policies, frameworks, processes, guidelines, and procedures, etc. While they may live digitally, if necessary, they can be printed.

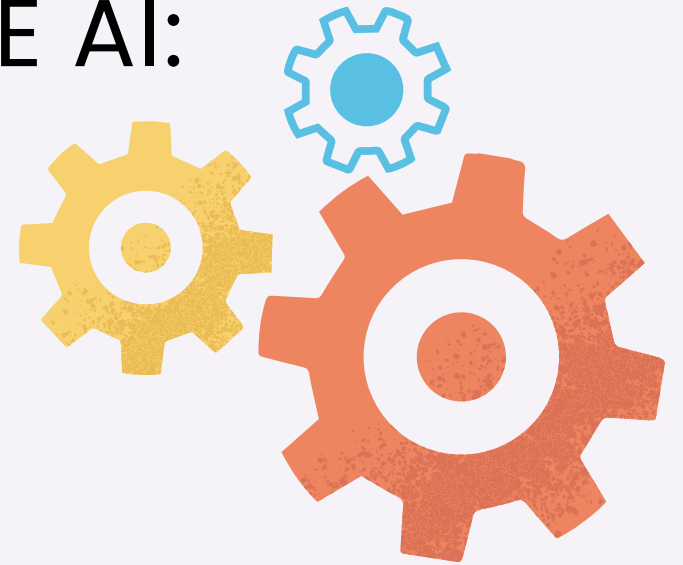
The point is to highlight that shaping artifacts are not the actual Artificial Intelligence (AI) or IS system.

Let's look at the five attributes of Responsible AI "shaping artifacts."



LEADERSHIP OF RESPONSIBLE AI:

1 SCIENTIFIC



Includes components of Design Science and Responsible Research & Innovation, and IS Design and Development that guide a scientific and systematic approach to reasoning, perceiving, decision-making and learning from machine learning, data science and training data.

Bacq & Aguilera (2022), Nagle et al. (2022). Stilgoe (2020), Von Schomberg, et al. (2013), Agerfalk et al. (2021), Bailey and Barley (2020), Gregor (2006), Lee et al. (2015), Livari (2017), McCarthy et al. (2020), Myers (2021), Teodorescu et al. (2021)

LEADERSHIP OF RESPONSIBLE AI:

2 ETHICAL/PRINCIPLED

Ensures AI systems are developed with principles such as but not limited to: AI Virtues, Ethics, Fairness, & Justice.

Berente et al. (2021), Haenlein & Kaplan (2019), Kordzadeh et al. (2022), McCarthy et al. (2020), Mirbabie et al. (2022), Zhou, et al. (2022)



LEADERSHIP OF RESPONSIBLE AI:

3 LEGAL

Ensures adherence to applicable laws such as but not limited to privacy, discrimination, explainability, transparency.

Kordzadeh et al. (2022),
Ntoutsi et al. (2020), Stilgoe
(2020), Haenlein & Kaplan
(2019)



LEADERSHIP OF RESPONSIBLE AI:

4 AI AGENCY

Accounts for the power of computers to act autonomously on behalf of people, organizations, and institutions.

Agerfalk (2020)



LEADERSHIP OF RESPONSIBLE AI:

5 INCLUSIVE

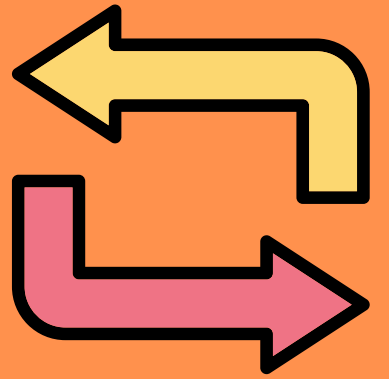
Accounts for artifact development that is inclusive of impacted groups especially employee stakeholders who represent groups impacted by AI bias.

Freeman (1984), Freeman et al. (2004),
Freeman et al. (2010), Laplume et al. (2008),
Maak & Pless (2006), McCarthy et al. (2020),
Mitchell et al. (1997)



LEADERSHIP OF RESPONSIBLE AI:

Shaping Artifacts Re-cap



To understand the relevance of RAI "shaping artifacts," it is essential first to link the progress of IS research on system design and development and its influence on the relatively nascent nature of RAI system creation.

This provides an opportunity to "judge" Good AI by the quality of RAI "shaping artifacts."



LEADERSHIP OF RESPONSIBLE AI:

JUDGING GOOD AI

So how might we evaluate our RAI artifacts?

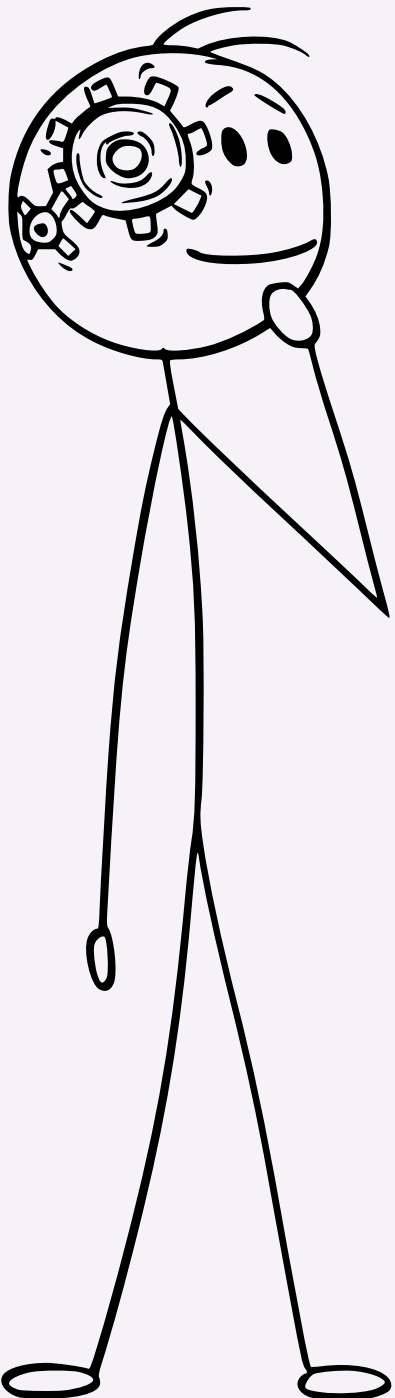
Agerfalk et al. (2022) emphasize five tenets that give a structural framework for evaluating the design of RAI “shaping artifacts” and RAI systems, by judging Good AI.

This approach benefits industry and academics by focusing our attention on what constitutes responsible AI research, theory, and system development and can be used as a point of measurement for RAI outcomes.



LEADERSHIP OF RESPONSIBLE AI:

1 CLARITY



One of the most fundamental attributes of RAI concepts and constructs is that it clearly and understandably communicates meaning.

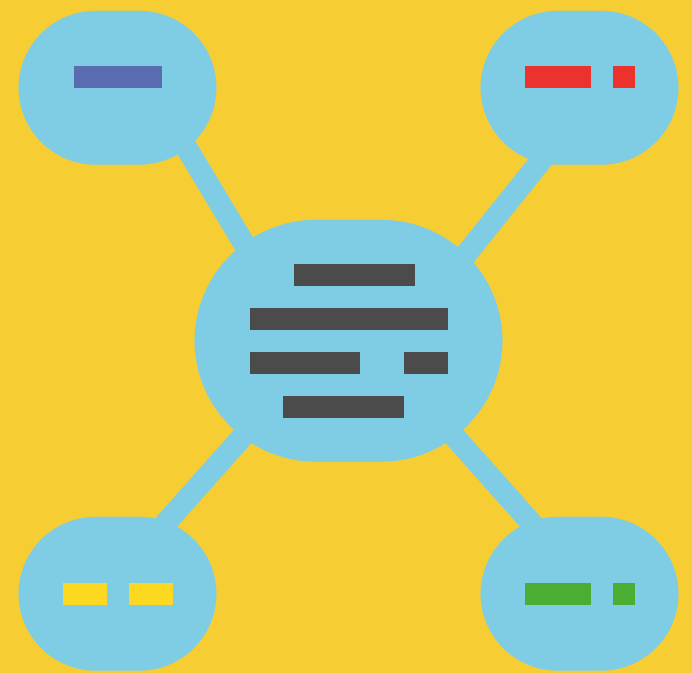
Agerfalk et al. (2022)

2 THEORETICAL GLUE

Solid underlying logic and rationale should support any good Responsible AI concept or theory.

Whetten (1989) refers to such logic as “theoretical glue” that should bind all the factors together.

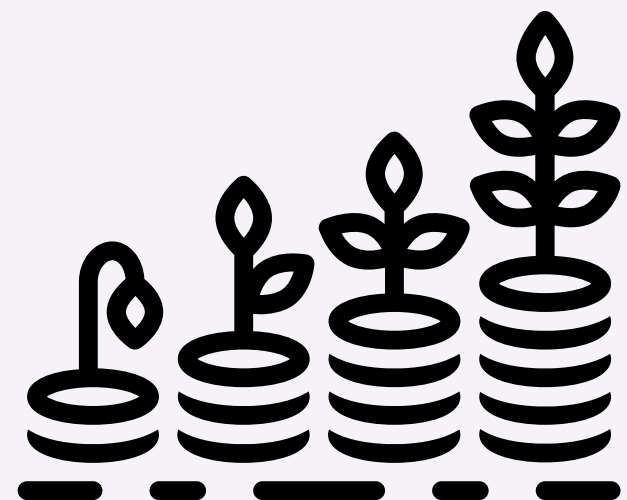
Agerfalk et al. (2022)



3 CUMULATIVE TRADITION

A good Responsible AI concept or theory should cumulatively build on existing research (Dubin, 1978). Keen (1991) notes that most concepts and concern areas in IS research are not as “new” as authors often claim and “turn out to have long roots”.

Agerfalk et al. (2022)



LEADERSHIP OF RESPONSIBLE AI:

4 PARSIMONY

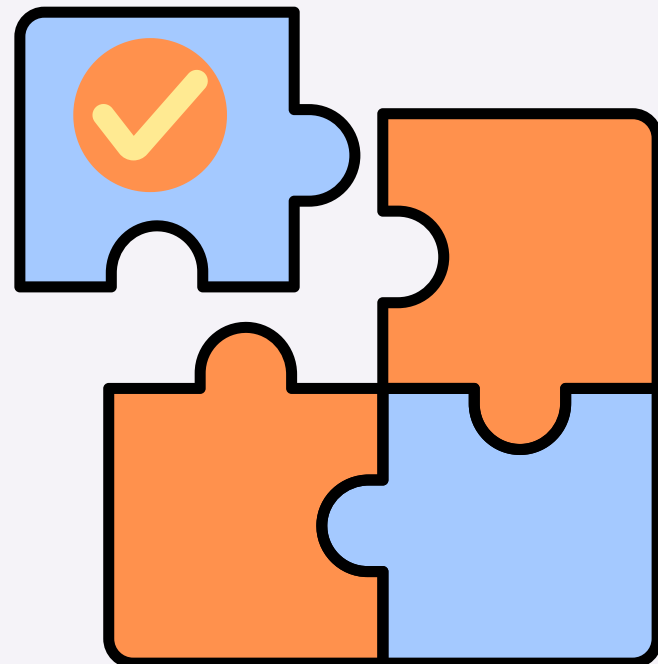
Authoritative works on Responsible AI concept development usually advocate a parsimonious approach; that is, removing factors that provide little additional value to our understanding (Whetten, 1989). Agerfalk et al. (2022)



5 APPLICABILITY

The range of applications of a Responsible AI concept is a key criterion for judging its quality (Metcalfe, 2004; Dubin, 1976, 1978; Weick, 1989), so it should be applicable in a wide variety of contexts.

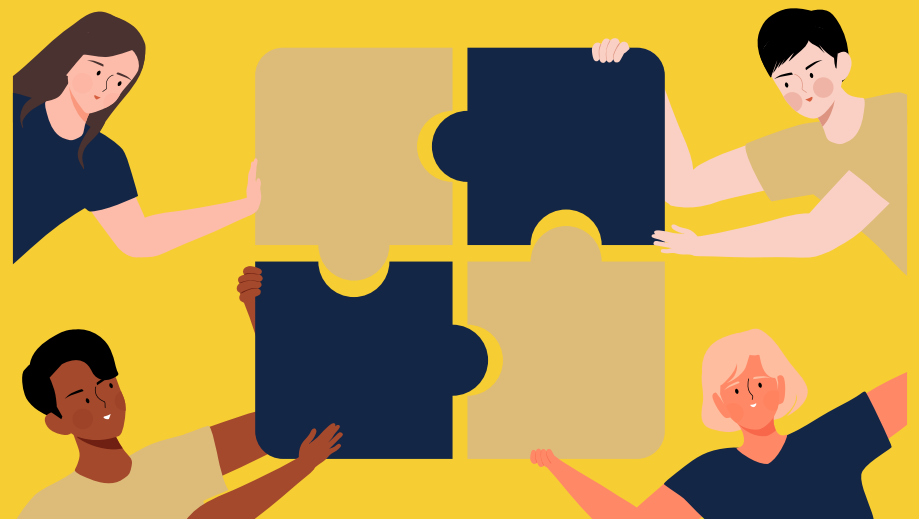
Agerfalk et al. (2022)



LEADERSHIP OF RESPONSIBLE AI:

IS researchers should have a thorough grasp of both digital technology and social practice, particularly the "phenomena that develop when the two interact."

Employees & Researchers working in RAI and in IS may benefit greatly from each other by collaboratively creating "shaping artifacts" & by designing approaches geared for human and AI coexistence.



LEADERSHIP OF RESPONSIBLE AI:



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SHAPING ARTIFACTS

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