

UNTANGLING THE CONCEPTS OF VALUE AND VALUES

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ABSTRACT

The concept of value is widely used in lean construction (LC) literature, but researchers and practitioners lack a common understanding of the term. This is partially due to confusion between value (singular) and values (plural), which are two different concepts. This paper aims to provide a clear and concise understanding of the two concepts of value and values, separating them from each other and explaining their relationship. Furthermore, the paper discusses and exemplifies what these two concepts themselves entail. In doing so, the paper also introduces new terminology relevant for understanding and describing value and values in construction projects. Finally, the paper concludes that value and values research should be more precise in terminology than current literature.

KEYWORDS

Value, values, lean construction

INTRODUCTION

Value is a fundamental concept within lean construction (LC) and is one of the most commonly used terms in all LC-related literature. For example, the word value appears in the title or abstract of nearly a third of all IGLC papers (*IGLC.Net*, n.d.)

In 2010, Salvatierra-Garrido et al. (2010) critically reviewed the concept of value in LC theory, concluding that neither researchers nor practitioners had reached a common understanding. Since then, several authors have tried to lock down the concept of value (Drevland & Lohne, 2015; Drevland & Svalestuen, 2013; Khalife & Hamzeh, 2019). However, the concept of value is still very much fuzzy in the LC community.

Contributing to this fuzziness of value is the concept of values. While one could intuitively believe that values are not the plural of value, this is not so. Instead, they are entirely different – albeit related – concepts. As we will expand upon later in the paper, value (singular) is the specific result of an evaluative judgment of an object; values (plural) are general and fundamental beliefs about what is right and important in life.

Values and value are often confounded (Sánchez-Fernández & Iniesta-Bonillo, 2007). In the LC community, Some authors have covered the difference between the concepts (e.g., Drevland & Lohne, 2015; Khalife & Hamzeh, 2019; Schöttle et al., 2020). However, our impression from the recent IGLC conference is that value and values are still often confused. Moreover, both concepts on their own still seem very fuzzy within the LC community.

We would argue that one issue with previous LC authors' coverage of values as a concept is that it has been superficial – sufficient to broadly distinguish the term from value but not sufficiently for the reader to understand the concepts of values in depth.

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The purpose of this conceptual paper is to untangle the concept of values and values, and to make them easier understandable. That is, we seek not only to separate the concepts from each other but also from themselves. As shown later in the paper, both concepts have different definitions in the literature.

However, while the paper, to some extent, considers differing definitions of these concepts, we do not present a literature review of the topic. Instead, the aim is to create a to-the-point understanding of the concepts relying on a few select sources. We seek to pierce the veil of fuzziness that seems to surround both concepts of value and values, and make them understandable to the LC community members.

The paper starts by tackling the concept of values – explaining how values are beliefs about what is important in life and how one should behave. After that, the paper moves on to value, explaining how value results from an evaluative judgment and considers what elements play a role in this judgment, including how values play an essential role. Finally, the paper argues and concludes that research relating to the concepts of value and value should be a lot more stringent concerning terminology than what can be observed in the current LC body of literature.

VALUES

In the introduction, we wrote that there is a difference between values (plural) and value (singular). This statement is a truth with modifications. Values (plural) have to be the plural of something. In the seminal work, “The Nature of Human Values”, Rokeach (1973) distinguishes between an object having value and a person having *a* value. However, people never have only one value; instead, they have several organised in *value systems*. Therefore, human values are seldom referred to in the singular. To avoid confusion, this paper explicitly uses the term human value when referring to such values in the singular.

Different authors have presented different definitions of values (Hofstede, 1985; Rokeach, 1973; Schwartz & Bilsky, 1987). However, the difference lies mainly in the wording. Most definitions of values found are conceptually the same (Schwartz & Bilsky, 1987). This paper mainly adopts Rokeach’s (1973) conceptual framework, finding it superior to others regarding understanding the difference and relationship between value and values.

The literature commonly agrees that values are concepts or beliefs of what is important in life (Hofstede, 1985; Rokeach, 1973; Schwartz & Bilsky, 1987). Furthermore, what is important in life encompasses both the end states one seeks in life and how one should behave. In other words, there exist both ends-values and means-values.

Rokeach (1973) explicitly distinguishes between terminal and instrumental values. Terminal values are the end-states one seeks to achieve. Rokeach places them broadly into two categories. The first is social values. That is, the end states one seeks to achieve at the societal level – for example, “world peace” and “equality”. The second category is personal values – for example, “a comfortable life” and “happiness”. As for Rokeach’s instrumental values, they are values that guide behaviour. Examples of these are “honest”, “responsible”, and “polite”.

Human values are more or less constant over one’s lifetime and are primarily learned in childhood (Rokeach, 1973). Initially, values are taught and learned individually, without considering their relation to other values, in a definitive and absolute way. However, once one matures, one will increasingly face situations where these values can conflict. For example, if you observe a friend doing something bad and you are asked to tell what happened, should you be loyal to your friend and lie, or should you be honest and tell the truth? Once a value is acquired, it becomes part of a structured system of values where each value is ranked in relation to the others based on its priority – a *value system*.

This value system organises one’s values hierarchically (Rokeach, 1973). For example, two fundamental human values are self-preservation and protecting others. Say you find yourself in a burning building. You have two alternatives, evacuate yourself immediately or help others

escape. The value you assign to each option depends on how you rank the abovementioned values.

A person typically has a relatively small number of values (Rokeach, 1973). While different individuals and cultures will have different hierarchies in their value systems, most human values are shared across the globe (Rokeach, 1973; Schwartz, 2017; Schwartz & Bilsky, 1987). Several authors have developed standardised frameworks for these values – for example, Rokeach’s (1973) Value Survey or Schwartz’s Theory of Basic Values (Schwartz, 2012).

While Schwartz’s Theory of Basic Values is more widely acknowledged and used in modern times, the level of abstraction is also higher. That is, Schwartz employs higher-level concepts, such as *hedonism* and *achievement*, compared to Rokeach’s more straightforward ones, such as *happiness* and *social recognition*. Therefore, for pedagogical purposes, the example values we use in this paper are primarily based on Rokeach’s Value Survey as they are more concrete – and thus more relatable.

Organisational values

In this section, we have so far discussed human values, which relate to individual people. However, in construction projects, we seldom deal with individuals. Even with single-family homes, there will be several family members, each with their values. Related to human values, there exists the concept of *organisational values*.

According to (Liedtka, 1991), organisational values “take the form of guiding principles and beliefs perceived to exist by organisational members as a whole” – in other words, they are essentially the same as human values, but for organisations. However, organisational values are not as straightforward as the statement by Liedtka suggests. For example, according to Zhang et al. (2008), corporate values are often formulated by those in leadership positions, leading to a gap between the values of the organisation and its employees.

It is beyond the scope of this paper to explore the topic of organisational values thoroughly. However, related to understanding the concept of values, we believe it essential to understand that organisations have values like individuals. Furthermore, we would like to point out that similar to the frameworks categorising human values, frameworks exist for mapping values at the organisational level, for example, the Competing Values Framework (Cameron & Quinn, 2011).

VALUE

Back to the disambiguation made at the start of the previous section, value (singular) relates to an object having value. Therefore, properly understanding value as a concept entails understanding how the value of an object is determined. However, before dwelling on this matter, we must point out that value (singular) is not a singular concept.

As with values, there are many different definitions of value in the literature across various fields (Drevland et al., 2018). Most of them are variants of value being the relationship between what you get and what you give – or cost/sacrifice and benefit. However, different value concepts still exist within this notion of value. For example, market value – a term from economics – is the price one has to pay to acquire a good or service on the open market. With this value concept, value is objective and measurable. Thus, this value is very distinct from value as a concept within lean.

The lean concept of value concerns customer value (Drevland et al., 2018). Since, within the lean philosophy, all project stakeholders are considered project customers, this equates to stakeholder value. There are many stakeholders in a construction project, all of whom will have different notions of what is valuable (Drevland & Tillmann, 2018). Value for one stakeholder will not be value for another stakeholder. In other words, value is subjective or particular for a

given stakeholder and cannot be objectively measured (Drevland et al., 2018). Indeed, value in our context is the result of an evaluative judgment.

While evaluative judgment is another term with various definitions across fields, we here use it as commonly used in the fields of psychology and neuroscience. There, evaluative judgment is a fundamental aspect of human cognition that allows individuals to assess the degree of liking or disliking towards a stimulus (Clemente et al., 2021). This evaluation process helps people compare and choose alternatives, make decisions and prioritise actions.

When making evaluative judgements, people draw on various processes and sources of information. (Musch & Klauer, 2003). In the following, we will expand upon how the value of an object is determined through an evaluative judgment. This explanation is anchored in and built upon our previous research. In Drevland et al. (2018), we defined value on a fundamental level by developing nine tenets on the nature of value. Together, these tenets yield a more comprehensive definition of value than found elsewhere. For discussion of how our definition of value differs and compares to other definitions found in the lean construction literature and other fields of research, we defer to Drevland et al. (2018).

In Drevland et al. (2018), we included a rather lengthy definition of value that incorporates all nine tenets. The explanation and discussion of value in this section include all elements of this definition and the tenets; however, we will here use a cut-down and modified version of the definition for pedagogical purposes.:

Value is the result of an evaluative judgment of the relationship between what someone gets from an object and what they must give to obtain and use it.

Figure 1 illustrates the above definition and shows three main elements of value: 1) the value object, 2) the value subject – for whom is the value, 3) and the evaluative judgement itself.

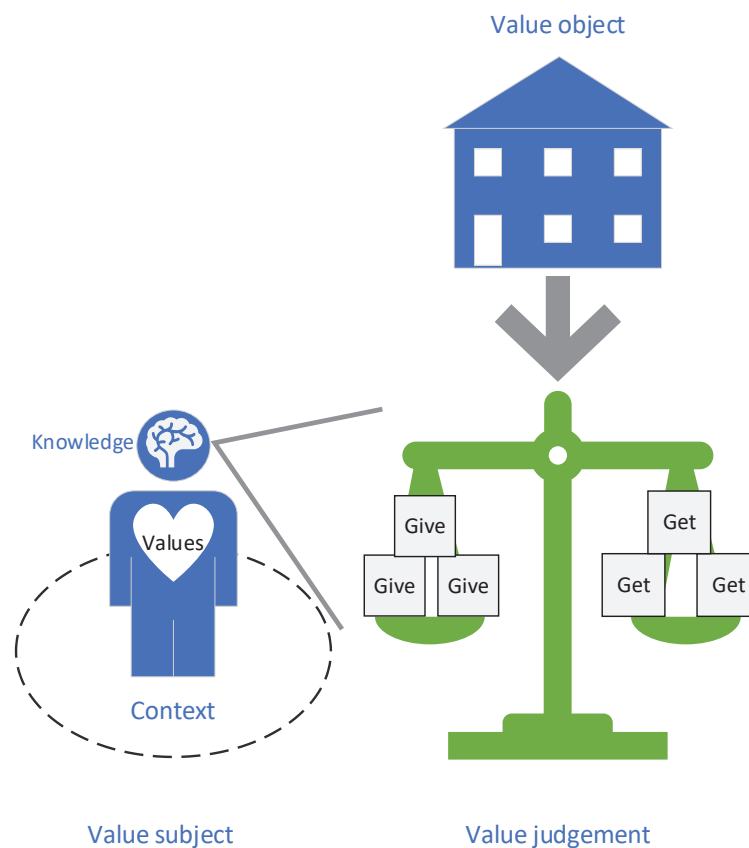


Figure 1: Graphical Definition of Value

THE VALUE OBJECT

We will here introduce the term *value object* to denote the object that is the target of an evaluative judgment to determine its value. The value object can be a physical object – like a building – or an immaterial product or a service. It matters not; what matters is what about a value object, in general, we consider when making a value judgment. In our context, the value object is the project – encompassing both the final built facility and the design and construction process delivering it.

Value is the relationship between what one gets and gives; thus, when making an evaluative judgment, one considers what one must give or sacrifice to obtain – and possibly operate – the object and what doing so will provide one with.

One may consider a host of different factors when judging a value object. Authors have used differing terms for these underlying factors. For example, Drevland et al. (2018) refer to them as get-and-give factors, while (Kliniotou, 2004) calls them value drivers. In this paper, we will refer to them as value factors. We will revisit value factors later in the section. However, before doing so, we must first cover some central aspects of the value judgment and how the characteristics of the value subject play into this judgment.

THE VALUE SUBJECT

Value being subjective entails the value of an object is always for someone. We will here introduce the term *value subject* to refer to this someone. When a value subject judges the value of an object, three attributes of the value subject matter (Drevland et al., 2018): Their knowledge, values and context – or metaphorical speaking, their heel, heart, and their head.

Heel – What context are one's feet planted in

What someone considers valuable depends on where they – metaphorically speaking – stand, that is, the context in which they find themselves. For example, someone living in a country with high-quality tap water will typically not see much value in bottled water. However, if they were to find themselves in the desert dying of thirst, they would judge the same bottle of water very differently.

Context encompasses the value subject's current needs and goals. Drevland (2021) relates an example from hospital projects in the Mission District of San Francisco, where a demographic shift in the neighbourhood caused the client to want to provide different services at the hospital and thus needed other physical infrastructure. In other words, what they saw as valuable changed because their context changed.

Hearth – One's values: what one cares about

As previously explained, values are general beliefs of what is important in life. An example of such a human value would be “protecting the environment”. Someone who cares about the environment will always prefer “greener” products and assign a higher value to a green building, everything else being equal. However, everything else is seldom equal. Making a greener building could also make it more expensive. For an individual buying a home, the human value of “protecting the environment” could potentially come into conflict with values such as “having a comfortable life” and “taking care of one's family”. Whether they prefer a cheaper non-green home or a more expensive green home would then depend on their value systems and how their values rank internally. Thus, the value judgment is highly dependent on the values of the value subject.

Head – What one knows

When people judge an object's value, they depend on the knowledge they possess (Drevland et al., 2018). Knowledge not only about the value object but also its context, alternatives, etc. The knowledge that someone has can very well be flawed or lacking, leading to an erroneous

perception of what value is. For example, recent history is fraught with cases of sustainable initiatives initially considered valuable that – in hindsight – have turned out not to be sustainable and of little value, such as biofuel (Antwi-Bediako et al., 2019).

In addition to the perceived value – the value someone perceives given the knowledge they possess – Drevland et al. (2018) introduces the term *true value* to represent an ideal notion of the value that would be perceived had the value judge had perfect knowledge.

While the concept of true value is purely abstract and theoretical – we can never know the true value of an object – it is helpful in our context. In some fields, the perceived value is all that matters Drevland et al. (2018). For example, marketing is only concerned with the value the customer perceives when making the buy/no buy decision. In construction projects – especially with newer value-centric project models – the goal is to maximise the value for the customer at project delivery, not just deliver what they perceived as valuable at the beginning. In other words, although we do not know the true value for a project stakeholder, we strive to achieve it.

When the value subject and the value judge are not the same

The head, hearth and heel metaphor above assumes that the value judge and the subject are the same entity; however, this is not necessarily the case. The value judge may not be the same individual as the value subject. For example, a designer makes value judgments when making design decisions to optimise the value for the owner – the primary value subject of a building.

In addition to true value, Drevland et al. (2018) introduced a third term related to the perception of value: *Estimated value* – the value for the value subject by a second party judge – e.g. a designer for a client – given the judge’s knowledge – both general and their knowledge of the values and context of the value subject.

THE VALUE JUDGMENT

We will use the term *value judgement* to refer to the evaluative judgment made to determine value. While the term is typically related to making moral judgments or people’s behaviours, often the negative connotations, most dictionaries define the term broader. For example, the APA Dictionary of Psychology defines value judgment as “an assessment of individuals, objects, or events in terms of the values held by the observer rather than in terms of their intrinsic characteristics objectively considered” (American Psychological Association, n.d.). This definition aligns with what we already have covered on how people assess value. However, it assumes that the judge and the value subject are the same, and it goes beyond judging objects. Thus, here, we define value judgment as the evaluative judgment a value judge makes to determine the value of some object.

Referring to Figure 1., the value judgment is a matter of determining what value factors a value object provides on both the get and give sides of the scale and how they balance. However, doing so is less straightforward than it seems. We will discuss several aspects of the value judgment that make it so.

Value judgments consider experiences – not attributes or money

A fundamental aspect of value is that it is experience-based (Drevland et al., 2018; Holbrook, 1981). While people might sometimes express value factors in terms of object attributes or money, they will typically be placeholders related to the experiences they get from the value object. Say, for example, someone is buying a home. Superficially, they are giving up money and getting an asset in the form of a house or apartment. However, when it comes down to it, what factors people consider will be based on the experiences they envision having living there. For example: Will they sleep well there? Will they feel safe? Can they play loud music without annoying the neighbours? Can they host lavish dinner parties? How much time will they spend getting to and from work?

These examples are all factors impacted by the qualities of the home – i.e., the get side of the equation. However, similar considerations are related to the give side. Superficially they are giving up money. However, with few exceptions, money only matters if you do not have enough. For most people, what is important is how the mortgage payments will affect their life experiences. Can they dine out and go on vacations as often as they would like? Can they afford to keep up their hobbies? Will they feel safe financially with the burden of a mortgage?

With some twists, companies will make similar considerations as individuals (Drevland et al., 2018). First, people will consider what experiences they will have doing (or not doing) the activities that matter in their lives. Likewise, companies will consider their experiences doing the activities that matter to them – their business and production processes. Second, for companies, money can be of more direct interest. Typically, the *raison d'être* for a commercial entity is to earn money for its owners or shareholders. In other words, one of the terminal values for a commercial entity is wealthy owners. For an individual, money is only ever a means to achieve their terminal values. However, being wealthy will directly support many terminal human values such as “freedom”, “family security”, and “social recognition”.

The value judgment is comparative

One of the nine tenets of Drevland et al. (2018) is that value is comparative. They anchor this tenet in Kahneman & Tversky's (2000) seminal works on the human psyche, tying value to choices. However, they do not expand upon the implications of value being comparative.

Unlike objective value concepts – such as market value – our value concept does not have an absolute measurement. Value is the result of an evaluative judgment of what someone gets from an object and what they must give to obtain and use it. That result only ever makes sense in comparison to other such results. However, people make these comparisons in a broad sense. That is, one does not only compare apples to apples but also apples to oranges.

To take a more concrete example, when someone considers buying a specific home, they will compare it to other homes on the market; however, they will also compare it to alternatives such as renting or continuing to live at home with their parents. Regarding the previous point of value judgments considering experiences, the comparison is not between different objects but different sets of experiences.

The value judgment is holistic

People judge value holistically, not piecemeal (Drevland et al., 2018). Piecemeal judgment would entail judging each value factor individually, assigning them a weight, and then tallying them up. Doing so would be nonsensical for two reasons. First, assigning value factors a weight would require some measurement scale – thus, being incompatible with comparative value judgment, as described above. Second, how someone will weigh different factors is not linear. How much the various value factors weigh down on the scale will often depend on a complex interplay between them.

One caveat is that construction projects deliver complex objects with multi-faceted use. Here, one can, to some extent, consider the marginal value of distinct features such as a separate bedroom.

VALUE FACTORS

Having described and discussed the characteristics of the value subject and the value judgment that impacts value, it is time to revisit value factors. What factors do people put on the scale when making a value judgment of an object?

We would argue that the concrete factors one will consider will depend on both the value object and the value subject. For example, one will not consider the same factors when buying a car versus a home. There might be some overlapping ones related to, for example, financial aspects; however, the complete set of factors will differ widely.

Furthermore, for any given value object in our context – i.e., construction projects – there will be several stakeholders and thus value subjects. What an owner gives to and gets from a project is very different from what a contractor, user or neighbour does – and they can be in direct conflict with each other. For example, a developer might want to build an apartment building as tall as possible to maximise the monetary gain they experience; however, this might severely negatively impact the view of the neighbours and, thus, the experiences they have in their homes or places of business.

Experiences and placeholders

Value factors are grounded in experience. However, as pointed out, this might not be evident. People tend to describe placeholders rather than actual value factors. They relate desired object attributes that would provide them with some experiences rather than describe the desired experiences themselves. For example, someone buying a home might say they want a large backyard. However, nobody wants a large backyard for the sake of having a large backyard. They might want it because they enjoy gardening, want room for the kids or pets to play, or any other number of other experience-related reasons. Thus, “a large backyard” is, in this case, a placeholder for these experiences that the yard would support.

Regarding placeholders, money is a generic one (Drevland et al., 2018). Money can buy a lot of different experiences. One can go to the movies, dine out, vacation, etc. – or for a company; they can have various experiences through alternate investments.

While we have not conducted any in-depth study on the subject, with the advent of new value-centred delivery models, it is seemingly becoming more usual to explicitly link value factors to experiences rather than using attribute-related placeholders. For example, we know of one school project where one of the stated value factors was to reduce bullying and a psychiatric hospital where they wanted to reduce the use of force by 50%.

For an individual or a family buying a home, the use of placeholders is not a problem. However, in the domain of commercial and public projects, we would argue it can be. For example, an individual saying they want a large backyard is also the one making the decision on which home to buy. In a construction project, the people making the decisions can be several steps removed from those who describe the value factors.

An interesting example to illustrate the issue could be observed during the construction of St. Olav’s Hospital in Trondheim, Norway. When designing the doctor’s offices, they first asked the doctors what size offices they needed – and got back wildly varying size requirements. Then, they went back and asked what they needed to do office and what equipment they needed to do so. The doctors then explained that they, for example, would examine patients and needed an examination table. This experience-based description enabled the designers to develop office designs that fulfilled the doctors’ needs without being unduly large.

Classification schemes

Several authors have tried to establish classification schemes to aid in describing and understanding value factors in construction projects (Construction Industry Council, 2002; Drevland & Klakegg, 2017; Drevland & Svalestuen, 2013; Emmitt et al., 2005; Khalife et al., 2022). However, such frameworks all have their limitations. As discussed above, the factors considered in value judgment highly depends on both the value object and the value subject. Thus, such generic schemes are limited to relatively broad categories. They can serve as starting point to point one in the correct direction for describing value factors; however, they are in no way, shape or form fully fleshed-out tools able to adequately describe value factors in a given project.

SUMMARY OF TERMS

In the previous sections, we covered many different terms related to value and values. Terms we would argue are essential to understand the concepts of value and values properly. However, while the text explains all the terms, not all are given succinct and precise definitions. Furthermore, given how the paper presents the terms, we realise that getting a good overview of them can be difficult. Therefore, we have included Table 1 below to give an overview of the terms related to value and values the paper has presented.

Table 1: Summary of Terms

Term	Definition
Values / Human values / Organisation values	General beliefs about what is essential in life and how one should behave.
Terminal human/organisation values	Desired end states of an individual or organisation
Instrumental values	Beliefs that guide the behaviour of an individual or organisation
Value	The result of an evaluative judgment of what someone gets from an object and what they must give to obtain and use it
Value subject	The individual or organisation for whom the value of an object is considered
Value judgement	The act of determining the value of an object for someone through an evaluative judgment
Value object	The object that is considered when making a value judgment
Value judge	The person or group making a value judgement
Value factor	Factor considered on the get or give side of the scale when making a value judgement.
Perceived value	The value a value subject arrives at through making a value judgment themselves, given the knowledge that they possess
True value	The value that a value subject would arrive at through a value judgement if they possessed perfect knowledge
Estimated value	The value for a specific value subject judged by a second party with the knowledge that they possess

DISCUSSION AND CONCLUSIONS

The paper's purpose has been to untangle and clarify the concepts of value and value. In doing so, we have treated value and values – and the other introduced terms – as very stringent concepts. However, value is a common word in English, and everyday use does not abide by any such stringency. So, for example, someone might say some building feature provides great value for the owner. However, relating to the terms this paper has introduced, they actually mean that said feature supports one or more experiences that are significant value factors for the owner.

Enforcing such stringency and precision in everyday speech would be futile and counterproductive. People will still get their message across without any language policing. However, while low precision and ambiguous terms in everyday speech are acceptable, vague terms do not yield any precision in academic analysis and create poor foundations to build tools or more advanced theoretical constructs. Therefore, we would like to caution researchers who

write about value or use the concept of value in their papers to be conscious of the difference between value and values, as well as different value concepts. We have too often seen authors trying to summarise what value is by picking various characteristics from papers dealing with vastly different concepts – often confounding value and values. Some of these authors end up concluding that value and multi-faceted concept. We would argue value should not be considered as such.

Take, for example, value, as this paper defines it, compared to the previously described concept of market value from economics. The two concepts are clearly related. Both centre on the relationship between what one gives and gets. However, the two concepts vastly differ in how one evaluates that relationship. Thus, we would argue that they cannot be considered facets of the same concept but are instead different concepts rooted in the same abstract root concept.

This paper has not gone into great depth on value and values in projects, mainly deferring to use examples at the personal level. There are two reasons for this: 1) To make it easier and understandable for the reader, and 2) we lack the appropriate knowledge

The paper's purpose has been to foster the readers' theoretical understanding of the concepts, not to expound upon their real-world usage. Projects are complex sociotechnical systems. In addition to having a wide variety of stakeholders whose value must be considered, many stakeholders are, in effect, multi-headed trolls. They are not monolithic entities with a singular perception of value but a collection of individuals with many different value perceptions. Thus, discussing value in such a context complicates matters. The same holds for values. Therefore, we would argue that one must thoroughly understand the concepts at the individual level before one can grasp them at the organisational or project level.

Regarding not knowing enough about real-life values and values in projects, there is a shortage of empirical research on these matters – especially regarding what value factors are considered, how value judgments are made, and by whom. While a third of all IGLC papers mention value, very few go into detail on such matters. Those that do are not very useful due to a lack of terminological stringency.

We would argue that empirical data gathered from projects need to be analysed relating to a solid theoretical framework with unambiguously defined terms, such as what we have presented in this paper. Given how haphazard and ambiguous the everyday use of value-related terms is, any empirical statements gathered from projects need to be viewed and interpreted through such a lens to ensure internal consistency.

We are not as pompous as to believe that what we have is the end-all and be-all of the theoretical frameworks for value and value. However, we would strongly argue that research into value or values needs to relate to clearly defined terminology with a precision that is on the level of what we have presented in this paper. Otherwise, the results will be ambiguous mush, not serving to bring our field forward.

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