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# How does governance influence decision-making on projects and in project-based organizations?

## Abstract

Research on the governance of project management suggests governmentality and governance are associated with improved project performance. However, the mechanism is unknown. We propose they influence decision-making which in turn improves performance. Few papers on governance comment directly on how governance influences decision-making. We identify six areas of organizational psychology which influence decision-making, and study what papers on the governance of project management suggest about how governance influences those six areas. We review 36 papers on the governance of project management published in the past six years in the three main journals in project management.

**Key words:** Governance; decision-making; culture; decision architecture; situational awareness; identity; social representation

## Introduction

Many authors, (see for instance Müller, 2019), suggest good governmentality and governance of project management are associated with improved project performance, but the mechanism is unknown, (ul Haq et al, 2019). Turner (2014) suggests improved decision-making leads to improved project performance. We propose that if good governmentality and governance are associated with improved project performance, the link may be via improved decision-making. In this paper we investigate the relationship between the governmentality and governance of projects and decision-making. We have refined our phraseology. We do propose that improved decision-making leads to improved project performance, (Turner, 2014). We do not propose that good governance causes better decision-making, merely that there is an association. It may be that good governance does lead to better decision-making, it may be that good governance creates an environment that allows for better decision-making, (a moderating affect), or it may be that good governance and good decision-making are each caused by a third variable. It is those associations we seek to explore in this paper.

As a starting point, we review what has been written on the governance of project management in the three primary project management journals between 2014 and the present and investigate what that research says about how the governance of project management influences six psychological constructs that influence decision-making in organizations. The three journals are: The International Journal of Project Management (IJPM); The Project Management Journal (PMJ); The International Journal of Managing Projects in Business (IJMPB). We identified all the papers in those three journals in those years which had the word “governance” in the title. A total of 36 papers were identified, 26 from IJPM, 8 from PMJ and 2 from IJMPB. The six psychological constructs derive from the work of and conversations with Reader (2019) and are:

1. Organizational culture
2. Choice architecture
3. Working in groups and teams
4. Naturalistic decisions making
5. Identity
6. Social representation

Much of the field of psychology deals with what influences how and why people make decisions, and the choices they make. We identified these six constructs as being relevant to project governance. They are also related to the concept of macrocognition, which influences decision-making in organizations, (Crandall et al, 2006)

We suggest the following research question:

RQ1: how do governmentality and governance of project management influence decision-making on projects and in project-based organizations?

We review the definition of four levels of governance of project management: governmentality; board level governance of projects; the governance of projects; and project governance. We also consider types of organization involved in the management of projects. We then review what has been said about how the governmentality and governance of project management is associated with improved performance on projects. We review what the papers on the governance of project management have said about the effect on decision-making in organizations: We finish with conclusions and suggestions for further work.

## Definitions

### *Governance and its levels*

Müller (2017) and Müller et al (2014a; 2015, 2016a, 2017) quote Turner (2014) to say there are three levels of governance within organizations doing projects:

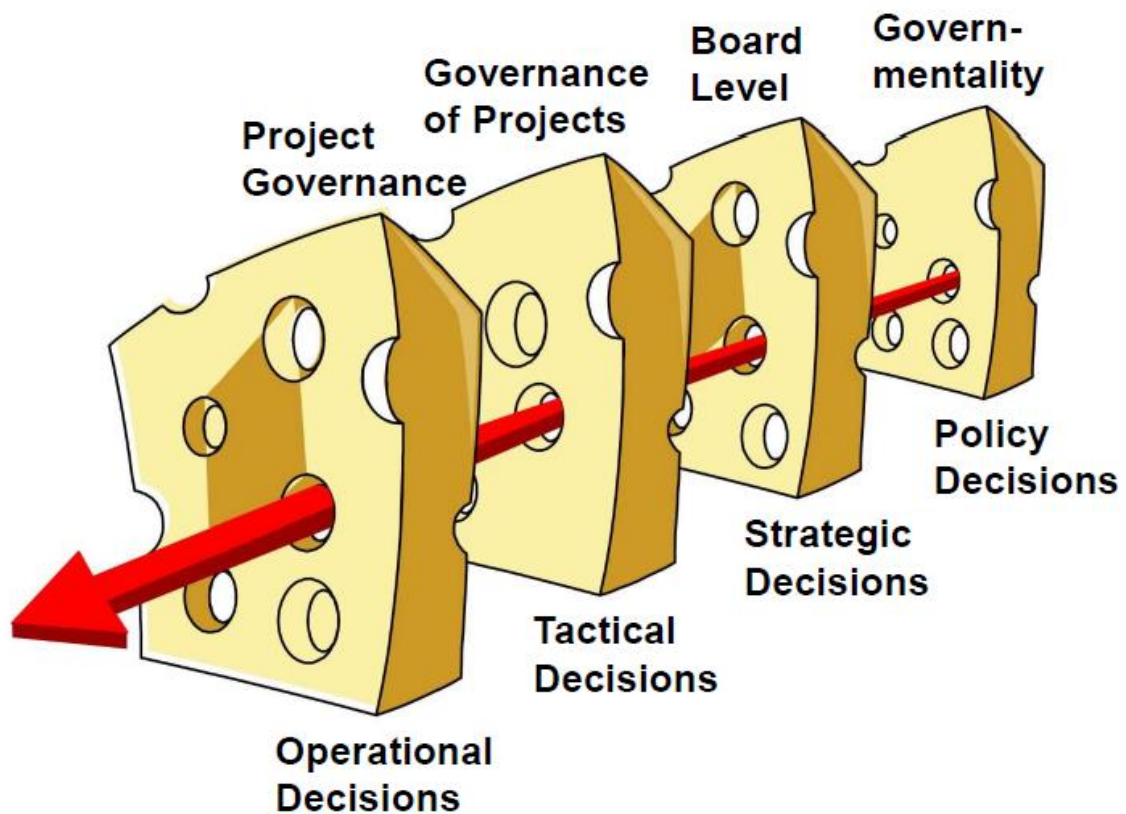
- the board of directors
- the context of projects, encompassing portfolios; programs and project networks
- projects

The first level they call the board level governance of projects. Müller says fundamental decisions on the organization's use of projects are made here, including to what extent the organization uses projects to undertake business processes. Some authors call this the governance of project management. The Association for Project Management (2004) was one of the first professional organizations to publish a guideline. APM's guide relates only to the responsibility the board of directors has for governance of projects the organization is doing, and they call it the governance of project management. Too and Weaver (2014) say governance only takes place at this level; they also call it the governance of project management. In this article, we use the governance of project management to refer to governance at the board level, but also to encompass all the levels. Müller (2017, 2019) calls the second level the governance of projects and the third level project governance. In the early days of writing on project governance the terms were used rather loosely and interchangeably, (Ahola et al, 2014). However, Müller (2017, 2019) has created a clear terminology and that will be used in this article.

Müller (2017, 2019) also introduces the concept of governmentality. Müller (2017, 2019, citing Foucault 1971) says governance is about governing things, whereas governmentality is about governing people. Following Dean (2010), he defines governmentality as:

the mentalities, rationalities, and ways of interaction chosen by those in governance roles to implement, maintain and change the governance structure

The concept of governmentality was first introduced by Roland Barthes in 1957 (Barthes, 2013) and expanded by Foucault (1991). As the definition suggests it relates to the rationalities and people side of governance. Müller (2017) suggests that governmentality sits alongside governance, governing people and things. But Dean (2010) suggests governmentality is the overarching mechanism, from which governance follows. Thus in this article we identify four levels: governmentality of project management; board level governance of projects; the governance of projects; and project governance. For simplicity, we call the four together the governance of project management. The Swiss Cheese Model, Reason (1990), proposes that for a failure to occur, a faulty decision needs to pass through several levels in an organization: policy; strategy; tactics; and operations. But for a good decision to occur, it also needs to pass through the four levels of governance, Figure 1.



**Figure 1:** The Swiss Cheese Model of Decision Making, (after Reason, 1990)

Too & Weaver (2014) argue that for an organization to get value from its projects, the management of projects should be strongly linked to board level governance. They argue that there should be no flexibility. On the other hand, Müller et al (2016b) say that the governance of the temporary organization should allow flexibility to cope with risk and the uniqueness of the project. Lappi et al (2018) say flexibility is important for agile projects and aids the connection of the projects to corporate strategy. Riis et al (2019) show how organizations get value from multiple small projects by establishing and maturing links between the levels. Value creation occurs through integration.

### *Perspectives*

Müller et al (2016b) identify that papers on governance either deal with the design of governance or the consequences of governance. We propose to split design into the antecedents of governance and the practices of governance. Of the 36 papers identified, 4

deal with the antecedents of governance, 29 with the practices of governance, and 16 with the consequences of governance. In addition, 3 deal with the nature of governance or governance research. Several papers suggest how better practices can lead to better outcomes. Only three papers, (Müller et al, 2014b, 2016b; Sergeeva, 2019), deal directly with how governance influences decision-making. However, as we shall see, many papers describe elements that influence decision-making. Similarly, Müller (2017) identifies three streams of governance: governance based on controls to direct organizations and define responsibilities; governance based on processes to define how people should work; and governance based on relationships to define how stakeholders should work together. He says these three streams can lead to different governance approaches.

These three streams lead to a spectrum of the mechanisms of governance, from governance based on control to governance based on trust, (Müller et al 2014b, 2016a, 2017; Müller, 2017; Steen et al, 2018; Toivonen & Toivonen, 2014). People also refer to contractual governance and relational governance, respectively, (Sergeeva, 2019; Steen et al, 2018; Tsaturyan & Müller, 2015; Ul Haq et al, 2019). Control is related to the agency theory school of governance, (Müller, 2017), and assumes the parties to the project are homo economicus. They are rational and self-serving and try to optimise the outcomes of the project for themselves. That means a contractor or project manager (as agent) will do what is best for themselves, and will only do what is best for the client or project sponsor (the principal) if their objectives happen to be aligned. Control is needed to push the contractor or project manager into line. Trust is related to the stewardship theory school of governance, (Müller, 2017). Stewardship theory assumes people behave in a collective, trustworthy manner to obtain the objectives of the organization. People benefit from stewardship behavior because it engenders a sense of psychological ownership rather than material ownership. It is a post-modernist rather than a modernist approach.

Müller & Lecoivre (2014) defined four paradigms of project governance based on whether the parent organization follows the shareholder or stakeholder school of governance, (Müller, 2017), and whether the organization controls by requiring people to follow defined processes or achieve desired objectives. Joslin & Müller (2016) related these paradigms to project success. They showed the stakeholder school of governance was more often correlated with success than the shareholder school. Projects were equally likely to be successful regardless of whether control was by process or objectives.

Following the OECD, (Millstein et al,1998), Müller (2017) identifies four principles

1. *Transparency*: relates to the trust investors and other stakeholders have in the organization, which relies on information being timely and accurate. People need to do what they say. The principal needs to trust the decisions and action of the agent. If relational governance is assumed to operate then people need to act in a way that is consistent with that.
2. *Accountability*: is concerned with the clarity of roles, rights and responsibilities of the major participants. We will return to this under identity.
3. *Responsibility*: is about maintaining professional standards and adhering to the law of the society of which the project is a part.
4. *Fairness*: is about ensuring equal and fair treatment of all the stakeholders, both internal and external. It also relates to the maintenance of ethical standards, (Derakhshan et al, 2019a; Müller et al, 2014b, 2016b).

Dean (2010) approached governance from a governmentality perspective. He suggested governmentality influences how governance takes place and how different forms of governance emerge. He suggested four dimensions of governance:

1. *Visibility*: is related to transparency above.
2. *Techne*: is how governance is performed. It is the means, mechanisms, procedures, instruments, tactics, techniques, technologies and vocabularies used. We will relate this later to organizational culture, to mental models under decision-making in groups and teams, and to situational awareness under naturalistic decision-making.
3. *Episteme*: is the knowledge required to perform governance. It relates to thoughts, knowledge. Expertise, strategies, calculation and rationalities. We will revisit it when we discuss organizational culture and social representation.
4. *Identity*: relates to the roles and responsibilities of individuals and how they relate to the collective. It is about how people conduct themselves, their duties and rights. We will return to this under identity, but we are already seeing that the way governance relates to identity is through defining people's roles, rights responsibilities, and accountabilities. We will also return to this under decision-making in groups and social representation.

These four elements are content independent, and so Müller et al (2019) added a fifth dimensions to address the content of governance:

5. *Precept*: identifies the content addressed in governmentality, and addresses the actual decisions made or guidelines given by the governing entity to the unit being governed.

Dean (2010) suggests governmentality attempts to steer individuals towards preferred outcomes. But there can be a gap between intended and achieved outcomes. Dean refers to the former as utopia. Improved project performance is the desired utopia.

### *Projectification*

Turner & Müller (2017) suggest there are three organizations involved in the management and governance of projects: the investor, which is investing in the output of the project; the contractor, which provides services to the investor to undertake the work of the projects; and the project. The contractor is an organization that uses project management as one of its business processes. The investor may or may not be an organization that uses project management as one of its business processes. Its main business may be routine, but it is undertaking the project as an investment.

Miterev & Turner (2017a,b) and Turner & Miterev (2019) identify several types of organization that use project management as a business process, to a different extent. With project-based organizations, almost all their work for customers is tailored or bespoke, and so project management is the business process they use, perforce. (Tailored work is a standard design which is modified for the customer, whereas bespoke work is a novel design.). Project-oriented organizations make the strategic decision to use project management as their standard business process. Usually project-based organizations are project-oriented, but not always. Turner & Miterev (2019) interviewed a company that identified that it had three types of operation, which they labelled running, change and projects. Projects involved bespoke designs, and they used project management as the business process to manage that work. Change could be tailored or bespoke, and they might use project management as the business process to manage that work, or they might manage it as routine work. Some running might be tailored designs, but other work would be routine. It would all be managed

through the routine organization. Turner & Miterev (2019) interviewed another organization where most of their work was running or change. They chose to manage it all through the routine organization. Although they were project-based they chose not to be project oriented. Turner & Miterev (2019) identify a third type of organization, where a project-based back office does work for a routine front office. They call that the project-led organization.

Müller et al (2019) also identify three types of organizations using projects and project management: the project-based organization, the project-oriented organization, (as above) and the process-oriented organization. A process-oriented organization is one using projects, but which appears to its customers as a manufacturing organization using repetitive processes. It will primarily be doing running and change for its customers.

## **Governance and project performance**

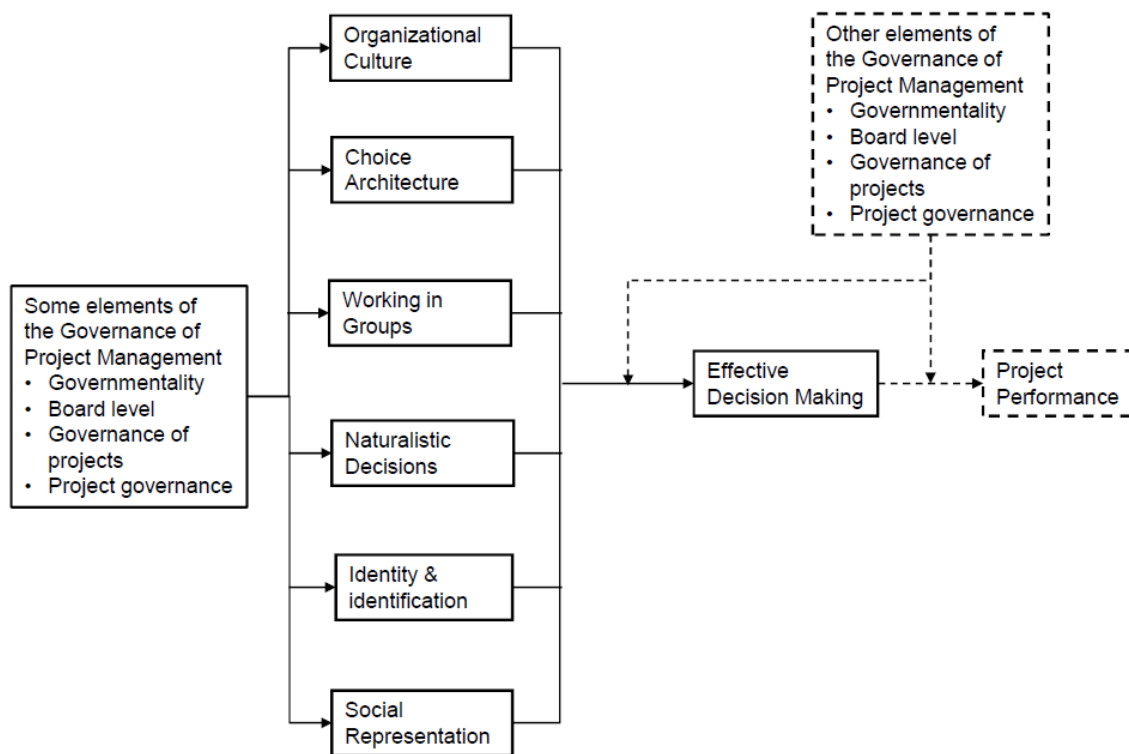
As the premise for this work, we have suggested that good governmentality and governance are associated with improved project performance, and the link may be via improved decision-making. We review what has been written about the link between governance and project performance. Joslin & Müller (2016) have shown that certain governance structures are associated with success. They have shown that if the parent organization is stakeholder focused, projects are more likely to be successful. They have shown that stewardship approaches are associated with success and opine that may be because stewards have high levels and commitment and identification with the organization. We will return to the relationship between identity and decision-making later. They also show that governance may moderate the use of methodologies. Methodologies may provide groups and teams with mental models which we shall also return to later.

Müller et al (2016a, 2017) have shown how different forms of governance, governmentality and projectification are associated with success. Following Dean (2010) and Foucault (1971) they identified three types of governmentality: authoritarian; liberal and neo-liberal. They also identified another dimension of governmentality they called precept, as above. There were three measures: organizational values; process compliance; and project wellbeing. They identified three dimensions of governance: sovereignty; the use of trust or control as a governance mechanism; and the level of institutions used as part of the governance structure. They showed high levels of authoritarian and neo-liberal governmentality are associated with project success and organizational success. In organizations using liberal governmentality, there was no impact. They showed that project-wellbeing was associated with project success, but organizational values were associated with organizational success. Medium levels of sovereignty were associated with project success, but high levels of sovereignty associated with organizational success. High levels of trust were associated with project success, confirming the findings of Joslin & Müller (2016) that stewardship is associated with project success, but both trust and control could deliver organizational success. High levels of projectification were associated with both project and organizational success.

Ul Haq et al (2019) say it is hard to explain how good governance leads to improved project performance but show that both contractual (control) and relational (trust) governance are associated with success. They showed that risk was a moderating variable, with higher risk leading to worse performance. Biesenthal & Wilden (2014) also say governance is associated with success, and suggest control is important. Sirisomboonsuk et al (2018) show that both project governance and IT governance lead to improved project performance. Project governance they measured using the Association for Project Management's (2004) four principles. With IT governance, strategy setting, value management and performance

measurement had an impact. UI Musawir et al (2017) also found that strategy setting and value management improved project performance.

Thus, many authors have shown that the governance of project management is associated with better project performance, but they are unable to suggest the mechanism, (Joslin & Müller, 2016; UI Haq et al, 2019). In this paper, we propose that since good decision-making leads to increased project performance, (Turner, 2014), good governmentality and/or governance may be associated with better decision-making, which in turn leads to better project performance. In the remainder of this paper, we consider what authors writing about the governance of project management have said about how governance is related to six organizational psychological constructs which in turn influence decisions making, Figure 2.



**Figure 2:** Research model

Figure 2 represents the original proposal, that governmentality and governance are independent variables that influence decision-making are independent variables that influence decision-making via the six psychological constructs. Looking for that link is the main focus of this paper. However, we do sometimes find that the psychological construct is the independent variable that influence governance and decision-making, particularly in the case of culture, identity and social representation. In that case good governance will be associated with good project performance but because both are separately dependent on a third variable. Some of the authors above suggested governance as a moderating variable, but we found no evidence of that in this paper, mainly because we were just looking for the link between governance and the six constructs. The premise of this paper is that governance and decision-making are associated, and that good decision-making leads to good project performance. But in this paper we do not look at the link between decision-making and performance.



## Organizational culture

The largest number of papers, about half, comment on how governance influences organizational culture. Governance and culture can influence each other. MacCormick (2019) suggests that proto-culture influences governance as it is first established, but then governance influences formal culture, but informal culture influences governance. In this paper we will be more concerned with how governance influences formal culture.

Weber & Hsee (2000) suggest that culture will influence decision-making in organizations, and so governance will have an impact on decision-making via culture. They suggest culture influences behavioural norms, judgement norms, perception of risk and risk choices.

According to the model of Schein & Schein (2017), there are three levels of organizational culture:

- (a) Artifacts:
  - visible and feelable structures and processes
  - observed behaviour
- (b) Espoused beliefs and values
  - ideals, goals, values, aspirations
  - ideologies
  - rationalizations
- (c) Basic understandings and assumptions
  - unconscious, taken-for granted beliefs and values, which influence behaviour, perception, thought and feeling

Governance and governmentality can influence or are influenced by all three of these levels. We have already seen, and will see further when we discuss groups and teams, that governance can define the methodologies (processes to be used), (Joslin & Müller 2016), and governance can control by behaviours or processes, (Müller & Lecoivre, 2014), and so can define desired processes or behaviours. Governance sets goals and values, (Ul Musawir, Martins Serra, Zwikael, 2017), and the definition of governmentality, (Müller, 2017), says it defines ideologies and rationalizations. But it is also possible that basic understandings and assumptions about those things can influence governance and governmentality. Schein & Schein agree with MacCormick (2019) by saying that leaders influence the culture of the organization through the governance they adopt. They also suggest how culture can influence decision-making through behavioural interactions, language, group norms, ways of thinking and mental models, and shared meaning.

Espoused values include the four principles suggested by the OECD described above: transparency, accountability; responsibility and fairness, (Müller, 2017). Biesenthal & Wilden (2014) showed that high visibility aids transfer of knowledge and practices between departments. Tsaturyan & Müller (2015) suggest governance involves four dimensions: structure; relations; process; and values/goals which influences modes of decision-making, models of communication and the understanding of common goals. Müller et al (2014b, 2016b) suggest governance includes the organization's value system, procedures, processes, policies, roles, responsibilities, and authorities which regulate governance mechanisms such as trust and control. They say the human dimension means governance cannot be too rigid. Governance provides a framework that shapes but does not proscribe actions of project managers. The level of trust between project managers and the governance structure

influences behaviours, and the ethical leadership of senior management influences the culture of organization. Sergeeva 2019 showed that the best form of governance to encourage innovation is a strong framework with maximum flexibility. This supports the findings of Turner & Müller (2004) who showed that successful projects are associated with medium levels of flexibility. Successful projects have sufficient flexibility to deal with risk but have some guidance for the governance structure as to what processes should be followed. Medium levels of structure give guidance as to knowledge and rules. Reason et al (1998) showed that lack of guidance about knowledge and rules can lead to unintentional errors.

A choice that is repeatedly addressed is between contractual versus relational governance, control versus trust, agency theory versus stewardship theory. This is related to whether the governmentality is authoritarian, liberal or neo-liberal, (Müller et al, 2016a, 2017). Authoritarian governmentality is associated with governance by control and neo-liberal with governance by trust. Ul Haq et al (2019) investigated the difference between contractual and relational governance. Contractual governance deals with normal performance, incentives and risk, how the parties communicate, issues dealt with and the contract adapted if needs be. Relational governance covers information sharing, flexibility and solidarity. They show both contractual governance and relational governance are associated with reduced opportunism. Steen et al (2018) say relational governance is best for project networks, but it can create tension between the temporary and permanent organizations. Zwikael & Smyrk (2015) say trust works better in a turbulent environment whereas control works better in a stable environment. In a turbulent environment more flexibility is needed to cope with risk, (Sergeeva, 2019, Turner & Müller, 2004). Risk moderates the impact of trust and control on performance. Risk has greater influence of the relationship between control and performance in a low risk environment, and trust and performance in a high-risk environment. This is consistent with the findings of Guo et al 2014. Müller et al (2016b) show there is greater trust in organizations with a stakeholder orientation than shareholder orientation, so trust as a governance mechanism will work better in that environment. Clegg (2019) and Clegg et al (2002) describe how neo-liberal governmentality was used to create an alliance on the Sydney Olympics based on self-responsibility and self-organizing, freedom to choose, identity, lived experience and engagement with stakeholders.

Müller et al (2014a, 2015) identify organizational enablers of governance and governmentality. These include cultural issues such as:

- the development of individuals that are mindful of the organization, self-responsible, and self-organizing to a degree that matches the goals of the corporation
- organizational design factors, such as autonomy, decentralization, and flatness of organization structures
- a culture of open discussions, ideologies that are clearly communicated, and a general emphasis on the temporality of the undertakings and its success measures

Thus, we have seen governance and governmentality interact with culture in organizations doing projects, by influencing the top two levels of Schein and Schein's (2017) model. Governance influences artefacts through visibility, structures, processes and defined behaviours. It influences espoused beliefs and values by setting ideals, goals values and aspirations. Governmentality influences ideologies and rationalities. Governance and governmentality also influence behavioural interactions, group norms, ways of thinking and mental models, and shared meaning. There was no mention in the papers reviewed of governance setting language or vocabulary. Sergeeva (2019) describes how governance can

create narratives. Returning to Weber & Hsee (2000), governance can set behavioural and judgement norms and have an impact on the influence of risk and risk management.

### **Choice architecture**

Governance should create an environment in which people make decisions in the best interest of the organization. In a contractual environment governed by agency theory, that is done by control. In a relational environment governed by stewardship theory, that is achieved by people behaving in a collective, trustworthy manner. Thaler et al (2014) suggest decisions are not taken in a vacuum, but in an environment where features, noticed and unnoticed, can influence the decision. Decisions making can be improved by, (Dolan et al. 2010):

- *Easy*: Reducing choice overload, while ensuring all options are properly considered.
- *Attractive*: Ensuring decisions are properly structured with positive and negative factors considered. Avoiding defaults, and biases that may lead to the selection of defaults. The use of devil's advocates and dialectal enquiry can ensure alternatives are considered.
- *Social*: Ensuring decisions properly involve all stakeholders.
- *Timely*: Making decisions in the best long-term interest of the organization and not short-term utility. Managing biases can help here as well.

Müller (2009) first introduced the idea of four governance paradigms, based on whether the organization follows the shareholder or stakeholder school of governance, and whether the organization controls by requiring people to follow processes or achieve goals. Müller et al (2014b, 2016b) in show this can influence the choices made. Based on this work, Turner & Müller (2017) suggest that motivation is a significant cause of this influence.

- (a) Project managers are most likely to feel empowered in an organization with outcome control and stakeholder orientation, and least empowered in one with process control and shareholder orientation. Project managers in the latter are more likely to follow rules, whereas project managers in the former are more likely to seek innovative solutions to problems. However, project managers in the former are also more likely to suffer ethical issues about whether to optimise the project for themselves or the organization. If they follow stewardship theory, which is more likely to apply in this context, they will be motivated to optimise the outcomes for the organization.
- (b) If faced with a difficult decision, project managers in the former environment are least likely to seek help, but if they do, they seek it from the project board, for whom they produce the results. Project managers in the latter environment are more likely to seek help, and will seek it from their supervisor, who represents the shareholders.
- (c) Project managers in organizations controlled by results are more likely to make decisions that maximise the outputs and overstate what they have achieved, whereas project managers in organizations controlled by process are more likely to make decisions that conform with the process and overstate what has been done.
- (d) In organizations with a shareholder orientation, project managers will view their sponsor, who represents the shareholders, as their key stakeholder, and will optimise decisions for the sponsor, but in organizations with a stakeholder orientation, project managers will view the end users, for who they are producing the results, as the key stakeholder, and will optimize decisions for them.

Building on this last point, Derakhshan et al (2019a) emphasise the social element of decision-making, suggesting that governance should take a stronger focus on the needs to

stakeholders, especially external stakeholders who are often ignored. They say governance should focus on the creation of value and give due regard to ethics, accountability and transparency as suggested by the OECD, (Müller, 2017), when taking decisions that affect stakeholders. They also suggest internal and external stakeholders can be influential decisions makers, and it is important to build a trusting and transparent relationship with them to optimize decisions made.

Müller et al (2016a) show how governmentality can influence the environment and through that the nature of decisions made. They introduced the dimension of governmentality they called precept, with three values: project, wellbeing; value; and process. They describe a consulting organization where one of the core values was individual well-being, and an individual's sense of wellbeing would influence whether they accepted an assignment or not. They describe another organization with a process orientation where people realised that if the organization was to grow departments needed to collaborate and adopt similar processes. Their third example is a pharmaceutical company with a project-wellbeing orientation. Success of the project drives decision-making, and that requires the inclusion of stakeholders in the decisions process.

McGrath & Whitty (2015) identify five elements of governance: structure; positions; rules; decisions making; and reporting. All five influence decisions architecture:

- Structure through how people interrelate;
- Positions through the definition of roles and responsibilities, which we will return to in identity;
- Rules through the definitions of through the definition of policies and procedures, which we will return to in groups and teams;
- Decisions through the delegation and approval processes
- Reporting through the involvement of stakeholders

As we have seen, a small number of papers address how governance can influence the environment within which decisions are made. Several of the papers address the social elements of decision-making, describing how to encourage departments to work together and how to involve stakeholders. However, none address how to make decision-making easier, how to avoid biases, or how to ensure decisions are taken in a timely manner.

### **Naturalistic decision-making**

Related to choice architecture is naturalistic decision-making. Naturalistic decision-making is the study of real people making real decisions in real contexts and is defined as, (Lipshitz et al, 2001, p332):

an attempt to understand how people make decisions in real-world contexts that are meaningful and familiar to them

Decisions are taken by people in a given environment, and so to understand how and why decisions are taken, we need to understand how people interact with their environment. Decision-making involves interaction between individuals, stakeholders, teams, and organisational goals and norms, against a backdrop of uncertainty, ambiguity, missing data and changing conditions, and so we expect governance to influence these interactions. There are four characteristics of natural decision-making:

1. *Process orientation*: rather than predicting what option will be implemented, naturalistic decision-making tries to understand the cognitive processes decision makers follow. Governance often defines processes so could influence decision-making processes.
2. *Situation-action matching*: in the process, decision makers match options to the situation rather than make choices
3. *Context bound informal modelling*: decision-making is based on experiential knowledge rather than formal models. This means project managers will not rigidly follow the methodology but adapt it based on their knowledge, emphasizing episteme over techne.
4. *Empirical-based prescription*: Decisions should be based on descriptive models derived from expert knowledge, rather than formal models based on theory. We will return to mental models later, but mental models should be pragmatic rather than idealistic.

Naturalistic decision-making is allied to situational awareness. Situational awareness is defined as, (Endsley, 1995, p36):

... the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future.

Endsley is primarily talking about dynamic situations where immediate decisions are required. However, it can also apply to decisions taken over a longer timeframe. Reader & O'Connor (2014) describe lack of situational awareness contributing to the Deepwater Horizon fiasco. They suggest that a lack of situational awareness arose from poor risk perception, and the use of information to make risk choices. Above we saw that Weber & Hsee (2000) suggest that these are part of how culture influences decision-making. Also, the problems arose from a weak process, and not matching the situation to options. There was also in Deepwater Horizon weak governance, resulting in:

- poor inter-organizational communication with contractors resulted in problems not being properly identified and dealt with
- weak leadership with potential problems not being identified and investigated
- regulation and safety procedures not being properly followed

None of the papers on governance discuss how the governance of project management can support naturalistic decision-making or raise situational awareness. Havermans et al (2015), in a paper about narratives and not governance, discuss the use of narratives in project management. They suggest that expressing problems as narratives is a dynamic process that can frame problems in a new light, aid interaction, and shape the actions of those involved. So, they suggest that framing problems as narratives can aid naturalistic decision-making.

DeFillippi & Sydow do suggest that a tension exists between using standard procedures and tailored procedures. Naturalistic decision-making would suggest that procedures should be tailored to the needs of the situation based on expert judgement. Turner (2014) based on the work of Payne & Turner (1999), argues for this. But the pressure to use standard procedures is high. Müller et al (2015) also suggest the methodologies should be flexible.

## **Groups and teams**

In organizations people work and make decisions in groups and teams. There are three key ways that decision-making in groups and teams can be improved: by improving group and team working; by supporting the development of schemas and mental models; by reducing the occurrence of team biases.

### *Improving team and group working*

In order to better understand the performance of groups and teams in high risk industries, team performance frameworks have been developed, (Reader et al, 2009). These include inputs, processes and outputs. Inputs can include the task of the team, norms, attitudes and member characteristics. The processes include communication, coordination, leadership and decision-making. The outputs are satisfaction, creativity, satisfaction and well-being. Team communication includes the transfer of information, ideas, and opinions among team members. Coordination aims to achieve the synchronous and coordinated effort of team members. Leadership involves setting goals, setting expectations and coordinating activities. Decision-making requires the integration of information and opinions to reach a decision.

Müller et al (2015) identify enablers of governance including discursive abilities, which include the setting of goals across the organization, the creation of communication mechanisms, raising awareness of work processes, and the creation of a culture of open discussions, ideologies that are clearly communicated. Lappi et al (2018) suggest how governance can support the inputs and processes of the team performance framework. Müller et al (2015) invoke institutional theory to suggest how governance can support the inputs and processes of the team working framework. Sergeeva (2019) says that governance should try to ensure that decisions are taken by the right group of people, and that they carefully consider the appropriate information. She suggests that governance can empower people to take decisions, giving them appropriate authority and representation.

### *Mental models*

Mental models are shared representations which facilitate team working in complex, dynamic and uncertain environments. Mental models can be defined as (Rouse & Morris, 1985, p7):

... mechanisms whereby humans are able to generate descriptions of systems purpose and form, explanation of systems functioning and observed system states and predictions of future states.

Situation awareness (see above) is where we predict the future state from our observations of its current state, whereas mental models are where we predict the future state from our schemata about how it should evolve. Shared and accurate mental models can help teams develop a shared knowledge on strategy, better understand their goals, have shared expectation on how team members will function and work together, and develop a shared situational awareness of the task.

Many authors suggest governance should include methodologies for how work is done, (see for instance, Joslin & Müller, 2016; Müller et al 2014b). Other authors, following a more control-oriented version of governance talk in terms of rules, (see for instance McGrath & Whitty, 2015). Müller et al (2016a) suggest governmentality will frame mental models. If you return to the definition of governmentality it is the rationalities of governance so defines mental models for the organization, and people and groups in the organization. Müller et al

(2015) suggest mental models are enablers of governance. They suggest governance should include a company-wide methodology, but it should be flexible to meet the needs of the task. This is reminiscent of naturalistic decision-making, the mental models should be pragmatic not idealistic, and suggests the techne of governance should be influenced by the episteme.

### *Group biases*

People working in groups can suffer group biases, (Jones & Roelofsma, 2000):

- (a) *False consensus*: People tend to see their choices as the most common, and other choices as deviant or inappropriate, and so assume there is greater consensus in the group than there is. Governance can perhaps ameliorate this by setting strategy, goals and methodology clearly. Also making alternatives clear can be beneficial.
- (b) *Group think*: Group think occurs in cohesive groups where the desire for agreement overrides the need for proper assessment of options. Peer pressure results in reduced mental efficiency and reality testing. Unfortunately, strongly shared mental models just discussed can encourage group think. Again, governance should encourage the proper consideration of alternatives and the use of devil's advocacy and dialectal enquiry.
- (c) *Group polarization*: Group polarization is where the majority opinion in a group becomes more strongly held than it would be any members of the group individually. Haslam (2004) shows that unfortunately this can be reinforced if there is a strong group identity. (We will look at identity in the next section.) A corollary of group polarization is risk shift, where the group becomes more risk seeking than any of the members of the group would be on their own. Again, governance can ameliorate this by giving strong guidance on strategy, goals and methodology, but governance can make it worse by trying to build a strong project identity.
- (d) *Group escalation of commitment*: group escalation of commitment refers to the tendency of groups or individuals to continue to support a clearly failing course of action. "Our boys shall not have died in vain." This is related to sunk cost bias in individuals, (Kahnemann, 2012), but White (1993) shows that groups can escalate more than individuals, perhaps illustrating a polarization effect. Governance can ameliorate group escalation by ensuring project governance is strongly linked to the governance of projects and then to board level governance, to ensure that the need and viability of projects is constantly checked against organizational strategy by independent people.

None of the papers on governance surveyed made any direct suggestions about how the governance of project management can reduce group biases within project teams. Some stressed the importance of ensuring a strong link of between project governance, the governance of projects and board level governance, (see for instance Lappi et al, 2018; Müller et al, 2014a, 2016a, 2017; Too & Weaver, 2014). Müller et al (2014a) describe abilities as enablers for project governance some of which will influence the way people work in groups, including communication mechanisms which may help to reduce biases; awareness of organizational goals and needs; open discussion. Sergeeva (2019) suggest governance should ensure people use appropriate information to take their decisions.

### **Identity**

Identity is our sense of belonging to a group that leads to specific cognitive and behavioural responses. Identity enables people to categorise themselves as a group member, (Haslam, 2004), and comparison with other groups leads to positive differentiation between the in-group and outgroup, (Haslam, 2004). Identity includes at one level, the social categories

people belong to, but at another level, their roles and relationships with others. Identification is the process through which an identity is adopted. There are three components: a cognitive one where somebody recognises they may be a member of a group; an evaluative one where they decide this is a group they want to belong to; and an emotional one where they like the choice, (Tajfel, 1982). Identification matters because it enhances an individual's self-esteem as a member of an organization or group. Identification can improve communication and improve group performance because it can improve many of the inputs and processes of team performance mentioned above, including norms, values, team characteristics, communication, leadership and followership, and coordination.

The main issue with respect to identify discussed in the papers on governance reviewed is in defining people's roles, responsibilities and authorities on projects, that is defining their roles and relationships with others, (see for instance, DeFilippi & Sydow, 2016; Lappi et al, 2018; McGrath & Whitty, 2015; Müller et al, 2014b; Steen et al, 2018). This is associated with the OECD's principle of accountability, Müller (2017). DeFillippi & Sydow say tensions can exist between individual identity and team identity. There can also be tensions if people from different organizations are working on the same projects. They suggest that the clear definition of roles can reduce these tensions. They also suggest that there can be tensions if somebody has different roles on different projects. Turner (2014) gives an example where somebody is a supervisor on one project, but a team member on a second, but their supervisor on the second is a team member on the first, creating tensions and confused identity. Derakhshan et al (2019a) consider the importance of defining rights, roles, responsibilities and relationships to engage both internal and external stakeholders. Derakhshan et al (2019b) use attribution theory to show that if this is not done well, it can leave external stakeholders with a negative assessment of the project.

Müller et al, (2014a, 2015) show that identity is an important organizational enabler for governmentality. In the first paper they consider people's sense of self-responsibility and self-awareness, and their willingness to take on responsibility for results, associated tasks, projects and other efforts for the benefit of the organization. In the second paper they invoke institutional theory to investigate regulative, normative and cultural-cognitive elements to investigate stability and meaning of social life in organizations. Institutions comprise actors (including both individuals and organizations) that become real through the social behaviour of the actors. Informal norms, values, standards and formal and informal roles make up the normative elements of governmentality. Shared conceptions about the nature of social reality make up cultural-cognitive elements, and create frameworks of meaning, shared beliefs, symbols, identities and mental models. Organizational enablers for governmentality provide for the development of individuals that are mindful of the organization, self-responsible, and self-organizing to a degree that matches the goals of the organization. For companies with a strong project culture a strong project identity enables governmentality.

Toivonen & Toivonen (2014) give a case study where senior management radically change the governance structure from trust based on stewardship theory to control based on agency theory. The project was not performing well, but there was a sense that the project team were betraying the organization. The project team were not identifying with the organization. The changed governance structure changed the team's relationship with the organization, whether or not it changed the team's identity. The changed governance structure changes the team's cognitive assessment; it may or may not change their evaluation and emotional response.



We saw above that Sergeeva (2019) investigates how governance can try to make sure decision are made by the right group of people with the right information. But she does suggest that people should identify with the team and the decision they have to make.

## Social Representation

Moscovici (1973) defines social representation as:

A system of values, ideas and practices with a twofold function: first to establish an order which will enable individuals to orientate themselves in their material and social world and to master it; and secondly to enable communication to take place among the members of a community by providing them with a code for social exchange and a code for naming and classifying unambiguously the various aspects of their world and their individual and group history.

He is primarily writing about individuals in society, but this definition can also apply to individuals in organizations. People need to orientate themselves within the organization and master the context. We have just considered this under identity. People also need to be able to communicate. They need a common language and clear classifications to be able to communicate unambiguously, (Crawford et al, 2005), and they need channels of communication. The rationalities of governmentality drive social representation within the organization, as do the techne, episteme and identity of governance. Many of our beliefs have social origins, (Moscovici, 2000), and so people's knowledge of the project will be heavily influenced by their identity within the organization and project. Organization and organizational culture can shape and change knowledge. Often people's understanding of issues is not shaped by the knowledge they have, but by their identity, social position and group dynamics. Social representation will include social-cognitive facilitators to make the unfamiliar familiar, including:

- (a) *Anchoring – discursive abilities*: classifying and naming the new using familiar systems of meaning and integrating of new knowledge, values, and objects into existing frameworks, using metaphors ways of familiarising people.
- (b) *Objectification – process facilitators*: the transformation of abstract representations into routines, stories, institutions and concrete objects, gives a concrete reality to ideas, values, mental models, using the institutions of governance.

As we have repeatedly seen above, Müller et al, (2014a, 2015) have investigated the enablers of governmentality and governance. In the first paper they quote Stoker, (1998, p155):

governance is concerned with creating the conditions for ordered rule and collective action, which is accomplished through a framework for ethical decision-making and managerial actions based on transparency, accountability, and defined roles.

They suggest that governance builds social exchange and governmentality social cohesion. Müller (2017), following Barthes (2013) and Foucault (1971), says governmentality defines the relationship between governors and the governed, and that it presents governors as the origins of social relations. In the second paper, Müller et al use institutional theory, which addresses the ways in which social structures, including normative and behavioural systems, are established, become stable and undergo change. In both papers they reach the conclusion that organizational enablers for governmentality seek the development of individuals that are

mindful of the organization, self-responsible and self-aware, and are mindful in accepting decision-making, and making decision in the best interest of the organization.

Sergeeva (2019) suggests that senior managers construct the meaning of governance through narratives. We saw before that Havermans et al (2015) suggest that narratives can strongly influence people's perceptions. Biesenthal & Wilden (2014) show relational governance can strongly influence community, behavioural and social themes through active participation.

Pemsel et al (2014) investigate knowledge governance in project-based organizations, so how actually to bring knowledge to people. They construct a four-step process:

- (a) *Setting the goals – macro antecedents*: including: project and organizational culture; instructional units; dynamic learning boundaries; and job characteristics:
- (b) *Providing the means – micro conditions*: including: beliefs; attitudes; values; and knowledge expectations.
- (c) *Controlling progress – micro behaviours*: including: knowledge behaviour; communication patterns and shared decisions.
- (d) *Achieving knowledge-based goals – macro constructs*: including: dynamic capabilities; competencies; and communities of practice.

Many of the issues were inputs and processes in the team performance framework we met when considering groups decisions. They are also artefacts and espoused values and beliefs in Schein and Schein's (2017) three levels of culture, taking us back to where we started

## Conclusion

Several papers on the governance of project management suggest that good governance is associated with improved project performance, but the mechanism that creates that link remains under explored. In this paper we propose it may be because governance is associated decision-making, and to investigate what evidence there may be for that we have reviewed papers on governance published in the three major journals of project management: the International Journal of Project Management; the Project Management Journal; and the International Journal of Managing Projects in Business. Every paper with the word governance in the title was identified. There were 36 papers, 26 from IJPM, 8 from PMJ and 2 from IJMPB. Müller et al (2016a, 2017) showed the governance and governmentality systems adopted can influence project success. Why is this? Our research question is:

RQ1: how do governmentality and governance of project management influence decision-making on projects and in project-based organizations?

Only three papers directly addressed the impact of governance on decision-making: Müller et al (2014b, 2016b) and Sergeeva (2019). Müller et al were investigating how the governance structure influences decisions relating to ethical issues and showed the governance paradigm as defined by Müller & Lecoivre (2014) influences the way project managers respond to ethical issues. Rather unsurprisingly they game the system. In organizations following a shareholder school of governance they take decisions beneficial to shareholders; in organizations following a stakeholder school of governance, they take decision beneficial to a wider set of stakeholders; if they are controlled by behaviours, they show they are following the desired processes; and if they are controlled by results, they try to show they are achieving the desired results. Trust is greatest in organizations following a stakeholder school. Sergeeva (2019) said that in her interviews governance was often associated with

improved decision-making. She says that corporate governance is about delegating authority to groups to take decisions, whereas operational governance is about delegating authority to individuals. She said decisions and the reasons for them should be recorded so they can be reviewed later. This is one of the principles suggested by APM (2004). Sergeeva showed that organizations with a balanced flexible approach to governance can achieve better innovation.

Müller et al (2014a, 2015) investigated enablers of governance. They looked at process facilitators and discursive abilities. Discursive abilities included aligning strategy with objectives, creating communication mechanisms, creating awareness, and a culture for one discussion, all of which will facilitate decision-making. In the second paper they invoke Institutional Theory to investigate how organization can create social behaviour to guide people to take decisions in the best interest of the organization.

As we have said, most of the papers do not directly address how governance influences decision-making. But we identified six areas of organizational behaviour which influences decision-making and investigated what the papers say about how governance influences those six areas. The six areas are:

- Organizational culture
- Decision architecture
- Naturalistic decision-making
- Decision-making in groups
- Identity
- Social representation

Weber & Hsee (2000) suggest culture influences decision-making through behavioural norms, judgement norms, risk perception and risk choices. Schein & Schein (2017) suggest culture influences decision-making through behavioural interactions, language, group norms, ways of thinking and mental models, and shared meaning. Schein & Schein (2017) also suggest there are three levels of culture: artefacts; espoused beliefs and values; and basic assumptions and understandings. The papers reviewed showed that governance can influence artefacts and espoused beliefs and values, (see for instance Biesenthal & Wilden, 2014). Basic assumptions and understanding tend to influence governance and governmentality. Papers showed how governance can influence behavioural norms, (see for instance Clegg, 2019), ways of thinking, mental models and shared values, (see for instance Müller et al, 2016a), and risk perception and responses, (see for instance Zwikael & Smyrk 2015).

Through choice architecture, organizations create an environment where they try to influence the way decisions are made, and the nature of the decisions taken. As we showed above, Müller et al (2014b, 2016b) show that the governance paradigm can strongly influence the decisions made. Müller et al (2016a) also show how governmentality can influence the environment and through that the nature of decisions made, depending on whether governmentality emphasises project-wellbeing, value, or process.

The papers say little about naturalistic decision-making and situational awareness. To find discussion on related issues in the project management literature, we turned to Havermans et al (2015), who discussed how narratives can influence naturalistic decision-making.

In investigating how governance can improve decision-making in groups, we looked at three issues. Lappi et al (2018) show how governance can improve the inputs and processes of a

team working framework, (Reader et al, 2009). Similarly, Müller et al (2015) invoke institutional theory to show that governance can improve team working. Sergeeva (2019) suggests governance can empower teams to better take decision. Governance defines the management processes (Joslin & Müller, 2016; McGrath & Whitty, 2015), and thereby influence the mental models of groups. Similarly, Müller et al (2016a) suggest that governmentality will frame mental models, and Müller et al (2015) suggest enablers of governance. None of the papers give guidance as to how governance can ameliorate group biases. Several suggested how governance can increase team identity, and so perhaps worsen group think, group polarization and escalation of commitment. Sergeeva (2019) suggests how governance can try to ensure people have the right information to make decisions, and several papers emphasize the linking of projects to organizational strategy, (see for instance Too & Weaver, 2014), which can reduce the chance of escalation of commitment by ensuring project teams are aware of how the project is linked to organizational strategy.

Identity is important so people feel they belong to the project and to the parent organization. Toivonen & Toivonen (2014) give an example where the project team did not identify with the parent organization. They were making decisions not consistent with the needs of the parent organization, requiring senior management to change the governance structure. Most authors suggest that defining roles and responsibilities is a significant element of the governance of project management, (see for instance Lappi et al, 2018). Müller et al, (2014a, 2015) show that identity is an important organizational enabler for governmentality.

Social responsibility is primarily about knowledge management, ensuring people have the knowledge and understanding to do the work for which they are responsible. Pemsal et al (2014) investigate knowledge governance in project-based organizations. Many of the issues they consider are inputs and processes for the group working framework, (Reader et al, 2009), and are related to organizational culture. Müller et al, (2014a, 2015) suggest that governance builds social exchange and governmentality builds social cohesion. Sergeeva (2019) studied the role of narratives in constructing meaning, as did Havermans et al (2015), although they weren't studying governance.

Most of the papers do not directly address how governance impacts on decision-making. But we have seen that governance and governmentality can impact on the six areas of organizational behaviour that influence decisions-making. Thus we can conclude, in some circumstances, governmentality and governance are independent variables which can influence the six psychological constructs and so influence decision-making on projects. In those circumstances good governance could lead to good decision-making and so improved project performance, as initially proposed. However, we also saw instances where the six psychological constructs can influence governance. For instance, MacCormick (2019) suggests informal culture can influence governance. We also saw instances where Müller et al, (2014a, 2015) show that some of the six psychological constructs are enablers of governmentality and governance. In those circumstances the psychological construct may be an independent variable that influences governance and decision-making, and so although good governance and good project performance are associated, the psychological construct is the independent variable that creates the association.

The next steps of this research will be to further investigate the link between project governance, decision-making and project performance through case studies and interviews. Case studies will be conducted to show the link between decision-making and project performance, and investigate the role of the six psychological constructs and governance in

improving decision -making and so improving project performance. The interviews will be conducted with project managers to explore what influence their decision-making. The interviews will be conducted under the framework of Cognitive Task Analysis and the Critical Decision Method, (Crandall et al, 2006).

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