

Public Administration and Transdisciplinarity: A Modalistic Approach toward Knowledge Co-Construction

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Abstract

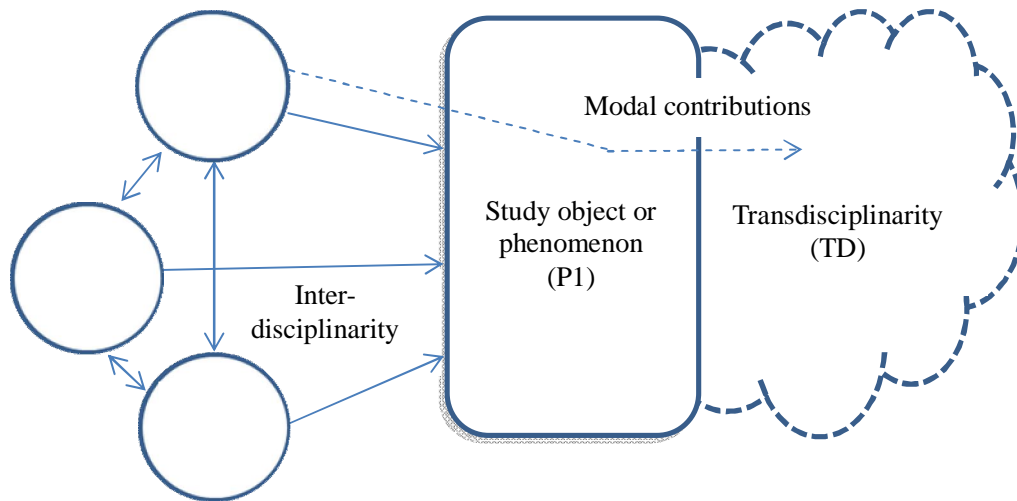
As an applied social science discipline, Public Administration is a highly diverse field of scientific enquiry that is evolving rapidly. With the emergence of the so-called Mode 2 of knowledge production, the realization increases that complex societal challenges cannot be addressed through singular disciplinary perspectives. There is general agreement among scholars that their thinking should not be dependent on particular disciplines, in order to search for potential solutions to complex societal challenges. Interdisciplinary cooperation and integration often leads to transdisciplinarity from which new insight emerges. In this regard the question is to what extent individual disciplines could contribute to the construction of transdisciplinary knowledge. The purpose of this article is to reflect on the potential cognitive-epistemic (knowledge-based) contributions that Public Administration as study domain could make to transdisciplinarity. For this purpose the philosopher Dooyeweerd's modality perspective is utilized as a framework.

Key Words: Public Administration, Transdisciplinarity, Interdisciplinarity, Dooyeweerd, Modalities, Knowledge co-construction

1. Introduction

The purpose of this article is to reflect on the potential contributions that Public Administration (henceforth PA) as discipline could make to the construction of transdisciplinary knowledge. The basic premise is that scholars in PA should partake in interdisciplinary endeavors to make a meaningful contribution to the co-construction of "new" knowledge (in this case transdisciplinarity) in the social sciences.

The Dutch philosopher, Herman Dooyeweerd, suggests that all objects or phenomena, everything that forms part of the human perception of reality, consist of fifteen modalities. These fifteen modalities provide a logical, conceptual framework that could be utilized to analyze phenomena. Due to the fact that the knowledge domains of specific disciplines could be traced back to these modalities, they also provide a framework for inter- and transdisciplinarity. As such, this article will focus on the modalistic approach to knowledge construction. In the process the study will utilize the modal perspective of Dooyeweerd as framework to reflect on the potential contributions of PA as discipline to sense-making and knowledge construction in the social sciences. This focus can be illustrated by the following diagram:

Diagram 1: Modal contributions of Public Administration to transdisciplinarity

When disciplines (D1 – D3) collaborate and integrate their insights to investigate a particular object or phenomenon (P1), this process is termed interdisciplinarity. Due to such collaboration a new insight emerges, which could lead to transdisciplinarity – the transcending of the traditional knowledge domains of individual disciplines. This could eventually usher in the birth of new disciplines. Elements of the knowledge that is constructed due to interdisciplinary collaboration and integration, could be traced back to disciplines (D1 – D3), which partook in the study endeavor. Transdisciplinary knowledge construction could thus be regarded as a universum or larger whole of disciplinary knowledge, but is not limited to that whole. This is in line with Newtonian ontology, which holds that “the whole is the sum of the parts” (Foster-Carter, 1998). The concern of this article is the potential modal contributions that Public Administration (D1) could make to this universum, namely transdisciplinary knowledge construction.

2. Knowledge construction deconstructed

Since the dawn of civilization humankind has always been fascinated by gaining insight, knowledge and truth about perceived reality. During the 5th century BCE, the Greek philosopher, Anaximander, referred to the “unbounded-infinite” depicting the vastness of knowledge about the world we live in. Immanuel Kant (1724-1804) later aided the quest for knowledge construction by referring to two dimensions of knowledge namely the “universal law of causality and the moral law within” – in other words, the dimensions of what *is* (i.e. perception of reality, science) and what *ought to be* (i.e. normative, values). The Dutch philosopher, Hendrik van Riessen, proposed further that disciplines from both the natural and social sciences, should aid the universal quest for knowledge by striving to answer “boundary questions” (“Grensvragen”) (Strauss, 2009: 2-3). However, the search for answers to such foundational questions has typically been influenced by human perception. Descartes (1596-1650) called the factual side of reality or the *episteme* (Greek for pure knowledge) “human constructions”, and therefore mere “modes of thought”. Bruno (1989) as well as Hyland and Bondi (2006) confirm this point by stating that knowledge construction in the social branch of knowing (i.e. science) has always been a contentious issue. In social sciences it is generally expected that academic discourse will offer a model of rationality and reasoning to clarify social phenomena to the researcher.

Jakubik (2007) observes that the scientific literature provide many definitions of knowledge. From an ontological point of view Kerkhoff and Lebel (2006) define knowledge as a justifiable belief, whilst from an epistemological vantage point Polanyi and Prosch (1975) as well as Spender (1998) distinguish explicit from implicit (tacit) knowledge.

- Explicit knowledge refers to formal articulated knowledge, which is expressed as words, numbers, or formulae.
- Implicit or tacit knowledge on the other hand is not easily expressed and may even be impossible to capture and to disseminate.

The construction and production of knowledge as an asset, is however not a static process. According to Nowotny, Scott and Gibbons (2003:79) as well as Gibbons *et al.* (2010: 17, 70), the production of knowledge and the process of research are transformed radically. They coined the concept “Mode 2” to describe a new mode of knowledge production in contrast with “Mode 1”, which they regard as the “old paradigm” of scientific discovery. The “old paradigm” was characterized by an “internally-driven taxonomy of disciplines”, while the new paradigm (Mode 2) has led to the social distribution of knowledge, which is application-oriented and transdisciplinary in nature (Nowotny, Scott and Gibbons, 2003: 79).

The altruistic ideals of the Knowledge Society are to address societal problems as a collaborative effort for the betterment of all. Collaboration should exist between citizens, technical experts, scholars and other stakeholders in co-research endeavors that search for answers or solutions to common problems (Cornwall, 2004). According to Stokolset *al.* (2005) and Jasanoff (2003), there exists co-construction (i.e. disciplinary collaboration and integration) and co-production (i.e. co-research to produce knowledge products) of knowledge, which leads to stronger commitment of the sciences to address societal problems. Hage, Petersen and Peter (2010:261) refer to such knowledge as “socially robust knowledge” and stress that the effective interaction between science and society requires “research-led participation”.

3. The nature of disciplines and transdisciplinarity

The origin of disciplines as knowledge domains can be traced back to the philosophical works of the classical Greek philosophers Socrates, Plato and Aristotle (cf. Alexander, 2011: 195). However, only in the nineteenth century did scholars establish real disciplinary communication systems, mainly for purposes of scholarly instruction. The emergence of disciplines can be regarded as synonymous with the establishment of “scientific communities” as theorized by Kuhn (1970: 7). Scientific communities facilitate the collaboration and interaction among scholars to share expertise, scientific values, and interest in common problems. The Oxford English Dictionary defines a discipline as “a branch of learning or scholarly instruction”. An academic discipline generally demarcates a particular field of study, which provides a framework for the construction and production of scholarly knowledge (Foucault, 1979: 223; Doheny, Cook and Stopper, 1987). Such efforts in knowledge construction and production facilitate the development of a corpus of knowledge that is distinct from that of other disciplines. The corpus or body of knowledge of disciplines within for example, the applied branch of social sciences, has a strong practical and pragmatic orientation (Keen, 1980).

An important point about the nature of disciplines is that it consists of a set of ideas, traditions and regulations for research that participants have to learn and adhere to (Rutgers, 2010). This means that within the discipline certain ways of thinking and reasoning are approved of, and others not; some phenomena and problems are regarded as worthy of research and others are deemed to be unimportant. Rapoport (1958: 972) postulates in this regard that disciplines require *discipline* on the part of its participants – meaning that it places constraint on their mode of thought. In similar vein Norgaard (1994: 101) cautions that participants in co-construction of knowledge should be conscious of their own particular conceptual frameworks, as well as of the advantages and disadvantages of the frameworks other disciplines employ. The use of frameworks in disciplines is in accordance with the notion of a “paradigm”, as postulated by Thomas Kuhn (1970). A variety of paradigms are generally present in all disciplines – often simultaneously and competing. The presence of these disciplines does not indicate that a science is still immature or that it is degenerating; on the contrary, it may indicate its vitality.

When disciplines join forces to study certain objects or phenomena, clashes may become evident of competing paradigms, research traditions, epistemologies, and modes of thought. In this regard Strauss (2009:8) remarks that academic disciplines are “stamped by diverging and often conflicting trends of thought”. Such collaboration and integration of disciplines is known as *interdisciplinarity*. Interdisciplinarity thus refers to efforts of knowledge construction and production in which more than one branch of learning is involved (Norgaard, 1994: 102; Nissani, 1997: 205). The prefix “inter-” means “between, among, or mutually”, and suggests exchange (Karlqvist, 1999: 381). Interdisciplinarity thus involves the combining of two or more academic fields into a single discipline. Augsburg (2005) points out that an interdisciplinary field crosses traditional boundaries between disciplines and theoretical models as new needs and professions emerge. This type of disciplinary collaboration differs from “multidisciplinarity”, which involves separate disciplinary contributions without mutual interaction and integration.

According to most interdisciplinary theorists, some problems of knowledge construction are neglected because these problems “fail to fit in with disciplinary boundaries thus falling in the interstices between them” (Huber, 1992: 285). Perhaps, as Ruscio (1986) argues, the disciplines in practice are not as demarcated sharply as most theorists suppose. Disciplinary researchers seem capable of filling productive, yet unoccupied, niches, in order to address the “gray areas” among the disciplines (Nachmias and Nachmias, 1976: 4). Focusing on these areas, Brewer (1999: 327) refers to the “moreness” advantage of interdisciplinarity and suggests that individual, diverse disciplinary perspectives lead to fragmentation of insight and knowledge. He continues to argue that societal problems require interdisciplinarity treatment, which the conventional knowledge institutions have been unable, unwilling or slow to provide. Real-world problems do not exist independently of their socio-cultural, political, economic and even psychological contexts. Therefore interdisciplinarity could provide the much needed contextually. Such a contextual vantage point is necessary to uncover the relationship between the “parts” and the “whole” of a problem (Brewer, 1999: 329). The need is thus accentuated for multiple perspectives to illuminate the issue at hand.

As reflected by Nowotny, Scott and Gibbons (2003: 79), there is a growing recognition that improving the quality and impact of research means taking into account the complex contexts and drawing on more interdisciplinary and collaborative analyses. Such collaborative research efforts correlate with Mode 2 of knowledge production, which displays a strong transdisciplinary dimension (Hardy and Williams, 2011: 405). A transdisciplinary approach thus works at the crossroads of several disciplines. It transcends disciplines, brings them together, and reaches beyond them (Gasper, 2004: 311). In this sense Max-Neef (2005) also confirms the interconnected and multiple levels of reality that transdisciplinarity could bring. The general aim is to connect study fields and transcend disciplinary barriers. As a result, new sub-disciplinary fields may emerge by absorbing theories, models and traditions from other disciplines (Rein and Schön, 1994).

The process of transdisciplinary research involves the integration of problems at its core. As Myrdal (1975: 142) puts it, “there are no economic, social, or psychological problems, but just problems, which do not respect disciplinary boundaries”. Transdisciplinary research proposes useful societal interventions. This form of research is normally conducted in the form of projects, financed with project-bound funds and carried out by temporary teams assembled for the purpose at hand. The goal of such research is to have a practical effect on the world beyond science. In this regard, Brown, Harris and Russell (2010: 16) convincingly argue that transdisciplinarity provides the necessary perceptual vantage points to tackle “wicked” societal problems. Scholars should move beyond disciplinary confinements and employ collective inquiry to understand and appreciate the complexities associated with phenomena.

4. Public Administration as (inter-)discipline

As explained in the previous section, disciplines over time construct a knowledge domain, albeit with porous scientific borders. Public Administration (PA) as study domain also underwent transition through various paradigmatic phases when it originally emerged from Political Science as a distinct discipline during the 1880s in the Western world. The work of theorists such as Gulick (1937), Simon (1946), Rowat (1961), Waldo (1968), and Caiden (1991) contributed significantly to establish PA as a distinct discipline. However, what remains, is the “Grensvragen” (boundary questions) that PA as a relative young and emerging study field needs to concern itself. In other words, what kind of contributions could this discipline make to the quest for new knowledge (i.e. transdisciplinarity), insight and rationality about reality?

Rutgers (2010: 1) explains that as a social science discipline, PA’s object of study is not some simple empirically observable phenomenon. It is rather interdependent and intertwined with theories and conceptions about, for instance, social justice, law and order, ethical behavior, government responsibility, and other social constructs. Rutgers (2010: 2) further warns that the term “public administration” easily results in confusion due to many factors, ranging from the everyday use of administration, execution, management, and government as interchangeable and distinct concepts. At PA’s core is a concern with the nature of the state, the role and functions of Government and its institutions in their mandate for policy-making and implementation. It further concerns the utilization of public resources and a public ethos characterized by responsiveness and social accountability (Day and Klein, 1987: 5).

According to Gasper (1990, 2000) disciplines in the social sciences have built up their own worlds of theory, each designed to clarify a selected aspect or aspects of life – politics, economics, sociology, et cetera.

But the complexity of governance-related phenomena often exceeds the grasp of such knowledge gained through particular disciplines, even when the knowledge is brought together from various disciplines. Since the formalization of a body of knowledge associated with the study of the administration of the state, various attempts have been made to conceptualize and demarcate its boundaries, arguably with various degrees of success. Several definitions of PA are suggested in the literature, but a comprehensive theoretical and operational definition still eludes theorists. Kernaghan (2010) in this regard states that "... Public Administration has no generally accepted definition ... because the scope of the discipline is so great and so debatable that it is easier to explain it rather than to define it." Gerald Caiden, in his 1971 publication, *The Dynamics of Public Administration*, states that "... no one has a simple definition of Public Administration that is completely acceptable for both practitioners and scholars ..." Nicholas Henry (1989: 20-51) also argues that "... Public Administration is a wide variety of amorphous combinations of theory and practice."

Since the early developments of PA, a lively debate is thus evident about its locus and focus (in this case, knowledge construction and production). Public administration as the "doing" of governing is as old as humankind itself. Aspects of the activities of government have been described by philosophers such as Socrates, Plato, and Cicero. From the earliest times people realized that by working together, they could reach their goals easier than by individual efforts; the goals being the delivery of services and products for the common good. Thus people started off by working in small groups, then larger groups, and finally they established institutions to arrange and co-ordinate their activities.

Several writers have defined the scope of PA in varying terms. Gullick and Urwick (1937), for example, sums up the scope of the subject by the letters of the word POSDCoRB which denote the following functions: Planning, Organization, Staffing, Directing, Coordinating reporting the Budgeting. Critics soon pointed out that the POSDCoRB activities comprised neither the whole of administration, nor even the most important part of it. Despite a healthy discourse on the scope of the discipline, relative consensus exists that in any modern society the study of PA concerns the activities of the public service and its strategies to tend to the needs of the population. PA can therefore in very simple and holistic terms be described as the study of the various activities that are taking place in the public sector. The discipline is furthermore characterized by various approaches to the study of the administration or executive branch of the government. Some of the most common approaches include:

- Normative approach (refer to "ethical modality" below)
- Institutional and structural approach (refer to the "social modality" below)
- Legal approach (refer to "juridical modality" below)
- Business management approach (refer to the "economic modality" below)
- Behavioral approach
- Philosophical approach
- Historical approach
- Scientific approach
- Politics/administration-dichotomy approach
- Comprehensive approach
- Conventional approach
- Generic administrative approach

According to Thomson and Walker (2010) PA works at the crossroads where several disciplines converge. They continue to add that PA is better seen as "interdisciplinary field" rather than conventional scientific discipline. Various scholars such as Ventriss (1991), Forrester (1996), Rodgers and Rodgers (2000), Schroeder, O'Leary and Jones (2004), and Rutgers (2010) have confirmed the interdisciplinary nature of PA. Golembiewski (1977: 216) and Forrester (1996: 565) indicate that the field is not necessarily suffering an identity crisis as much as it is "exceptionally interdisciplinary and complex". Whereas more conventional disciplines can frame their study domain, the broad applied nature of PA complicates the tidy demarcation of its study boundaries (Gasper, 2000). This fact need not be considered in a negative sense. Chen *et al.* (2008), for example, argue that any study domain is fortunate if it does not develop into a traditional discipline by not restricting itself to a narrow set of study domains and procedures. They continue to argue that postmodern study domains should "keep drawing upon multiple disciplines spanning the whole spectrum of hard-pure, hard-applied, soft-pure, and soft-applied sciences".

In this way study domains may best thrive as a multi-, inter-, or transdisciplines that are capable of coping with the complexity of problems and phenomena without unduly simplifying them.

4.1 The nature of knowledge construction in Public Administration

Since attempts have been made to demarcate the study domain of the discipline, the conceptual model of the discipline has changed profoundly. There was a shift from the so-called traditional Public Administration (PA), based on Weber's bureaucratic theory, to the New Public Management (NPM) model, Public Governance, Public Value, and Network Governance (Hughes, 1994; Pollitt and Bouckaert, 2000; Yew and Xun, 2009: 3). Especially the paradigm of the New Public Management (NPM) has emerged as a key approach in shaping reforms of the public sector since the late 1980s. The failures of governments in maintaining economic stability, protecting environmental quality, and reducing poverty have led to a search for leadership and innovative solutions outside the public sector. Thus NPM has been embraced enthusiastically in many countries. Its critics, however, argue that reform initiatives guided by NPM have undermined fundamental governance values that distinguish the public sector from the private, business sector. These values include fairness, justice, responsiveness and participation (Frederickson, 1997). The term "Public Administration" is preferred for purposes of this article to refer to the root or foundational theoretical underpinnings of the discipline. However, this term should be regarded as including subsequent paradigms such as New Public Management and Public Governance.

The presence of different and even competing paradigms has significant implications for knowledge construction and theory-building in the field. It may also influence the particular disciplinary contributions that PA could make to transdisciplinarity. A singular paradigmatic approach to the study of phenomena may impoverish the discipline (cf. reductionism). A traditional paradigm that focuses on bureaucratic, hierarchical control, technocratic professionalism, and rule-based government, may for example, be criticized by a more contemporary perspective, but may still be deemed highly relevant for less-mature democratic states.

A more balanced approach may be necessary whereby the various paradigms receive equal attention. To illustrate the need for a more balanced vantage point, the recent introduction can be considered of the concept "governance", which according to scholars such as Rutgers (2010) and Raadschelders (2003), is replacing "public administration" as the key term to denote its object of study. A content analysis of recent literature on governance confirms that this term features strongly in the contemporary discourses in PA and its study domain. However, current debates frequently get entangled in paradigmatic differences (Miller and Dunn, 2006). It could be argued that currently the knowledge domain of the discipline does not provide adequately for the dynamics and complexities that accompany the phenomenon of governance. Debates range from the perspectives that "governance" is an alternative to "public administration", to the view of some theorists who argue that "governance" is merely a contemporary buzzword that will eventually become obsolete (cf. Frederickson, 2004: 2; Menzel and White, 2011).

As stated earlier, theorists of PA finds themselves internationally engaged in debates about the most prominent thought frameworks prevalent in countries and the nature of so-called paradigmatic shifts, each with distinctive, but not exclusive, terminology, theories and approaches. Currently there is no consensus on the specific paradigms and thus on the way that knowledge should be constructed in the discipline.

A further aspect that complicates knowledge construction in the discipline, is the fact that PA is generally divided along two dimensions:

- an academic (i.e. theoretical) focus versus a practice (i.e. vocational) orientation; and
- research (knowledge construction and production) versus an educational focus.

Scholars, who pursue an academic-research focus, typically follow a positivist approach in contrast to those who entertain a vocational-educational agenda. With respect to knowledge co-construction, it is important to note that again a balanced perspective is accentuated. Maiello *et al.* (2013:141) confirm the role that scholars of PA could play as "catalysts of knowledge co-production".

A healthy discourse and exchange between scholars (academic-research focus) and practitioners (vocational-educational focus), could, for example, lead to the construction of knowledge that is socially more relevant and actionable.

Transdisciplinary research methods could facilitate such knowledge construction by adopting more appropriate research approaches such as participatory action research, community-based, action research, or insider-outsider approaches (Lang *et al.*, 2012). As stated previously, in contrast to interdisciplinarity, which is mainly applied to purely theoretical or practical themes, transdisciplinarity takes phenomena in the real world as its starting point. As such it is especially appropriate for applied social sciences like PA. By involving diverse actors in the process and recognizing their contributions, the process is considered more legitimate, which ultimately leads to more “socially robust knowledge” (Gibbons, 2000: 161). This perspective makes it evident that a new co-mode of knowledge construction is necessary. This probably is the reason for signs that scholars in social science disciplines increasingly adopt transdisciplinarity as a research paradigm that adds value.

For purposes of this article, this apparent confusion over the scope and nature of the discipline PA, has serious implications. In this regard three strategic questions can be posed:

1. Firstly, what particular contributions could scholars and practitioners of PA make to transdisciplinarity? In other words, why would an interdisciplinary research team incorporate a PA scholar if his or her particular scientific contribution towards better understanding of the social phenomenon under investigation cannot be determined?
2. Secondly, if the study field is “fuzzy” and diverse, how could one attempt to gauge the potential contributions in transdisciplinarity? The implication of the latter is probably that theoretical and methodological contributions to knowledge construction would rather be limited to a particular subfield such as public finance, human resources, and organizational studies.
3. Thirdly, should one consider more practice/vocational and educational contributions or should one seek contributions from more theoretical models and approaches?

To conclude this part of the reflection it could be concluded that the potential contributions of PA in transdisciplinary co-construction of knowledge may be influenced by issues such as –

- different and often-competing Kuhnian paradigms;
- different scholarly approaches;
- the nature of the state and government traditions in which public administration occurs;
- the vocational (practical) versus theoretical focus; and
- the diversity of subfoci within the discipline.

It should be clear that the operationalization of the purpose of this article, as summarized above, hold various complexities. Taking due cognizance of these complexities, the section below attempts to frame the potential contributions of PA in co-construction efforts to produce transdisciplinary knowledge. This will be done by following a modal approach and in particular building on the design of Herman Dooyeweerd.

5. Dooyeweerd and the modal construction of knowledge

The Dutch philosopher, Herman Dooyeweerd’s unique contribution to the construction of knowledge is his modal perspective to reality. Dooyeweerd (1894-1977) suggested that there is a “ground motive”, almost a spiritual driving force that impels theorists to interpret reality. This implies that scientific and theoretical thought is never fully neutral or autonomous of the thinking subject. He proposed that the meaning ascribed to all physical and metaphysical objects and phenomena can be classified in terms of fifteen modalities or “law-spheres”. Dooyeweerd’s fifteen modalities thus present sense-making perspectives in science; it offer fifteen “ways of seeing things”. Dooyeweerd, however, never claimed that these fifteen modalities are complete. He argued that “more penetrating examination may at any time bring new modal aspects of reality to the light not yet perceived before” (Dooyeweerd, 1953). Collectively these fifteen modalities constitute a framework, which Dooyeweerd terms the “law side of created reality”. Each of the modalities is distinct, but is also highly interdependent and interrelated. Dooyeweerd’s “Suite of Aspects” or modalities with their meanings (e.g. application possibilities in endeavors of knowledge production) are listed in the table below.

Table 1 : Dooyeweerd’s fifteen modalities or “law-spheres”

Modality (aspect or “law-sphere”)	Meaning	Grouping or dimension	Typical disciplines
Numeric	Quantitative, amount	Mathematical	Mathematics, Statistics
Spatial	Space		Geometry, Geography
Kinematic	Movement		Dynamics, Kinematics
Physical	Energy, mass, forces	Pre-human	Physics, Chemistry, Geology
Biotic	Organic, life functions, organisms		Biology, Botany, Zoology
Sensitive	Physic, sense, feeling, emotion		Psychology
Analytic	Distinction, conceptualization	Human individual	Logic, Analytics
Formative	Achievement, construction, history, technology		Design Sciences, Histology
Lingual	Meaning carried by symbols		Linguistics, Semiotics
Social	Relationships, roles, conventions	Social	Sociology
Economic	Frugal management of resources		Management Science, Economics
Aesthetic	Harmony, play, enjoyment		Aesthetics
Juridical	Responsibilities, rights	Structures of society	Juridics, Legal Science
Ethical	Attitudinal, generosity		Ethics
Pistic	Faith, vision, aspiration, commitment, belief		Theology

Source: Basden (2002), available at www.dooye.salford.ac.uk/andrew.html

Coletto (2013: 7) suggests that scholars could use these modalities as “gateways” to explore a certain field of study. A particular modal aspect can be utilized as a “channel” to study some aspects of concrete reality. Such an aspect thus has application value in practical analysis, as well as in theoretical research. Each aspect delineates a distinct scientific arena (i.e. discipline) and as such could act as a powerful tool to frame phenomena and to guide interdisciplinary research. Strauss (2009: 47) confirms the value of the modal foci of disciplines and states that “... the cardinal question is not with what *object* (natural or social entity) or event does a discipline engage, but rather from what *perspective* (mode, modality) of reality are certain things, events and societal relationships studied by a particular academic discipline ...” Weideman (2013: 9) concurs by accentuating the value of a comprehensive modal focus. He points out that Dooyeweerd’s philosophical framework avoids the reductionist pitfalls that impede theoretical formation of concepts (i.e. knowledge construction), in which one mode of reality is absolutized, and all others are subsumed under it.

As stated previously, interdisciplinarity is more than just pushing together several disciplines; it involves co-modes of knowledge construction, symbiosis and mutual understanding. The recognition of the aspects, and an understanding of Dooyeweerd’s view on the nature of these aspects, can aid this mutual understanding. This can be done by firstly helping the participants to see where each is placed (i.e. in what modal aspect) and thus which aspects they need to take special cognizance of and perhaps learn about. Such a modal approach could overcome the “single-aspect” (i.e. narrow-focused) research which tends to isolate one aspect. Dooyeweerd’s perspective provides a powerful framework for discussing the relationships between sciences (or, rather between distinct scientific areas). It can be useful in working out how various fields of investigation relate to each other, what should be taken into account, and how it should be considered (Henderson, 1994).

In his *A New Critique of Theoretical Thought* (1958) Dooyeweerd regarded the state as a societal structure with “leading” and “foundational” functions. These functions are informed by especially four specific modalities or law-spheres:

- social,
- economic,

- juridical, and
- ethical.

As explained previously, the “ground motive” for scholars in PA can be regarded as the study of the state with its structures of governance and interactions with society. The four modalities thus have close relevance to its study domain. These four modalities will be utilized in the next section as framework to examine the disciplinary contributions of PA to transdisciplinarity.

6. Public Administration’s potential modal contributions to transdisciplinarity

By building on the modal perspectives of Dooyeweerd, this section proposes certain modalities that Public Administration (PA) as study domain could add to the construction of transdisciplinary knowledge. Against the backdrop of the expanding role and scope of functions of the phenomenon public administration as well as the summarized complicating factors in the discipline PA highlighted above, it is argued that the discipline could add particular value to knowledge construction based on the following modalities: social, economic, juridical and ethical.

6.1 Social modality

Dooyeweerd regarded the social modality as the relationships between various actors in society, which include their respective roles and the conventions that “order” the nature of their interaction. The construction of knowledge in PA mainly concerns the interrelations and interactions between state, government (and its administration) and surrounding society (cf. Stillman, 1991: 173). Appleby (1947: 94) in this regard refers to the (public) administration as the “institutional apparatus surrounding the ruler”, the basis of government.

With the emergence of the so-called “Administrative State”, public administration has become an essential part of society and thus a dominant factor in the successes and failures of government (cf. Spicer, 2001). In the execution of their governance function, it is generally accepted that the functioning and role of governments are organic by nature (Borins, 1994). Governments, for example, have become increasingly inclusive and participatory. This particularly applies to the creation of networks and the interaction between government, business and civil society (Osborne, 2010). As a social construct, the term “governance” generally refers to the governing or (public) administration of a state and its society (Pierre, 2000: 241).

Regarding the disciplinary contribution of PA as social modality, the interrelated elements of “government” (i.e. systems and structures) and “governance” (i.e. networks, societal interaction) provide a useful framework. Talbot (2001: 270-271) and Kooiman (2006) identify the following interrelated elements of *government*:

- organization (such as state departments, ministries, agencies, public enterprises and local government);
- public resources (such as laws, money and employees);
- policy programmes (such as health care, education and defence);
- persuasion (covers information, statistics, research and communications); and
- rules (including the making of rules – promulgation, enforcing rules – penalties, and exemplifying compliance with rules; refer to the juridical modality below).

Jong Jun (1996: 30) and Kamarack and Nye (2002) in turn, propose the following complex interactions between systems that are identifiable with *governance*:

- a government system, which entails the regulatory, administrative and organizational functioning of such a state;
- a social system, referring to the interaction of human activities within a society set-up;
- a political system demonstrated by the dynamics between groups within a society, in order to exercise control over the state; and
- an economic system, indicating the interdependence of human activities that facilitate the accumulation, production and spread of wealth within the target of a nation-state.

As a discipline PA has built an extensive body of knowledge about the elements and systems of government, its administration, and the systems of governance mentioned above. This body of knowledge entails adopting and adapting various theories and models from adjacent or references disciplines from the social branch of science. These are notably from disciplines such as Political Sciences, Sociology and Philosophy. Some of these theories include:

- Social Contract Theory
- Classical theories of the state
- Theories of political control of the bureaucracy
- Theories of Governance
- Theories of Bureaucratic Politics
- Bureaucratic Theory and “Bureaucratic pathology” (Kettl, 2000:30).
- Organization Theory
- Public Institutional Theory
- Public Good Theory
- Structural-Functional analysis
- Adaptive Structuration Theory
- Mechanistic and Organic Systems Theory
- Theories of Public Management

In a social law-sphere where issues of social transformation and development are prevalent, PA could aid the co-construction of transdisciplinary knowledge further by means of theories adopted from development studies including Growth and Catch-up Theory, Underdevelopment Theory, Modernization, Human Development Theory, and Environmental approaches to development.

As social constructs public organizations are further core study domains for PA. From the perspective of organizational theory and improved management O’Toole and Meier (2011: xii-xiii) are of the opinion that PA (including Public Management) could add specific value. This could entail the managerial dimensions of internal organizations, as well as perspectives on the (public) organization’s interrelationship with the environment. Public administrators utilise structures, systematic processes, and procedures to regularize organizational activities. Therefore as such any transdisciplinary effort of knowledge construction that focuses on organizational theory could benefit from the specific insight that PA scholars introduce in this regard.

6.2 Economic modality

According to Dooyeweerd the economic modality refers mainly to the “frugal management of resources”. On a broader, macro level, this could include the way the state obtains and utilizes natural and other resources on behalf of the general well-being and prosperity of society. The state, through its governance structures, should work towards the common good of society by facilitating economic growth and development. On a more practical and micro level the economic modality may refer to public management competencies, functions, applications, and techniques to utilize resources efficiently, effectively and economically.

In a public sector context, resources refer to the inputs institutions in this sector utilizes, such as financial, knowledge and information technology, and human resources for delivering public goods and services (Dunleavy *et al.*, 2006: 468). Less tangible public resources include political mechanisms such as the legal authority or public power derived from the legitimacy of the state. These resources can be used to compel people to act in compliance with socially agreed purposes (e.g. paying levies and taxes). As an applied social science discipline PA has a strong vocational and pragmatic focus. It has constructed an extensive body of knowledge concerning the management of public affairs, mainly due to its recent “New Public Management” (i.e. “managerialism”) and Value-for-Money paradigms. Theories developed, adopted and adjusted mainly from disciplines in the economic and management sciences, which could aid transdisciplinarity include:

- Public Value Theory
- Economic Theory
- Welfare versus prosperity/market-driven economic approaches
- Fiscal and monetary policy approaches
- Theories on public accountability
- Classical to modern management approaches and theories
- Decision Theory
- Agent Theory
- Rational Choice Theory
- Human Capital Theory
- Motivation Theory
- Human Relations Theory
- Contingency Theory
- Scientific Management Theory

The importance of developing professional skills as a focus of professional training programs has been widely acknowledged (Denhardt, 1999; Straussman, 2008). Public sector administrators not only need to acquire knowledge about the field, but also need to develop professional skills which enable them to carry out their tasks more cost-effectively and efficiently (Denhardt, 1999). This aspect could further aid transdisciplinary perspectives regarding the efficient, effective, and productive nature of the economy of a state.

6.3 Juridical modality

Dooyeweerd's juridical modality centers mainly on issues of responsibilities and rights. Placing these responsibilities and rights in a public sector context, the German Idealist philosopher Hegel (1821) argued that the state has to guarantee the individual's existence, safety, and well-being. As the "protector of the weaker" in society, according to Hegel, the state has to intervene in market forces in order to guarantee a minimum standard of living for every individual. Hegel's ideas resonate in the "interventionist" and "developmental" states of contemporary political-economic thought.

As the "protector of the weak", the "order of society" and the "regulator of the economy" the concepts of state, government and public administration portray strong legal (juridical) concepts. Legal scholars regard the state as encompassing sovereignty and morality. Through subdisciplinary foci such as Administrative Law, Public Participation, Public Policy Analysis, and Local Democracy, PA can make a significant contribution to the construction of transdisciplinary knowledge. As stated previously, PA's main concern is with state, government, governance and society in general, and with the executive branch of government that implements policy in particular. This policy focus should be seen at the backdrop of the legitimate and legal (juridical) right of the executive branch of government to implement and enforce law. The administration of the state thus has the mandate to utilize the so-called "levers of power" of the state (i.e. military, educational system, media, and monetary power) to help provide stability of the state and to maintain law and order. As a discipline PA in this regard adds to knowledge construction through particular theories, models and approaches on state stability, policy-making and policy implementation, law enforcement, legal rights, and upholding the normative values enshrined in a country's constitution. Particular theories in this regard, borrowed from adjacent disciplines such Political Sciences and Communication Studies include:

- Democratic Theory
- Mass/elite Theory
- Public Choice Theory
- Political Systems Theory
- Game Theory
- Public Choice Theory
- Social Exchange Theory
- Dependency Theory
- Dialogic Communication Theory
- Gatekeeping Theory
- Agenda Setting Theory
- Knowledge Gap Theory
- Muted Group Theory
- Spiral of Silence Theory
- Expectancy Value Theory
- Social Penetration Theory

It is evident that although largely borrowed from adjacent or reference disciplines, PA has an extensive corpus of knowledge on good governance to contribute to judicial modalities in any related endeavors of transdisciplinary knowledge construction.

6.4 Ethical modality

Dooyeweerd regarded the ethical modality as "laws" governing normative issues such as attitude and generosity. The ethical modality is related closely to the previous modalities in the sense that government should govern in an ethical, generally accepted fashion, enforce laws, and facilitate economic prosperity. Public sector values are those providing a society's normative consensus about goals that should be pursued by Government and its institutions. These values often serve as a yardstick or criteria to gauge and assess outputs and outcomes produced by Government. These entail the quality of public services, social equality, the trajectory of social development and the level of economic growth.

As stated previously, two of the theoretical vantage points that scholars in PA utilise in the construction of knowledge are the normative approach and the behavioral approach. Both approaches could add significant value to the construction of transdisciplinary knowledge. Based on these approaches certain aspects are very much part of the study domain.

These include public sector values and service ethos, culture, service delivery standards, program evaluation as well as societal impact assessments. The "goodness" (i.e. normative-ethical) nature of a government and governance is a key concern and also the general outcome pursued by the study domain.

Although the way a society perceives the ethical fiber (i.e. “goodness”) of its government may differ from society to society, there seems to be general consensus (cf. Bratton and Van de Walle, 1992) that “good” governance should at least meet the following criteria:

- a healthy democracy maintained by wide-spread public participation in policy-making;
- general rule of law and impartial application of this law by the judicial systems and police service to maintain human rights;
- transparency in decision making and availability of information to society;
- responsiveness of state institutions to meet citizens’ needs;
- general consensus among stakeholders to reconcile conflicting needs;
- equity and inclusivity;
- efficiency and effectiveness in the use of scarce resources; and
- accountability and responsibility for the delivery of public services and goods.

Scholars in PA could guide the interpretation of data and the formulation of theory by understanding that the pursuit of value-for-money and efficiency (economic and social modalities) may compromise the realization of other public sector values such as social equity and service quality. Furthermore, PA could contribute to an understanding of the particular context in which values are applied. Aspects of culture, the heterogeneous composition of the society, and diversity issues, are significant variables in the application of sure-fast ethical governance. As such these values are theoretical vantage points and practicalities that scholars in PA could suggest and provide guidance on. Scholars could further facilitate an appreciation of competing value systems in society and the potential of conflict between public values and the interests of the individual, political party and the organization. As a contemporary discipline PA could also consider the extent to which public sector values, intentions and interventions are reflected in the public service. For example, it can pose the question on what the impact of government policies and operations is on society, and to what extent administrative action is non-discriminatory and fair. In this regard scholars should support the state with appropriate and innovative research, the production of cutting-edge knowledge and suggestions to improve service delivery.

This concludes a snapshot and broad outline of the potential modal contributions of PA to transdisciplinarity. The table below provides a brief summary of these proposed contributions.

Table 2: Synopsis of Public Administration’s modal contributions to transdisciplinarity

Modality	Public Administration’s knowledge domain contribution
Social	<ul style="list-style-type: none"> • government-society interaction, public participation, networks • governance and politics • social dynamics • public sector organizations • institutionalization of socio-economic changes and development
Economic	<ul style="list-style-type: none"> • management of large scale services • Value-for-Money approach • Government performance (i.e. efficiency, effectiveness and productivity) • ensuring growth and economic development • policy implementation
Juridical	<ul style="list-style-type: none"> • policy design and formulation • the preservation of the polity • the maintenance of stability and order • protection of the weaker sections of society • interpretation of public opinion
Ethical	<ul style="list-style-type: none"> • normative, public sector values • professional and ethical standards • good governance, administrative fairness and reasonableness • service liability, responsiveness and accountability • transparency

7. Conclusion

Through this article the researcher set himself a rather ambitious task, namely to reflect on the potential contributions that Public Administration (PA) as discipline could make to the co-construction of transdisciplinary knowledge. A single answer or solution to such a challenge is barely possible within the confinements of an article of this nature. However, broad parameters were provided by building on the modal perspective proposed by Dooyeweerd. It is evident that scholars in PA could contribute meaningfully to knowledge co-construction through especially four modalities. These were outlined as social, economic, juridic, and ethical law-spheres. Some of the more prominent theories associated with these modalities were identified and it is argued that these theories could aid the construction of knowledge in transdisciplinary research endeavors.

It surely is necessary to engage the modality perspective further. Such engagement and reflection could guide the positioning of PA in terms of the following aspects: theory development, research agenda, vocational orientation, and practical problem-solving competencies. Follow-up questions should also be considered, for example the potential (different) modal contributions that subsequent disciplinary paradigms such as New Public Management and Public Governance could make to transdisciplinarity.

The current complex societal challenges increasingly demand multiple perspectives to search for workable solutions. It is therefore expected that transdisciplinarity increasingly will gain prominence in social sciences. As a thriving discipline PA should not be left behind in the efforts of aiding the co-construction of socially robust knowledge.

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