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KNOWLEDGE DEVELOPMENT IN INDUSTRIAL/ ORGANISATIONAL PSYCHOLOGY (SOUTH AFRICA)

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ABSTRACT

Utilizing a meta-theoretical approach, the nature of knowledge development in I/O psychology (SA) is assessed. Analysis of the contents of the *South African Journal of Industrial Psychology*, shows that: empirical research has very substantially increased and is methodologically sophisticated; knowledge development is still almost exclusively tied to the positivist-empiricist paradigm and relies mostly on adaptations of non-local material. More indigenous research is required. A wider perspective, incorporating culture-sensitive research paradigms, strategies and methods is suggested in order to expand the research (knowledge) base and renew the discipline locally.

OPSOMMING

Die stand van kennisontwikkeling in die Bedryfsielkunde (Suid-Afrika) is in oorweging geneem vanuit 'n oorkoepelende, meta-teoretiese benadering tot kennis. Ontleding van die inhoud van die *Suid-Afrikaanse Tydskrif vir Bedryfsielkunde* oor die afgelope dekade toon dat: empiriese navorsing substantief toegeneem het en metodologies gesofistikeerd is; dat kennisontwikkeling steeds bykans uitsluitlik plaasvind binne die positiwisties-empiriese paradigma en grootliks aanpassings van nie-plaaslike materiaal verteenwoordig. Meer inheemse navorsing word vereis. 'n Breer beskouing, waarin daar van kultuur-sensitiewe navorsings-paradigmas, -strategiee en -metodes gebruik gemaak word, word voorgehou om die Bedryfsielkunde as vakgebied te verruim en kennisvernuwing plaaslik te bevorder.

The aim is to assess the nature of knowledge development in industrial/organisational psychology (hereafter: I/O psychology) in South Africa, with a view to determine progress, strengths and weaknesses and to suggest directions for future development.

For this purpose a broadly applicable, meta-theoretical approach to knowledge (Pietersen, 2000) is introduced and its suitability for I/O psychology as knowledge discipline discussed. This is followed by a meta-theoretically informed analysis and discussion of recent research trends, based on the contents of publications in the discipline's flagship journal, the *South African Journal of Industrial Psychology*. Past and recent reviews of the discipline are also incorporated in the discussion.

The paper reviews the meta-theoretic (meta-type I) and scientific (meta-type II) approaches in local I/O psychological research. In order to contribute to an expanded approach to research and knowledge development in the discipline, the narrative-interpretive approach (meta-type III) is briefly outlined.

THEORETICAL REVIEW

Meta-paradigmatic knowledge orientations

The discussion in this paper utilizes an encompassing framework of four basic orientations or modes of knowledge (alternatively denoted as: meta-paradigms, meta-orientations, meta-perspectives, meta-theory, and by other terms similar in meaning-intent) developed by Pietersen (2000). These are regarded as super-ordinate and joint epistemological-*cum*-ontological orientations or predispositions consisting of partially overlapping core characteristics. Meta-paradigms are to be viewed as fundamental and distinctive 'ways of understanding' and function as universal and collective 'windows of mind' – as basic outlooks on the world.

This, meta-scientific level of sense making needs to be distinguished from Thomas Kuhn's (1970) *intra-scientific* application of the term 'paradigm'. Kuhn uses various (overlapping) definitions for what he primarily takes to be guiding basic models of empirically established puzzle-solving knowledge *within* a scientific community. 'Paradigm' for Kuhn initially referred to "... accepted examples of actual scientific practice – examples which include law, theory, application, and instrumentation together – provide models from which spring particular coherent traditions of scientific research" (Kuhn, 1970, p. 10). Elsewhere, he regards a 'paradigm' as a "... strong network of commitments – conceptual, theoretical, instrumental, and methodological ..."(1970, p. 42). In reaction to criticism, he finally settled (in the Postscript to *The Structure of Scientific Revolutions*") on 'paradigm' as referring to two types of meaning "... the entire constellation of beliefs, values, techniques, and so on shared by members of a given community ..." (p. 175) and also as: "... the concrete puzzle-solutions...employed as models or examples ..." (p. 175).

In short, 'paradigm' for Kuhn primarily serves as an umbrella term for a number of related elements (having a Wittgensteinian 'family resemblance') that constitute the scientific undertaking itself. It indicates a shared and customary (accepted) cluster of components of science, namely: agreed-upon main theories (similar to Lakatos' 'core research programs') and its closely related or intertwined concepts, sub-concepts, methods, and solutions as a shared scientific tradition at a more general level than that of individual scientific results. Thus, Kuhn has in mind a conception of paradigm as a shared scientific tradition of theories (beliefs), methods and solutions.

By contrast, the meta-paradigmatic framework (Pietersen, 2000) used in the present paper has its origin in philosophical thought and identifies enduring and distinguishable epistemological-ontological positions. Kuhnian paradigms change (hence his model of 'normal science', 'crisis', 'revolution', and new 'normal science'), usually after long periods of time, as his analysis of the history of science attempted to show. This comes about as a result of changing beliefs and new solutions to previously intractable problems in a scientific community.

Kuhn's aim was to understand the nature of growth (or increase) in scientific knowledge and, although he retained the rational-logical characteristic of science, arrived at what is

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substantially a social-psychological explanation of knowledge development, as he admits himself (Kuhn, 1970, Introduction). The meta-paradigmatic framework introduced here, on the other hand, represents a fundamental perspective over and above scientific theories and models. Meta-paradigms underpin intra-scientific paradigms (and the theories, models and methods that form part of it) across the sciences and scholarly disciplines (including philosophy itself), and thus include but are not limited to any particular intra-disciplinary tradition or set of theories and convictions. Hence the term: *meta*-paradigm. Among other fields, the meta-paradigmatic framework has found application in theology (Pietersen, 2001b); jurisprudence (Pietersen, 2002a); aesthetics (Pietersen, 2002b), the psychoanalytic movement (Pietersen, 2003), and I/O psychology (Pietersen, 2001a).

It may help to better understand the nature of meta-paradigms by viewing the ordinary investigation of empirical phenomena resulting in project-specific, localized models, applications and results as generating '*first order knowledge*'. Kuhnian paradigms have relevance at the next, or '*second order' level of knowledge* and refer to more broadly held or overarching theories, models and explanations (such as scientific laws) within scientific disciplines. Meta-paradigms represent *third order explanations* in the manner of basic knowledge orientations that are twice removed from the direct knowledge of phenomena generated by the special sciences of nature (natural sciences), life (biological sciences) and humans (social or human sciences).

Some explanatory remarks regarding the meta-paradigmatic approach to be utilized in the present analysis is deemed necessary. Within the meta-theoretical framework (Figure 1) Plato and Aristotle appear as arch-exemplars of objectivist (rationalist) thought; Plato with his preference for visionary theorizing (the turning toward a distant, intangible, 'heaven' of Forms/Principles), and Aristotle the first scientist, who spent much of his life analysing the substances of nature (in a turning toward the particulars of animate and inanimate matter).

Following the Socratic-Platonic distinction between *episteme* (logical reasoning) and *doxa* (the 'truths' of opinion and custom), the sub-frames (types 3 and 4) below the horizontal middle line in Figure 1 can be seen to fit the type of thought patterns characteristic of subjectivist philosophers and thinkers (such as the Greek Sophists, Nietzsche, Kierkegaard) and, perhaps surprisingly, also of Plato as ideologist (see Popper, 1995).

Objectivist (rational-logical) thought (types 1 and 2) is primarily concerned with the question of *what this is*, whilst subjectivist thought (types 3 and 4) is primarily guided by the humanistic question of *how we should live*.

It should be noted that these combined epistemological-ontological distinctions are not to be reified as totally separate spheres. The meta-framework is intended to identify unique, but also dynamically inter-related, orientations or predispositions in human thought that keep repeating themselves in different combinations at different levels of analysis in various fields of endeavour. For each knowledge meta-paradigm a cluster of appropriate descriptors have been proposed (Figure 1).

Figure 1 shows the general framework and, following this model, Figure 2 provides (by way of illustrative application) a more or less self-explanatory description of four paradigm leaders (McGregor, Mayo, Argyris, Bennis) in I/O psychology (see Pietersen, 2001 for a detailed discussion).

Against this background the next section considers the nature of research in I/O psychology as a knowledge discipline. For this purpose publication trends in the *South African Journal of Industrial Psychology* (hereafter: SAJIP) over the past ten years, as well as previous local reviews are discussed. Given the focus on knowledge development in I/O psychology, the profession is largely (but not completely) excluded from consideration in the present analysis.

I/O Psychology research trends in South Africa

The contents of the SAJIP for the period 1994 to 2003 were subjected to scrutiny in order to determine the characteristics of local research in the discipline (see Figures 3 and 4).

Figure 3 contains the results (cumulative frequency percentages) of a basic descriptive analysis of SAJIP (1994 – 2003) articles for the following chosen categories: *origin of research* project in terms of theory, method, research subjects, researchers and literature referred to (local or non-local); the *primary nature of the research* (review, theoretical, methodological, applied-empirical or interventionist); the *design type* (quantitative or qualitative); the

TYPE II: OBJECTIVIST-EMPIRICIST	**TYPE I: OBJECTIVIST-EMPYREAN**
Q: What is this?	**Q: What is behind this?**
ARISTOTLE: ***SCIENTIFIC*** MODE OF THOUGHT (*Makers*)	PLATO: ***SPECULATIVE*** MODE OF THOUGHT (*Shapers*)
Emphasize reason (rationality)	Emphasize reason (rationality)
Impersonal	Impersonal
Systematic analytic	Theoretical/integrative
Microscopic focus	Macroscopic focus
Detailed *explanation*	Comprehensive *understanding*
Concerned with verifiable ideas	Concerned with possible ideas
Aim: to systematically analyse, order, and predict life/world	Aim: to penetrate the deepest essentials and mysteries of life/world.
TYPE III: SUBJECTIVIST-EMPIRICIST	**TYPE IV: SUBJECTIVIST-EMPYREAN**
Q: What's wrong/wonderful about this?	**Q: What ought to be done about this?**
NIETZSCHE: ***NARRATIVE*** MODE OF THOUGHT (*moaners*)	MARX: ***POLITICAL*** MODE OF THOUGHT (*movers*)
Emphasize values (humanism)	Emphasize values (humanism)
Personal-engaged	Communal-engaged
Experiential	Conceptual
Poetic-particular-critical	Ideological-universal-reformist
Being, solidarity	Becoming, development
Concerned with individuals (the particularized other)	Concerned with society (the generalized other)
Aim: to praise, eulogize, celebrate and tell inspiring stories OR to unmask, debunk, criticize and tell 'sad' stories	To change, renew and re-engineer life/world/society according to valued ideals

Figure 1: A meta-structure of knowledge (adapted from Pietersen, 2000)

MAYO (meta-type II)	**McGREGOR (meta-type I)**
ORGANISATIONAL SCIENTIST	**ORGANISATIONAL THEORIST**
Rationalist-Objectivist	Rationalist-Objectivist
Systematic, "pebble-picking"	Speculative, "boulder-building"
Microscopic/ empirical	Macroscopic/theoretical
Detailed explanation; establish facts/evidence	Comprehensive understanding; identify core ideas/principles
Aim: systematically analyse, explain and predict human behaviour in the workplace	Aim: penetrate and understand the essentials of human nature in the workplace
ARGYRIS (meta-type III)	**BENNIS (meta-type IV)**
ORGANISATIONAL COUNSELOR	**ORGANISATIONAL REFORMER**
Humanistic-Subjectivist	Humanistic-Subjectivist
Narrative-particular-clinical	Ideological-universal – political
Empathetic individual counselling	Organizational system development
Help this person	Persuade everybody
Concerned with feeling, trust and psychological well-being in the workplace	Concerned with promoting organisational well-being and leadership excellence
Appeals to empirically observed and interpreted individual behavioural content	Appeals to general maxims and the inspiring examples of great leaders and institutions
Aim: describe (unmask) and guide the psycho-dynamics of individual and interpersonal behaviour in organisations	Aim: re-engineer and renew the organisational system and management philosophy.

Figure 2: Meta-paradigm exemplars in I/O psychology (adapted from Pietersen, 2001a)

SAJIP 1994 – 2003 (percentages) N = 185 articles					
ORIGIN OF RESEARCH:	Local (mostly adapted)			Non-Local	
Topic	8			92	
Theory/model/question	72			28	
Method(s)	66			34	
Subjects	97			3	
Researcher(s)	97			3	
Literature (Primarily)	2			98	
PRIMARY NATURE OF RESEARCH:	Review 2	Theory 5	Method 15	Applied 75	Intervention 3
DESIGN:	Quantitative 88			Qualitative 12	
SUBJECT OCCUPATIONAL STATUS	Management 33	Professional 39		Non-Management 28	
SUBJECT GENDER	Male 76			Female 24	
SUBJECT DESIGNATION	Caucasian 79			Non-Caucasian 21	
RESEARCHER DESIGNATION	Caucasian 95			Non-Caucasian 5	
RESEARCHER AFFILIATION (first author)	Academic 97			Non-Academic 3	

Figure 3: SAJIP research trends 1994 – 2003

NOTES:
1. Publications considered: 224 items (SAJIP 1994 to 2003)
2. Publications retained for analysis: 185 (83%). Research projects using student samples or populations were excluded.
3. Availability: Volumes 28.3 (2002), 29.1 (2003) and 29.2 (2003) unavailable at the time of writing, resulting in the omission of an estimated 25 published items.
4. The information reported in the bottom half of Figure 3, referring to subject and researcher demographics, show majority trends. For example, most of the SAJIP articles studied used research samples drawing in varying proportions on both management and non-management, male and female populations. The results in Figure 3 do however reflect (by way of accumulated frequency counts), overall trends in the demographical characteristics for all the publications scrutinized. Thus, a figure of 76% for the male subject gender in Figure 3 signifies that in 76% of the articles perused (n=185) males constituted the clear majority in the reported research sample, and so on.

subject occupational status (management, non-management, professional); *research subject gender* (male or female); *research subject designation* (Caucasian or non-Caucasian), reseracher designation (Caucasion or non-Caucasion) and *researcher affiliation* (first author, academic or non-academic).

The analysis (Figure 3) shows, *inter alia*, that I/O psychology research articles (published in SAJIP for the period 1994 – 2003) are mostly:

- Adaptations (locally conducted) of non-local *topics* based on non-local *literature* (92% and 98% of articles, respectively);
- Applied-empirical (75%);
- Inclusive of male (76%) and Caucasian (79%) research subjects;
- Inclusive of managerial (33%) and professional (39%) employees;
- Authored by Caucasian researchers (95%), based at academic institutions (97%).

SCIENTIFIC (Type II) 97% of SAJIP articles	META-THEORETIC (Type I) 0% of SAJIP articles
NARRATIVE (Type III) 0% of SAJIP articles	INTERVENTIONIST (Type IV) 3% of SAJIP articles

Figure 4: I/O Psychology research meta-types (1994 – 2003)

Figure 4 shows the breakdown of the results according to meta-paradigm type, namely: the meta-theoretic (type I), scientific (type II), narrative-interpretive (type III) and interventionist (type IV). Almost all the SAJIP (1994 – 2003) articles, namely: 97%, are hypothesis testing empirical research in the standard or scientific (type II) paradigm. The remaining 3% report the empirical results of training evaluation projects in the interventionist (type IV) paradigm.

In addition, Table 1 provides a comparison of I/O psychology research trends in the SAJIP with data reported by Raubenheimer (1994), covering the previous twenty years. Taken together with the contents of Figures 3 and 4, it shows that studies in the so-called positivist-empiricist approach (scientific or type II mode) to knowledge have been prominent since the very beginning. This trend has, furthermore, significantly increased since 1994, with a rate of publication of empirical (largely hypothesis-testing) research that almost doubled in half the time it took during the first twenty years of existence of the SAJIP. Overall, three-quarters of research published in SAJIP over the past thirty years was empirical.

TABLE 1
COMPARISON OF SAJIP RESEARCH TRENDS (PERCENTAGES)

Description	1974 – 1993 (n = 223)	1994 – 2003 (n = 185)	1974 – 2003 (n = 408)
Theoretical	46%	7%	26%
Empirical	54%	93%	74%

Whereas SAJIP articles during the first twenty years (1974 – 1993) had a very substantial 'theoretical' focus (broadly viewed), this picture has since changed dramatically. From the point of view of I/O psychology as an applied science this growth in empirical (quantitative) research is impressive and something to take pride in by all concerned. It shows that I/O psychological research in the conventional mode (as well as the SAJIP, the flagship publication outlet, itself) has matured and is alive and well.

Having shown the positive side, it must now also be noted that the continuing restriction (whether as a result of personal factors, entrenched academic and disciplinary norms or mere circumstance) of our published research to only one (the standard Western) paradigm of knowledge development, is disappointing. It conjures up the image of the tennis-player who achieves fame mostly on the basis of one aspect of the game, namely his/her tremendously powerful serve (the rational-empiricist model). It begs the question: is the impressive and consistently big serve (hypothesis-testing, statistically sophisticated, empirical research) all that the game (knowledge of human beings in the workplace) is about?

Given the co-existence of different meta-paradigms and basic research approaches in a range of sciences and scholarly disciplines (other than I/O psychology locally), as was pointed out earlier, it is important to reconsider the future development of I/O psychology in the country. The time is ripe (even overdue) for 'soul-searching' in the I/O psychological community. This, incidentally, refers to the very same process that I/O psychologists regularly induce client systems and managers to engage in as a matter of professional practice.

Considered from the meta-theoretical perspective introduced in this paper, there is, therefore, cause for concern about the pronounced tendency to focus on one mode of knowledge generation to the virtual exclusion of research perspectives and strategies embedded in other meta-paradigms (types I, III and IV).

An inspection of past and present reviews of I/O psychology in South Africa confirms the above trend and shows:

- A preference for knowledge generation almost exclusively in the positivist-empiricist mode of Western science (Pietersen, 1985, 1986b)
- A lack of knowledge integration (Raubenheimer, 1978; Pietersen, 1986b; 1989; Watkins, 2001)
- A lack of meta-scientific (philosophical) grounding (Veldsman, 1982, 2001; Pietersen, 1985, 1986b, 1989)
- An excessive orientation toward the European and Western industrial/work population, and thus stopping short of a proper (second-stage) indigenisation of the discipline (Pietersen, 1986a; Moalusi, 2001)

There is also the negative impact on research of the ongoing imbalance between I/O psychology as science (knowledge development endeavour) and as profession (knowledge application endeavour). Figure 3 indicates, for example that the vast majority of SAJIP research publications are predominantly generated (or at a minimum supervised and/or co-authored) by a relatively small group of white, male academics.

The bias toward the professional role is understandable because of the way the discipline came into existence and developed its identity, but I/O psychology professionals (in this country at least, and with a few notable exceptions) do not seem to contribute much to knowledge development by way of published research. This trend also shows up in the contents of the recent special (review) edition of the SAJIP. With the exception of briefly tipping the hat to the need for philosophical underpinnings (Veldsman, 2001), to the need for scientific and research roles (Pienaar & Roodt, 2001), and for experimenting with non-Western management models and concepts (Moalusi, 2001), contributions to this edition are largely concerned with the serviceability of the discipline to management and organisations.

The need as well as possibilities for I/O psychology to expand its horizons as knowledge endeavour lag behind other concerns in the discipline. In this regard, the existence of a vast and important literature on applications of, for instance, the narrative-interpretive approach (type III paradigm) to the study and explanation of organisational behaviour is ignored in favour of prognostications about what managers and organisations will

next require from the I/O psychologist. In addition, ten years after the epoch-making social and political changes in the country took place, indigenisation in I/O psychology (beyond local adaptations of non-local topics, concepts and methodologies) is practically non-existent given the publication evidence (see Figure 3).

Recent reviewers of the discipline offer the following:

- Kriek (1996) wants I/O psychologists to make: "... influential contributions to the policy and formation of a new South Africa" (p. 7);
- Schreuder (2001) goes so far as to advise I/O psychologists to become general managers because: "Management is increasingly becoming a 'people's business', for which industrial psychologists have been pre-eminently trained" (p. 6);
- Watkins (2001) seems to be perplexed about the "... many different, and even conflicting paradigms ..." (p. 11) in the discipline, but in the end strongly advises I/O psychologists to develop: "... astute sensitivity to organisational needs and sound strategy formulation to integrate those needs with individual aspirations." (p. 12/13);
- Moalusi (2001), proposes that I/O psychology in South Africa: "...adopt an interdisciplinary approach; close the gap between theory and practice by creating partnerships with the public and private sectors, and engage in a critique of current management paradigms..." (p. 20);
- Renecle (2001) is upbeat about the continued role of I/O psychology as a discipline that provides principles of human behaviour for the work context, but pessimistic about its relevance as organised profession. He wants the discipline to be needs based and proposes an: "alignment with workplace organisations...and the marketing of the profession and its members in general" (p. 23);
- Pienaar & Roodt (2001) report empirical results (based on an admittedly very low questionnaire return) showing little change, except in the priorities, concerning the current range of mostly practical, professional roles and skills required for the future;
- Veldsman (2001) reaches the same conclusion as Pienaar & Roodt (2001) and details a number of equivalent roles and competencies. He wants the: "...schizophrenic divide [between I/O Psychology as science and as profession to]...be eradicated" (p37), and is also concerned about the name of the discipline (as is the present author).

In sum: there seems to be little if any recognition of the need to focus on aspects of knowledge and research in I/O psychology, other than the usual applied and practical concerns of the discipline.

The meta-theoretical (meta-type I) approach to knowledge in I/O psychology (South Africa)

The current and next sections briefly review (see Figure I) the *meta-theoretical* (meta-type I), and much better known *scientific* (meta-type II) approaches to knowledge in I/O psychology (South Africa). The paper concludes with an outline of the *narrative-interpretive* approach (meta-type III), as an additional source of perspectives, concepts and methods with which to enrich and expand the stock of knowledge in I/O psychology in South Africa.

Limitations of space led to the decision to exclude a focus on I/O psychology as professional discipline and, hence, proper consideration of the meta-type IV (interventionist) knowledge meta-paradigm.

Meta-theory, generally, concerns itself with fundamental or overall, speculative-theoretical views of knowledge which, typically, also involve issues that are addressed in the field of metaphysics. However, other branches and approaches in philosophy (such as philosophy of science, analytic philosophy, pragmatism, continental philosophy, meta-ethics and moral philosophy) also have relevance in considering the basic nature of knowledge in various scientific and scholarly disciplines.

With the exception of the work of Veldsman (earliest, 1982) and Pietersen (earliest, 1985) there has been no published (SAJIP) research in I/O psychology in South Africa at this level of knowledge development over the past twenty years. Pietersen's and Veldsman's work represent independent attempts to identify and describe meta-theoretical foundations that could plausibly account for and bring coherence to the wide and often conflicting variety of approaches, models, concepts and methodologies that constitute I/O psychology as knowledge discipline. Both authors (together with Raubenheimer, 1978) have in common the need for higher-level explanatory frameworks in the discipline to counter what is perceived to be its increasingly more specialized and fragmented content.

Needless to say, and despite the fact that I/O psychology is primarily an applied field, greater research attention could be directed at the investigation of basic presuppositions, or the philosophical foundations of I/O psychology as knowledge discipline. This is especially important in helping the I/O psychological community explore and inter-relate different conceptual and methodological paradigms for future research in the discipline. The paucity of research in this area is disappointing, even though it is realized that it is perhaps not everyone's favourite cup of tea.

The scientific (meta-type II) approach to knowledge in I/O psychology (South Africa)

This is currently still the dominant (if not almost exclusive) meta-approach to knowledge in I/O psychology. The presentation below is structured according to four levels that ordinarily reflect main foci for research projects in I/O psychology, namely: the theoretical, methodological, applied and interventionist levels.

Theoretical studies

Theoretical research in I/O psychology is an obvious focus of interest. Innovative theoretical integrations, in-depth and comprehensive analyses and comparisons of various theoretical approaches and model building, should be carried out in I/O psychology. The work of Raubenheimer (1978) comes to mind. Raubenheimer's general theory of human behaviour (embedded in a natural sciences approach and bolstered by the neo-Kantian cosmology of Herman Dooyeweerd) is still the only (SAJIP published) example of an encompassing theoretical framework earmarked for application in I/O psychology in South Africa.

Similar to meta-theoretical research, purely theoretical studies in I/O psychology are scarce, and may appeal more to the conceptually inclined researcher. Currently, however, I/O psychologists (even those who regularly publish) are as applied and pragmatically oriented as ever (see Figure 3 and the previous discussion).

Theory-building (as opposed to the theory-verification thrust of applied studies), aims at comprehensively organising, integrating and systematizing existing theory and research in chosen subject matter areas of I/O psychology.

Methodological studies

Attention is increasingly given to methodological research in I/O psychology in South Africa. Compared to the first twenty years of the SAJIP, there has been a noticeable upswing in published psychometric research since 1994, which, no doubt, also reflects the impact of recent labour legislation on psychological testing. This kind of research is concerned with the development, adaptation and/or validation of various behavioural research methods and techniques used by researchers.

Methodological studies describe and analyse the measurement

properties of various research and/or behaviour change methods and techniques, in order to add to our knowledge of its characteristics, assumptions, limitations and usefulness.

Applied studies
The vast majority of research endeavours in I/O psychology in South Africa (as confirmed by publication trends in the SAJIP) consists of applied, hypothesis testing empirical projects. The aim of this kind of research is theory-verification and it is mainly concerned with the scientific value of I/O psychological theory, models and concepts in explaining human behaviour in the workplace.

Interventionist studies
Almost no studies designed to scientifically assess the impact of different kinds of organisational interventions (whether techno-structural or human-processual, in Friedlander's terminology) are published in the SAJIP.

Whilst there may be good reasons for this phenomenon (such as the need to maintain client confidentiality; contractual stipulations, cost factors, a lack of interest and/or a lack of opportunity by practitioners/consultants), knowledge development in the discipline is severely curtailed when I/O psychology interventions are not scientifically evaluated and published. There should be much more research of this kind added to the stock of knowledge in the discipline, especially also for purposes of developing a more indigenous I/O psychology. I/O psychology professionals, who are in regular contact with work organisations and thus able to observe at first hand what goes on in our culturally diverse work population, are, arguably, in an ideal position to contribute to indigenous research in the discipline.

Lastly, it should be noted that research in I/O psychology always, in some degree, reflect all of the above levels. For instance, any reported study will, even if implicitly or in an under-emphasised manner, upon inspection prove to possess: meta-theoretical assumptions (e.g. adoption of a positivist or social constructionist paradigm); as well as theoretical, methodological, empirical and application (interventionist) components – normally in that order.

PROPOSED SOLUTION

The paper essentially argues that I/O psychology research could profitably engage in conceptual and empirical work that more evenly represents the four meta-paradigms of knowledge that were introduced. The proposed solution therefore is: a knowledge development endeavour in I/O psychology that, apart from the type II (scientific) mode that is currently de *rigeur*, is expanded to also include contributions to knowledge from other pathways of understanding people and organizations.

To stimulate exploration by I/O psychologists of alternative avenues of research, the following discussion provides a brief introduction to relevant literature and examples of recent publications in the management and organizational literature that falls within the scope of the type III (*narrative-interpretive*) genre.

As with the discussion of the scientific mode (type II) in the previous section, examples of narrative-interpretive publications will be presented that is consonant with the use of meta-theoretical, theoretical, methodological, empirical and interventionist levels of analysis. The main purpose is to introduce aspects of the type III (narrative-interpretive) paradigm of knowledge to I/O psychologists not already familiar with this particular approach and its potential for understanding work organizations. It should be noted that there is a substantial and conceptually and methodologically diverse range of scholarly work, research and writing in this area, which obviously cannot be included in the present paper.

Sketching the narrative-interpretive approach to work organisations (meta-type III)
First of all, an indication of noteworthy sources of literature on the narrative-interpretive approach to work organizations is provided in Figure 5. This is followed below by a brief sampler of recent work in this domain, suited to the different levels of analysis as indicated above.

LEVEL OF ANALYSIS	SOURCES
Meta-theoretical. *Descriptors*: Contextual, voluntarist, pragmatist, pluralist/relativist, anti-foundational, nominalist to qualified realist. *Epistemology*: truth as intersubjective agreement, warranted assertability, the meanings provided by interesting stories, metaphors and symbols; social constructionist. *Philosophical tradition*: existentialism-pragmatism, Nietzsche, James, Dewey, Rorty, Critical Theory, Habermas, Derrida, Foucault,	Rorty (1979), Berger & Luckmann (1966), Morgan (1980)
Theoretical: The general premise is that theories of organisation are linguistic (metaphoric) constructions, in contrast to the rational-empiricist – or objectivist – paradigm that takes organisations and their environments as structured and multi-faceted 'givens', entities, systems or realities external to the observer and scientist.	Morgan (1997), Mangham (ed) 1987), Grant & Oswick (1996), Tsoukas (1994), Reed & Hughes (eds) (1992), Weick (1995), Weick (1969), Mirvis (1980)
Methodological: Includes a wide range of interpretive methods (some already known and used by I/O psychologists and other organisational scientists) such as: stories, symbols, textual and conversational analyses, open-ended interviews, thematic content analysis, focus group analysis, phenomenological analyses, psychoanalysis, dramaturgical analysis, semiotics, discourse analysis.	Morgan (ed) (1983), Mangham (ed) (1987), Grant & Oswick (1996)
Empirical: Empirical studies using the narrative-linguistic-metaphor approach.	Pondy, Frost, Morgan,Dandridge (eds) (1983); Mangham (ed) (1987); Morgan (1988); Reed & Hughes (eds) (1992); Grant & Oswick (1996)
Interventionist: Examples of organisational interventions in the narrative/ linguistic tradition.	Morgan (1993), Mangham (ed) (1987)

Figure 5: A multi-level outline of narrative-interpretive (type III) literature

Meta-theoretical level
Boje, Oswick and Ford (2004) review nuances of the epistemological and ontological debate among organizational scholars working in the narrative-interpretive paradigm, and the implications of this debate for theoretical discourse about organizations. The article distinguishes, for instance, between: "Radical *ontological* constructivism, where reality is literally 'talked and 'texted' into existence, asserting that there is nothing outside discourse but more discourse ... and radical *epistemological* constructivism/relativism [which] restricts itself to nominalist forms of theory and explanation [and involves] multiple and relative discourses that sustain meaning and knowing through talk and text" (Boje *et al*, p572).

In his turn, Walter Nord (2004), a well-known and pioneering I/O psychologist, uses the opportunity in a recent article to bring the linguistic and social constructionist approach of the Neo-Pragmatist philosopher, Richard Rorty, to the attention of management and organizational scholars. He points to a number of themes in Rorty's work that he regards as important for management and organizational thought, namely: "(1) the poverty of most current modes of philosophy, (2) the disappearance of bright lines between disciplines, (3) the role of hope and the Deweyan experimental frame of mind, and (4) the pragmatist project of describing and re-describing self and community" (Nord, p128).

Theoretical level
At the theoretical level Palmer and Dunford (1996) discuss the link between reframing and organizational action. Reframing, which is a way of conceiving, analysing and responding to organizations through multiple metaphorical frames, is relevant to processes of organizational change in that it allows managers to create novel responses to ambiguous organizational situations. It: "... represents a voluntarist approach to understanding social action – that is, one in which it is up to individuals to change their circumstances and to achieve this through making new interpretations of organizational situations" (p12). They also discuss cognitive, linguistic, knowledge and power limits to framing.

Methodological level
Morgan & Dennehy (1997) focus on the potency of organizational story telling as a way of achieving understanding and insight into organizations, and specifically as a tool to enhance the manager's ability to create rich descriptions of organizational events and situations. They provide a rationale as well as sequential structure (with examples) for constructing organizational stories, namely: the 'setting' (the beginning circumstances), the 'build-up or "trouble is coming", 'crisis' or 'climax', 'learning', and 'new behaviour' or 'awareness' (p. 498).

Empirical level
El-Sawad (2005) provides a new understanding of career with an empirical investigation into, and identifying and coding of, various metaphors generated in unstructured interviews with twenty graduate level employees drawn from a range of jobs and levels in a large UK corporation. Dominant metaphors used by respondents relate to spatial, journey, horticultural and competition metaphors, as well as metaphors of 'imprisonment', 'military' 'school', 'Wild West' and 'nautical' (p23). The paper argues that career is better understood as a politicised process in which discipline and control are key elements.

Interventionist level
Based on his experiences as organizational change consultant, Robert Marshak (1996) provides a number of examples of organizational interventions using metaphorical analysis and techniques with management teams.

He distinguishes between six types of interventions, namely: recognizing, repudiating, reframing, replacing, releasing and re-integrating (p157). An example of reframing is given with reference to a management task team that had to decide whether to "fix" or "re-engineer" a machine. Initially the team worked on the implicitly shared metaphoric assumption that the organization was a machine that was somehow broken. The consultant then worked with the team to help reframe the underlying metaphor as one of "re-engineering". Marshak concludes by noting that: "The invitation to think in terms of designing a higher performance machine (re-engineering) rather than trying to repair an old outdated one (fixing) worked as different members of the task force began to see their assignment in a new way" (Marshak, p160).

DISCUSSION AND RECOMMENDATIONS

The above review of published research in the discipline (from the perspective of the meta-theoretical approach introduced in this paper), leads one to the conclusion that I/O psychology (South Africa) as knowledge discipline is faced with a dual imperative.

Firstly, in order to retain its identity and standing among the organisational sciences (locally and globally) it obviously must continue to adhere to the goals, principles, procedures and criteria that are the hallmarks of scientific research in the generally accepted, positivist-empiricist (meta-type II) tradition.

Secondly, whilst care should be taken to avoid losing ground on all that made it a successful and mature behavioural science in the South African context over the past four decades, the key message of the present analysis is that I/O psychological research must get out of its current groove of uncritically following only one meta-approach to knowledge (and with it, its subsidiary theories, models and methods).

It should also be regarded as a matter of importance for research in the discipline to become more sensitive to current and foreseen exigencies in South African society, and the South African workplace in particular, if it is to develop into a truly indigenous (contextual) and representative body of knowledge. It is believed that the narrative-interpretive (type III) paradigm, with its acknowledgement of the linguistic and metaphoric construction of human reality, is especially relevant for developing a grounded knowledge of organizational life that incorporates indigenous ways of understanding and sense-making. For example, this approach can fruitfully be applied to research on metaphors, stories and imagery used by organizational employees on African humanism (*Ubuntu*) in the workplace.

To the extent that I/O psychology embraces additional knowledge perspectives, theoretical frameworks, research strategies, methods and literatures beyond that which are currently in use (such as the ubiquitous self-administered questionnaire), and thus keep on renewing itself, it will continue to be and become even more relevant as an organisational science/discipline in South Africa.

In summary: As far as knowledge development goes, the present analysis shows that I/O psychology (South Africa) needs much more published research in the narrative-interpretive (meta-type III), philosophical (meta-type I), and (although not discussed) interventionist (meta-type IV) modes of understanding of human behaviour in the work and organisational context. This will require a much more deliberate and sustained effort in our research (as well as teaching – which is where it should begin) to include relevant perspectives, ideas, methods and solutions from other knowledge disciplines (such as philosophy, sociology,

anthropology and linguistics). In this way I/O psychology would also be enabled to more effectively respond to the call for broader-based, interdisciplinary, research.

Lastly, and with (hopefully inspiring) reference to I/O psychology exemplars (Figure 2), it can be stated that knowledge development in the discipline requires much more research in the archetypal mould of an Argyris (meta-type III), a McGregor (meta-type I), and a Bennis (meta-type IV). The Mayo research meta-type (type II) has done very well over the years, but it is not the only 'kid on the block' and needs to be supplemented by and provided with 'conversation from the other kids' (other meta-types).

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