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Maximising Evidence-Informed Change in Complex Policy Systems: Lessons from Africa and Asia

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Maximising Evidence-Informed Change in Complex Policy Systems: Lessons from Africa and Asia

ABSTRACT

The evidence-informed approach to policy decisions has huge potential for improving policy decisions, processes and outcomes, if policy decision makers can be persuaded to take more rational, evidence-informed decisions based on sound applied policy-related research findings and conclusions. This, however, is difficult to achieve in most policy contexts which are highly complex, and where policy decisions are traditionally influenced by the cumulative impact of a diverse number of considerations of which rational evidence of good or bad practices and of historically successful or failed interventions constitute only a small and sometimes even a negligible part.

The question that is addressed in this paper is how evidence-informed policy decisions can be maximized in complex policy environments. An analysis and assessment is made of the current knowledge on this topic, and the evidence synthesised and summarised for improving decisions on policy change in such environments.

KEY WORDS: Evidence-informed policy making, policy change, policy decision-making, complex policy systems, policy dynamics.

INTRODUCTION

This article starts off by summarising the complex nature and main drivers of public policy decisions in such policy environments. It then proceeds to summarise and assess the development and nature of the evidence-informed policy making approach (EIPM) and concludes with the identification of a number of strategies to maximise this preferred approach to policy decision-making.

NATURE OF PUBLIC POLICY SYSTEMS AND DECISIONS

Cairney (2015:5) emphasises that it is important to understand two interlinking dimensions of the policy process in order to fully understand how policy making occurs and what factors influence eventual policy decisions. The first is the internal psychology of policy making and the second is the complex external environmental context within which policy making occurs. All policy processes consist of a complex interplay between these two dimensions that create conditions of uncertainty and ambiguity that complicates eventual policy making decisions. The focus of analysis and assessment of this article will be to try to summarise what role evidence plays in the generally complex policy making process that occurs in a similarly complex environment.

For the purposes of this contribution, policy is conceptualised as *"a programme of action to give effect to specific goals and objectives aimed at changing (and preferably improving) a n existing unsatisfactory situation"* (Cloete 2009). This view of policy links a policy problem (eg poverty, crime, intolerance) to a preferred solution (less poverty, crime and religious or racial intolerance) by adopting and implementing an action plan to change or transform the problematical negative status quo into a better positive future situation (eg better education, training and job creation, more police and cameras on the streets or awareness and sensitization campaigns to improve religious and racial tolerance). Different policy projects and programmes consisting of more than one project, can be devised to attempt to achieve the strategic goals of the policy concerned (eg policy 'sermons' to emphasise the need for more tolerance, 'carrots' like funding multi-cultural facilities and events as inducements to promote such tolerance, and 'sticks' in the form of sanctions and penalties for hate speech and racist actions).

Public issues and policies to address those issues are generally not new issues and plans to address them. They normally have long histories (eg the protracted nature of poverty, crime, ethnic and religious conflicts or plain vandalism), and therefore have to be assessed against the background of these histories and past experiences of attempts to deal with them (eg how successful has job creation to reduce poverty proven to be in the past?).

The success or failure of policy change attempts is normally influenced by a range of different conditions and variables. States, regions and communities can be very different from one another and the context of each of these cases might differ significantly, resulting in totally different driving forces or conditions that impact in different ways on their respective communities or societies (eg a strongly ideological and authoritarian decision-making culture in Zimbabwe vs a strong democratic culture in South Africa). Most policy issues or problems do not have single, simple causes but are the manifestations of different contributing causes that frequently have a cumulative, negatively perceived impact on the status quo. For example, the causes of poverty on which numerous theses and books have been written and on which many different competing views still exist, mostly based on different ideological world views. There is therefore no general agreement on what the causes of poverty are and how to reduce or eradicate poverty if at all possible in principle to do it.

Policy-making systems are therefore generally not simple systems consisting of a few straightforward variables that are well-known and easy to identify and assess (eg upsurges in crime cannot always be reduced only by putting more police on the streets). They are generally complex systems with many variables that interact in non-linear patterns that are not always understood and are influenced not only by their sometimes puzzling internal interactions but also by unknown external influences (Cairney 2012; Geyer & Cairney 2015). Examples of such complex systems include the implosion of the Thai currency in 1998 caused a dramatic weakening of the South African currency that were not directly or indirectly linked to the Thai situation). This situation makes it very difficult if not sometimes impossible to fully understand and predict the relationships among the elements of a policy system and consequently also to try to achieve policy change because one does not always fully understand the causal linkages between policy issues, their causes and the ramifications of policy change interventions to try to improve the current unacceptable situation in future. For example what is poverty?, what causes it?, what should be done to reduce it?, and what are the ramifications of each potential strategy that is considered for this purpose?.

Overlapping typologies of a diverse range of drivers of change at different levels illustrate the potential complexity of the policy system very well. The degree of potential change or resistance against change is strengthened by the cumulative reinforcing impact of these different change drivers at the different change levels. The main variables that influence policy change decisions and actions for purposes of this article, are the following:

Individual, network, organisational and system change levels

Cairney (2015:6) conceives of the policy environment or context as an interlocking system consisting of multiple interactions among ideas and interests that people pursue, which result in specific support mobilisation activities and events to create networks and institutions through which they attempt to promote those ideas and interests by changing current conditions in society to give better effect to their goals. In order to achieve effective and durable systemic transformation, a series of specific reinforcing changes need to occur at different levels (Punton & Vogel 2016).

Firstly, change rarely occurs spontaneously without the intervention of single or small groups of *individuals* that mobilise support at the micro level among their direct followers for such change, either in civil society to put pressure on decision-makers to change, or in

governmental structures that manage policy-making and implementation. Individual change agents or champions therefore normally initiate social and policy change (eg the empowerment of women which was initiated by a number of strong female activists like Charmaine Greer in the USA, or President Thabo Mbeki of South Africa who initiated and institutionalised the representation of women in all governing structures in the post-Apartheid South African government). The motivations of these individual change leaders can be very diverse, as is summarised below in more detail.

In addition to the existence of individual champions of change, the second (reinforcing) requirement for policy change success is the development of *networks* of support for the change initiative at the meso level that expands the need for change and further mobilise support for change among more likeminded stakeholders. Examples of this include the 'policy contagion or spill-over effect' of the women's rights campaigns in different countries through globalisation and mass communication, supportive protests or strikes by trade unions and students for better working or studying conditions, or the supportive networks of other government leaders that mobilised around the Bush invasion of Iraq). These supportive policy change networks expand the scope of the envisaged change and the pressure on decision-makers to accept and adopt the desired changes).

The third level of change is the implementation and institutionalisation of policy change practices in societal, business or public organisations and agencies at the macro level. For example, the increasing pressure by many individuals and stakeholder groups to reduce smoking and legalise abortion has already led to successful behaviour and organisational changes and practices in many countries. These practices have created new attitudes towards undesired smoking practices and pregnancies and are increasingly accepted as the new social status quo in those countries and institutionalised in health policies.

If these individual, network and organisational changes are durable, they have the potential to consolidate a new culture of change across the society concerned. The fourth level of change is therefore the wider systemic level (Punton & Vogel 2016). The implementation of non-racial, human rights-based practices in terms of the post-Apartheid Constitution in South Africa and the gradual development of a democratic constitutional system in the country are indicators of this type of organisational and systemic policy consolidation and transformation.

Attitudinal and behavioural levels

From the above summary of different interacting and reinforcing levels of change, it is also clear that change can be analytically distinguished at the *attitudinal/cultural* level on the one hand, and at the *behavioural/practice* level on the other. Attitudes do not automatically translate into actions for various reasons that include a reluctance to exit personal comfort zones, risk avoidance decision styles, a lack of commitment, opposing interests, intimidation and more. Employees that are aware of corruption or mismanagement in an organisation are for example frequently hesitant to blow the whistle on such transgressions because of the factors mentioned above. Incentives to change are frequently needed in order to stimulate the transformation of new ideas into actions. The main types of incentives to change are summarised below.

Internally driven and externally driven processes or mechanisms

It is useful to use Cairney's (2015:3) distinction between the internal psychology and the external context of policy making. *Internally* driven change processes/ mechanisms consist inter alia out of own philosophical, ideological or religious conviction/ belief, emotional feelings, political, financial, cultural, social interests, while *externally* driven processes/ mechanisms are imposed by external forces or conditions, both at the attitudinal level and at behavioural level in individuals, networks, organisations and systems. Internally driven drivers of change can be reinforced by positive external drivers that create an enabling environment which can be an incentive to transform new ideas into actions (eg a personal commitment to blow the whistle on corruption can be facilitated if effective protection for such action can be guaranteed by the public policy and regulatory system). On the other hand, the absence of internal motivators and/or a negatively perceived prohibitive environment to act on one's knowledge, views, beliefs or feelings constitute important disincentives to act, (eg to blow the whistle on perceived corruption or nepotism). The potential for successful policy change can therefore be maximised if both strong internal motivations for change and an enabling environment to transform these ideas into practical actions therefore exist or can be created.

Positive change enablers and negative change barriers

It should be clear from the discussion so far that positive change enablers that promote change (eg incentives to change and act) and negative change constraints or barriers to change (eg sanctions or penalties) can exist at both individual, network, organisational and

system levels (Vogel & Punton 2016). These considerations can be internal or external as summarised above, and can have either a reinforcing or weakening effect on policy change ideas and actions at the different change levels (Oliver et al 2014). For example individuals who are motivated to try to persuade government to curb corruption but fear for their own career prospects if they push too hard for it, might be inclined to lose motivation and 'suffer in silence' because of an unfavourable working environment that disincentivises individual action as well as participation in networking activities to curb corruption and trying to improve organisational anti-corruption practices. This situation inevitably results in disincentives for the development and consolidation of a culture of anti-corruption in the policy system at large. This example again illustrates the complex nature of policy change that is seldom straightforward and simple, but depends on the existence and synchronisation of a number of interacting and reinforcing considerations in order to be successful. If these reinforcing mechanisms are not in place, the potential of policy change at the different change levels can be significantly weakened.

Policy change sermons, carrots and sticks

Different combinations of policy change instruments, approaches or strategies applied in each change intervention can also either reinforce or obstruct/delay a policy shift (Bemelmans-Videc, Rist & Vedung 2010). The most important of these different policy change approaches are firstly *moral sermons* (aimed at influencing an individual or organisation's mental or cultural attitude by persuading him/her/it to do the best, right thing and not a bad, wrong thing). For example a policy activist or decision maker who wants to persuade opponents of legalising marijuana to change their minds, can argue that it is an individual human right to decide what to smoke if anything, as is the case with a similarly if not more powerful drug, namely alcohol. It is therefore a moral choice.

A second (alternative or reinforcing) policy change approach is to focus not on persuading people to accept normative attitudinal change about the legalisation of marijuana, but to rather focus on a persuasive approach based on the *maximisation of the alleged benefits of legalisation, which constitutes the 'carrot' approach*. This approach creates inducements to change attitudes and behaviour voluntarily because of perceptions of potential future benefits that do not currently exist or might be bigger if change occurs at individual, network, organisational and/or systems levels.

The third alternative or reinforcing policy change approach is the so-called *'stick' approach that focuses on scaring tactics based on maximisation and enforcement of the costs of and penalties for non-compliance* with policy change prescriptions. From this perspective the policy change argument centres around a deterrence factor. It is the opposite of the carrot approach and maximises the negative results of a refusal to change at one or more of the social levels identified above.

Policy sermons, carrots and sticks operate at all policy change levels, and the most appropriate or suitable change instrument needs to be identified and applied in order to achieve the most favourable outcome.

Cognitive (rational), affective (emotional) and normative (value) levels

Different internal and external cognitive (rational), affective (emotional) and normative (value) drivers of change influence individual and organisational attitudinal and behavioural change decisions, as was already mentioned above (Kets de Vries & Balazs 1998, 1999). The main types, styles and implications of internal and external policy drivers that are relevant for purposes of this argument, are summarised in Table 1.

TABLE 1: DECISION MAKING: LEVELS AND VARIABLES

LEVELS	VARIABLES			
	DRIVERS	**ATTRIBUTES**	**CONSTRAINTS**	**STYLE / APPROACH**
Individual Personality / Psychology (internal)	**Cognitive Rationality**	**Costs Benefits Risks Optimising**	**Time Money People Information**	**Consultation Research, Logic Reflection Chance: Toss a coin**
	Affective Emotions Instincts	**Ambition Power Fear Greed Love Hatred Insecurity Approval Conflict avoidance**	**Irrationality Unpredictability Groupthink**	**Instinctive, gut reaction**
	Normative Ideology Religion Philosophy	**State intervention Individual choice Nationalism Confucianism Islam**	**Dogmatism Purism Groupthink**	**Ideological determinism Autocratic**

	Combination	Combination	Combination	satisficing disjointed incrementalism
Contextual/ Organisational Environment (external)	**Organisational objectives**	**Business as usual Crisis perception**	**Groupthink**	**Default Garbage can Laissez faire Democratic voting Consensus seeking**

(Source: Author)

The above alternative competing styles of policy decisions constitute different decision approaches and considerations that are factored into a final decision. Top-down, emotional or ideological decisions are more instinctive, spontaneous, gut-feeling decisions that are frequently easier to make but which are not always reached in the most objective and rational manner. Rational decisions on the other hand are in most cases the results of good research and preparation in the form of objective comparisons and assessments of the advantages, disadvantages and risks of each possible course of action, and a choice of direction which would maximise benefits and minimise costs. This approach, however, requires the availability of good quality comparative evidence to support the eventual decision.

A largely objective rational approach to policy decisions is widely regarded as the optimal approach to policy decision-making, because it has the best potential to result in impartial, fair and equitable outcomes for all stakeholders. However, it is very difficult to achieve as a result of the significant explicit or subconscious impacts that subjective emotional and normative drivers of human behaviour have on human decisions and actions in general.

Affective (emotional) drivers of policy decision and actions include subjective feelings or perceptions of racism, fear, greed, hate, loyalty, ambition, power, family, friends, interests, needs etc (Lazarus 1991, Weeden & Kurzban 2017:86). N*ormative drivers* include subjective value-laden preferences for or objections to specific religious or cultural beliefs or practices, free market, socialist, liberal, conservative, nationalist, colonialist, feminist, environmentalist or other philosophical or ideological preferences or prejudices. *Cognitive* (r*ational) drivers* include the deliberate consideration of priorities like relatively objective and pragmatically determined feasibility, affordability and sustainability of action plans, efficient, flexible, processes and effective results to achieve predetermined goals that provide optimal benefits, minimising as far as is possible emotional or value-laden drivers and the negative ‘costs’ associated with the final decision. Cognitive or rational drivers of

policy decisions tend to be based on good evidence of successful or unsuccessful policy practices.

Emotional or normative policy drivers can skew policy decisions based on those feelings or attitudes in favour of beneficiaries or stakeholders that may not justify such benefits on 'objective merit', unless it is the explicit purpose of the policy decision to have that beneficial or detrimental impact. 'Objective merit' is in principle itself a contested concept, because of the normative or emotional lenses through which decision-makers normally subjectively assess the nature of such merit (Head 2015:472). Totally objective decisions are as a result virtually impossible, but a rational approach to decision-making necessitates the explicit consideration of as many as possible influencing factors and options open to decision-makers, in order to compare the impact of these competing variables and to prioritise which of these drivers would be the main factors influencing the final decision. From this perspective, policy decision-making is therefore normally seen as a multi-criteria decision process where the main competing influences must be identified and more rational, evidence-informed drivers of the final policy decision should be prioritised over more instinctive and/or judgemental drivers of policy decisions.

THE COMPLEXITY OF POLICY DECISION MAKING IN PRACTICE

The complex interaction of some of the most important variables that influence policy change that were highlighted above, is visually reflected in table 2 by way of a case study of policy decision making in South Africa. This table illustrates the complexity of the policy change process and especially the fact that each policy system operates in a relatively unique policy environment and is influenced by a very specific set of variables that can differ significantly from case to case. It is therefore not easy to identify single simple generic recipes for policy change that might be applicable in all contexts. The specific context of each national policy system (eg in Rwanda, Botswana, South Africa, Singapore or Malaysia) is characterised by an interaction of influencing factors that is relatively unique to that specific system and its context.

The specific cognitive, affective and normative attitudes and behaviour drivers of individual policy decision makers might determine policy decision outcomes: Eg a cabinet minister's personal dislike of a capitalist, free market orientated policy change advocate or champion, linked to a strong normative belief in indigenous empowerment and the possibility to get a

financial reward (bribe/kick-back), might preclude the promotion or adoption by such an individual of rational evidence that affirmative action strategies to distribute wealth might not always be the correct strategies. These non-rational considerations can therefore potentially strongly influence which factors they regard as strategic considerations for policy decisions and can in principle make rational evidence about what works the best for whom, irrelevant. On the other hand, a pragmatic minister who has a strong sense of self-efficacy and relies on professional, specialist advisors about what current knowledge indicates would be the best course of action, and who is not very ideological or have other emotional insecurities, would probably take a more rational, evidence-informed decision about what the best next steps should be. The individual decision-maker's personality traits, preferences and style, including his/her risk aversion or risk seeking and reactive or pre-emptive approaches, can therefore significantly influence the process and outcome of the final policy decision.

The influence of supportive or opposing networks of stakeholders for a specific policy issue can also influence the final policy decision outcome, but these networks are themselves subject to the affective, normative and cognitive influence drivers summarised above. The importance of policy advocacy networks is that they reinforce either a positive support of or a negative opposition to a suggested course of action. Eg, supportive policy advocacy groups can mobilise authoritative support for a policy decision like the UK anti-Brexit alliance including the IMF and other stakeholders' support for Britain remaining in the EU, or conversely the pro-Brexit lobbies consisting of conservative interest groups unhappy with the current dependence of the UK on EU policies and legislation in the areas of immigration. The popular legitimacy of these groups/networks and the scope and intensity of their support among citizens or other stakeholders will inevitably influence the final policy decision. The bases of perceptions of legitimacy can be affective, normative or cognitive, depending on the attitudes of the majority of the members of these networks/communities or interest groups.

The perceptions of institutional or organisational stakeholders or decision makers might not be supported by evidence, but they are as real as facts or figures, because decisions are taken on the basis of such perceptions. An illustration of this is the Chilcot Report (2016) on the British Government's involvement in the 2003 American-British invasion into Iraq: The BBC reported that the report explicitly concluded that "*Tony Blair overstated the*

threat posed by Saddam Hussein, sent ill-prepared troops into battle and had 'wholly inadequate' plans for the aftermath".

Policy decision-making is inherently normative, and especially political in nature, and it is impossible to depoliticise politics. Therefore it is naïve to think and demand that policy making should be fully based on scientific evidence. What is 'scientific' evidence of the most successful economic growth strategies from a capitalistic perspective can be effectively countered by 'scientific' evidence from a socialist perspective as Piketty (2014) recently illustrated.

Another case in point is the enforcement by the IMF and the World Bank of strict Structural Adjustment Programmes (SAPs) on governments of poor developing countries with huge state debt, high inflation levels and unemployment in order to get access to development assistance. SAPs require inter alia from governments to spend less and stay within their financial abilities through the termination of subsidies of food and welfare payments. This economic policy strategy is an effective 'proven' good principle and practice from a liberal macro-economic perspective to stimulate economic growth. However, it has in the past led to a serious deterioration in many developing countries, resulting in an increase in poverty and misery for citizens because these alleged economic 'turnaround' strategies have been implemented clinically without taking into account the specific national contexts that frequently for various reasons do not contain the ingredients for more job creation in the short term (Adepoju 1993). It therefore has in practice proven to have very negative and perverse contra-productive effects on the populations and countries concerned. A more pragmatic consequence of the failure of this policy programme was its adaptation to "SAPs with a Human Face", resulting in different programmes and longer time frames for change in order to alleviate more suffering in those countries (Jolly 1991). Few of the country recipients of international aid from these agencies, have, however, benefitted significantly from these conditions. The evidence base for this strategy is therefore not as solid as its proponents alleged, and the normative bias inherent in it, is clear.

The demands of the IMF and the European development finance agencies for structural economic change to the Greek economy as a precondition to give them more development assistance, compared to the current Greek government's response, is another example of the lack of precision, accuracy and validity of competing evidence bases. The failure of SAPs in very poor countries that has been summarised above, is equalled by the failure of

the Greek government's attempts to follow the opposite economic growth strategy by refusing to cut state spending to save and by trying to grow out of its financial woes by spending more (Keynes). This has resulted in stabilising the economy in the short term, but slower than expected growth trends have in fact aggravated the Greek financial dilemma in the medium to long term by reducing savings even more and by expanding the international debt of that government, making it even more difficult to repay the debt and to grow out of it. It is therefore clear that from a normative or emotional perspective, what is the core of the problem for one is the core of the solution for someone else.

The cumulative impact of all of the above potential drivers of a policy change decision, and the determining role that emotional and ideological factors play in decision-making despite the overwhelming evidence to the contrary, is illustrated in Table 2. It breaks down the tragically failed decision by the Mbeki Cabinet in South Africa not to provide anti-retroviral (ARV) medication to reduce/stop the spread of HIV-AIDS and to treat such patients rather with more nutritious food. This allegedly lead to the deaths of hundreds of thousands of HIV-AIDS sufferers and increased the spread of the infection (Furman 2016, Bozeley 2008). The denialist approach eventually failed as a result of the overwhelming opposition against it (Gray & McIntyre 2016).

The table illustrates the reinforcement required for democratic policy change at different levels in society, and indicate how specific internal (psychological) and external (contextual or environmental) enablers and constraints might strengthen or weaken this cumulative impact on policy failure or change. The table also summarises the relatively complicated elements of policy change in a small public sector health programme. The level of complexity of more sectorally integrated and comprehensive longer term programmes like poverty alleviation, community empowerment and clean governance, is much bigger.

By now it should be clear that cognitive or rational approaches to policy making have the best potential for success, only if they take into consideration the impact of emotional and ideological factors on the feasibility of programmes, and attempt to achieve an optimal balance between desired benefits and inevitable costs to be incurred in order to achieve the desired benefits though policy change.

Table 2: Complexity of Policy Change Drivers: Cumulative Impact of the Mbeki ARV decision to deal with HIV/AIDS in SA

Change Level	Attitudinal and Action Drivers	Change Driver Nature	Internal & External Change Drivers: Enablers & Barriers		
			Sermons	**Carrots**	**Sticks**
Individual Level	**Mental Attitude (eg willingness/ commitment to support/ oppose change)**	**Cognitive**	Accepted minority dissident 'evidence' used for decision/ Majority views opposing it were rejected	'Accepted dissident evidence' that healthy nutrition works/ Insufficient mainstream evidence that it works reduced credibility of dissident 'evidence'	Accepted that contravention of policy is not allowed/ Massive Cognitive resistance against decision built up
		Affective	Emotions were generated about ARVs as poison/ Majority did not accept it	Contrasted 'poisonous' chemicals with nutritious food/ Majority scepticism	Fear: Providing ARVs are penalised/ Emotional resistance against decision built up despite fear of penalties
		Normative	Preached minority belief that ARVs are ineffective & nutrition better/ Majority believed otherwise	Belief that inducements will persuade/ Inducements however didn't persuade.	Govt could strictly enforce its policies/ Argument proved ineffective. Majority did not believe so.
	Behavioural practice (eg proactive/reactive champion, leader, follower)	**Cognitive**	Champions recruited & instructed to implement policy/ Few champions could be found though	Lower price of healthy nutritious products/ It did not sell for this purpose	Recruited monitoring and enforcement teams/ They were ineffective
		Affective	Used officials who are strongly emotionally committed/ Few existed	Involved staff who emotionally believe in it/ Few did	Scare mongering implemented/ It did not work
		Normative	Explained & tried to persuade it is the right thing to do & must be done/ Few believed it	Tried persuasion to accept policy/It did not work	Enforcement attempted. Resistance too strong because persuasion failed.
Network Level	**Network culture (eg apathetic, passive, active)**	**Cognitive**	Network development around minority dissident views attempted. They were discredited by majority networks cognitively in favour of ARVs who had better evidence & support in the end.	Minority dissident networks promoted strongly 'evidence' that healthy nutrition works while majority networks promoted their views as intensely and more successfully.	Attempts to promote the idea to penalise state hospitals who provided ARVs failed right from the start. Majority networks in favour of ARVs requested significant funding for it. This undermined the minority dissident experiment.
		Affective	Mostly cognitive networks opposed to ARVs with those in favour also strongly emotional (eg the TAC).	Minority dissident supporters on poisonous ARVs were nearly as intense as emotional majority support for ARVs who won in the end.	Emotional dissident network arguments about bad ARVs and good garlic, lemons and beetroot failed. Emotional resistance against dissident emotional arguments were more successful.
		Normative	Minority dissident networks were as fundamental believers as majority networks in favour of ARVs.	Minority dissident activists believed as fundamentally it is the right thing as the majority activists believed in proven science as the only way. The majority in favour of ARVs won.	Minority dissident activists believed as fundamentally healthy nutrition should be implemented with education as the majority activists believed in distributing the ARVs.The majority in favour of ARVs won.
	Network practice (eg proactive/reactive champion, leader, follower)	**Cognitive**	Small dissident networks recruited but they were ineffectual, too illegitimate and lacking credibility. The majority ARV supportive networks were much more active and effective	Dissident-backed govt funds for healthy nutrition as a substitute was totally insufficient. Majority networks in favour of ARVs obtained significant funding for it. This undermined the minority dissident experiment.	Dissident-backed govt implementation plans as only options failed. Majority networks in favour of ARVs obtained significant funding for it. This undermined the minority dissident experiment.
		Affective	Emotional dissident network implementation about bad ARVs and good garlic, lemons and beetroot failed. Emotional resistance against dissident emotional arguments received massive support.	Emotional dissident network implementation about bad ARVs and good garlic, lemons and beetroot failed. Emotional resistance against dissident emotional arguments received massive support.	Emotional dissident network implementation about bad ARVs and good garlic, lemons and beetroot failed. Emotional resistance against dissident emotional arguments received massive support.
		Normative	Minority dissident activists could not lobby the wider community as effectively as they could the President. The majority networks in favour of the ARVs were much more successful	Minority dissident activists believed as fundamentally it is the right thing as the majority activists believed in proven science as the only way. The majority in favour of ARVs won.	Minority dissident activists believed as fundamentally it is the right thing to enforce as the majority activists believed in proven science to be enforced as the only way. The majority in favour of ARVs won.

Organisational & System Level	**Organisational culture (eg apathetic, passive, active)**	**Cognitive**	Govt agencies accepted the dissident refusal of ARVs reluctantly and under protest in many cases. Pro ARV lobbying were well-received. The prevailing organisational culture mostly in favour of ARVs remained in place	The availability of ARVs from non-governmental agencies and the deliberate flouting by many provincial and local medical networks and facilities of the govt's refusal to provide ARVs, created a general incentive to ignore or override govt restrictions on ARV provision.	The govt's enforcement programmes were totally ineffectual.
		Affective	Emotional arguments in favour of ARVs reinforced the rational arguments in govt agencies because many officials had HIV-AIDS positive relative or were suffering from that condition themselves.	The option to sidestep govt restrictions brought about emotional gratification and satisfaction to concerned stakeholders.	Govt healthy nutrition programmes were delegitimised and lacked credibility in the context of the emotional fervour and massive support for ARV provision
		Normative	The ideological pressure of the majority supporting mainstream scientific evidence was dominant	This was reinforced by the views of intellectual and network elites and champions that this is the right thing to do.	Changing govt policy on ARVs were increasingly seen as the right thing to do.
	Organisational practice (eg proactive/reactive champion, leader, follower)	**Cognitive**	Zuma succeeded Mbeki in 2009 and immediately dropped the anti ARV stance and changed the govt's policy to ARVs as the core instrument to counter HIV-AIDS together with education to promote safer lifestyles.	Cognitively ARVs were now seen and implemented by cabinet as the best policy instrument to try to counter the epidemic, based on overwhelming evidence in support of it. Denialists were side-lined.	Enforcement was barely necessary, as a result of the general support for and acceptance of the new policy. Legislation to regulate it in implementation was, however, adopted.
		Affective	Zuma is no denialist and this facilitated the reversal in policy	The policy reversal to adopt ARVs brought huge emotional relief and satisfaction to most people.	The new policy has general emotional support from the public, maximising the sustainability of its outcomes.
		Normative	Zuma believes ARVs and education are the right approaches. The overwhelming criticism of Mbeki's denialist stance and support for ARVS locally and internationally caused the implosion of the Mbeki policy and its replacement with the majority views to use ARVs.	The policy reversal was also clearly more in line with current beliefs locally and internationally and was generally welcomed.	The policy reversal was also clearly more in line with current beliefs locally and internationally and was generally welcomed.

(Source: Author)

COMPLEXITY OF THE EVIDENCE-INFORMED POLICY-MAKING (EIPM) APPROACH

Progress in social science research during the middle of the 20th century created confidence that new knowledge might be used to improve social problems. Public policy research in the 20th century was therefore characterised by a move away from the *"sterile academic parlour games"* of positivism and behaviourism, to become problem and solution oriented, focussing on the *"real world"* (Ascher 1986:370). The concept 'policy sciences' can be traced back to Harold D. Lasswell (2003):

> "*Over several decades, Lasswell and his collaborators…reviewed the intellectual tools needed to support problem-oriented, contextual, and multi-method inquiry in the service of human dignity for all. In response to the requirements of practice, and with the waning of positivism in the natural and social sciences, other parts of the policy movement are gradually converging on the problem-oriented, contextual, and multi-method outlook of the policy sciences"* (Brunner 1997:191, Mouton et al 2014).

The current evidence-informed policy making (EIPM) approach comprises a process of systematic, rigorous data gathering to make more informed value judgements than those just based on unproven subjective attitudes and opinions (Mathison 2005:184, Mouton et al 2014). It is *"a more rigorous approach that gathers, critically appraises, and uses high-quality research evidence to inform policy-making and professional practice"* (Gray in Davies et al 2006:175), while "*(e)vidence-based policy helps people make well informed decisions about policies, programmes and projects by putting the best available evidence from research at the heart of policy development and implementation"* (Davies 2008:3, Mouton et al 2014). The basic assumption underlying EIPM is therefore that of a rational approach to decision-making instead of emotional or ideological approaches to policy decisions (Segone 2008).

Segone (2008:27) *"distinguishes **evidence-based** policy practices from what he calls traditional **opinion-based** policy practices, which relies heavily on either the selective use of evidence (e.g. on single studies irrespective of quality) or on the untested views of individuals or groups, often inspired by ideological standpoints, prejudices, or speculative conjecture"* (Cloete 2009). The **evidence-based** approach to policy decisions can therefore be conceptualised as *"an approach to policy analysis and management that helps people make well informed decisions about policies, programmes and projects by*

putting the best available evidence at the heart of policy development and implementation" (Cloete 2009, quoting Segone 2008: 27. See also Davies et al 2000, Boaz and Nutley 2016:376). Evidence here means the best available objective qualitative facts and quantitative numbers to support the validity and appropriateness of a policy decision (see also Cairney 2015:3), and not just subjective opinions that might be influenced by a range of emotional and value-laden perceptions, beliefs and views and cannot be backed up by systematic, scientifically rigorous evidence.

This approach implies that every policy decision has to be based on good quality evidence to support such a decision (Shaxon 2016). This approach to policy decisions seems ideal in theory, but is not always practical because it assumes that evidence is available or can be obtained, which is not always the case (Shergold 2016). It also entails a time, resource and effort intensive process to find or generate the evidence required where it is not readily available. It is therefore more practical to rather follow an *evidence-influenced or evidence-informed policy practice* on the other hand that accept that policy decisions need to be influenced or informed as far as possible by good quality evidence of what works best for whom under what conditions, but that it is for various reasons unrealistic to expect this evidence to always lead to fully objective, rational policy decisions (the so-called *utilization* problem. See Bamberger 2008:120, Cloete 2009, Segone 2008:27, Head 2015:247). This is the current globally emerging approach to policy decision-making.

The evidence-informed approach is further based on the assumption that proven facts, figures, knowledge and experience provide a more rational basis for decision-making (INASPa 2016). This implies as much as possible accurate and valid factual evidence including historical trends resulting in conclusions about what has worked for whom under what conditions (Rigterink & Schomerus 2016). From this perspective, policy decisions therefore have to be ideally preceded by comparative research to establish and consider the current best knowledge base on the topic concerned, before a decision is taken on what to do and how to do it. Punton (2016) has summarised the main literature in this regard well.

The assumption is that this rationally considered approach will provide a potentially more successful policy outcome than policy decisions primarily based on emotionally instinctive or ideologically value-laden considerations. In practice, however, exponents of EIPM frequently ignore the subconscious influence or deliberate impact of ideological or

emotional change attitudinal and/or behavioural drivers behind policy decisions. Examples in point include the policy decision by the Mugabe regime in Zimbabwe to expropriate commercial farms from white farmers without compensation that is generally regarded as the main cause of the collapse of the rural economy in that country, or the decision by the Mbeki regime in South Africa (summarised in Table 2), not to provide anti-retroviral medicine for HIV-AIDS reduction, which has allegedly caused the deaths of many patients that could have been saved. Neither of these policy decisions was allegedly based on the best available evidence, but rather on ideological or other biases. This illustrates that the existence and availability of factual, policy-relevant research evidence does not necessarily and automatically lead to more rational policy decisions informed by this evidence. EIPM therefore cannot be regarded as a pure technical analysis and assessment, but should allow for contextual and individual diversity that also factors in the different contexts, stakeholders, decision-makers and possible non-rational considerations that might have a significant influence on the final decision (Cairney 2015:3).

Despite this internal and external complexity of the policy making process and environment at different social levels, it is generally accepted that the theory behind EIPM is sound (Parkhurst 2017). This implies that the potential for better policies can be maximised if EIPM can be achieved in practice, and if the influence of subjective ideological and emotional considerations in the policy making process can be effectively minimised. The policy making process is, however, largely a subjective, political process where normative and emotional drivers of decisions compete with rational drivers and evidence, as the South African case study in Table 2 has illustrated.

According to Davies (2008:6) *"(e)vidence-based government means integrating experience, expertise and judgement etc. with the best available external evidence from systematic research"*. One can identify different types of 'evidence'. The best quality evidence is *scientific evidence* that is generated through a rigorous application of the scientific method. Experimental or quasi-experimental Randomised Control Trials (RCTs) are examples of such high quality evidence (Mouton 2014). Scientific evidence, however, is difficult to obtain, expensive, does not always produce findings from which clear-cut conclusions can be drawn, and is not always presented in a good, user-friendly format for policy making purposes. Ideally, policy making evidence constitutes any information that seems reasonable and is communicated clearly, in good time, scientific, neutral, proven, theoretical research information (Davies 2008:19, Mouton et al 2014). In policy practice,

though, the objective, neutral, proven, scientific nature of the evidence that is normally used for policy purposes, can be very weak. Policy decision makers also generally select 'evidence' that they like, trust and which support their preferred strategies. It is naïve to think one can easily persuade policy makers to accept high quality objective evidence that do not support their political strategies (Cairney 2015:), because evidence is normally viewed and assessed through normative and emotional lenses, as the case study of Mbeki's ARV policy in Table 2 illustrated. Cairney concludes that:

> *"..(p)olicymaking is often about the dominance of one interpretation of the world. This dominance often takes time to overcome, suggesting that it is unusual for new evidence to have a direct, immediate and profound impact on the actions of policymakers. Indeed, some of the evidence that now informs policies – and which we now take for granted – has taken decades to be accepted within government…In this context, a simple appeal for the government to do something with 'the evidence' is naïve"* (Cairney (2015:7).

Rational objectivity, openness to different viewpoints and pragmatism are advanced decision-making skills and styles that not all decision-makers have or are willing to apply. In practice, therefore a policy decision is always the result of a mixture of normative or emotional preferences or prejudices and rational thoughts that constitutes an acceptable compromise result to the final decision maker(s) involved. The 'evidence' on which the eventual decision is based is in many cases much less rigorous that is required by the scientific method. This is what Segone defines as 'opinion-based' evidence.

Segone attributes the emergent shift from opinion-based to evidence-influenced approaches to a movement towards more transparent governance and better technical capacity to produce quality, trustworthy evidence that can inform subsequent policy making processes (Segone 2009:18). An interesting illustration of this is the latest research results on the causes of desertification in Africa that concluded that the traditional causes of desertification like over grazing, poverty, etc are just the symptoms of another problem which is weak or bad governance of such areas, and that improved governance might be a more effective strategy than other traditional ones (Magrath 2016).

The new emerging evidence-informed policy making paradigm also has its roots in the recent emergence of the digital information society that made it for the first time possible to

compile and report on conclusions of analyses and assessments of big electronic datasets in relatively short timeframes and in a relatively user-friendly manner (see Cloete 2003, Cairney 2015:13, Head 2015:472). Over the last four decades, this approach to public policy decision-making has started to mature as increasingly powerful electronic systems and networks made it possible to monitor activities and capture, analyse and assess big datasets and information that are in many cases automatically electronically tabulated, processed and reported in formats that make the use of such information much easier than was the case before the digital revolution (Cloete & Needham 2004).

Boaz and Nutley (2016:385) identifies four different uses of evidence: directly instrumental for policy-making, conceptual, persuasion for support mobilisation and general wider influence on thinking.

Another constraint on the success of EIPM is that the capacity to follow this approach is frequently absent on government agencies who do not have the resources, skills and experience to collect the evidence, assess it and apply it in a coherent manner in policy processes (Newman, Cherney & Head 2015). Against this background the purpose of the evidence-informed policy making approach is firstly to strengthen the scientific nature of evidence used for policy purposes (eg Vogel & Punton 2016; Langer, Tripney & Gough 2016, INASPb 2016), and secondly to persuade policy makers to base their policies and strategies on the lessons learnt from this rigorous evidence. As has been summarised above, this is not an easy task. It is in most cases a long term potential impact that is not guaranteed and that depends on a number of intervening variables like new policy makers, new policy problems or crises, new policy priorities, new technologies or solutions, etc (Magrath 2016). The process of evidence-informed policymaking lobbying is to first to create effective EIPM capacity where it does not exist, develop the most rigorous evidence, package this evidence in the most effective and user-friendly formats, apply it to proposals for improved policies and expose individuals, communities, stakeholders, beneficiaries, networks and agencies that can influence better evidence-informed policy results to these possibilities through a reinforcing combination of general awareness creation, training, mentoring and technical implementation and evaluation assistance and support (Vogel & Punton 2016 and Segone 2009:21-22).

THE DYNAMICS OF CHANGE IN COMPLEX SYSTEMS THROUGH EVIDENCE-INFORMED POLICY DECISIONS

An increasingly popular and useful tool of EIPM is the development of the theory of change (ToC) underlying specific policy interventions. The ToC explains the logical causal linkages between the existing policy problem, the policy intervention to address the problem and the outcomes of the intervention which are supposed to result in an improvement or resolution of the policy problem (Cloete & Auriacombe 2014; Taplin, Clark, Collins & Colby 2013, Keystone 2014:18, Stachowiak 2013:2, Stein & Valters 2012:3). The ToC is normally based on a programme logic model that identifies the policy issue or problem concerned, the resource inputs aimed at changing that problem through specific activities that result in concrete deliverable outputs that have short, medium and long term transformative consequences. The EIPM ToC model assumes that good quality evidence can be obtained to confirm causal linkages between the policy problem, the targeted improvement **I**ntervention in its specific **C**ontext, the change **M**echanisms that achieved the **O**utcomes concerned (ICMO) (Vogel & Punton 2016).

Table 3 comprises a summary of the ToC underlying the main EIPM ICMOs that could lead to policy systems change. It uses a DFID programme of EIPM capacity-building interventions as a case study, to illustrate how the cumulative impact of different capacity-building interventions at different levels (individual, network and organisational) might cause or contribute to changes in a policy system (DFID 2016, Punton 2016 & Vogel & Punton 2016, Boaz & Nutley 2016:383). The programme aims at developing or improving EIPM knowledge, skills and the application of those skills in public policy making processes in African and Asian countries in order to improve the quality of those processes and of the policy decisions emanating from them. These goals are pursued in different separate country programmes through different combinations of EIPM capacity-building interventions: awareness creation, formal education and training, debates and dialogues among key stakeholders in development programmes, mentoring and application of EIPM knowledge and skills through supervised pilot projects and continued technical support for and assistance with EIPM projects in government agencies.

The iterative nature of policy change is an important attribute of this process. Change is normally started through attitudinal and behavioural changes at individual level and then cascades wider through communities, networks and organisations until a critical mass of support is achieved for the establishment of a new policy culture or value set that consolidates itself until challenged again by another wave of changes up the change chain (Cloete and De Coning 2011:).

Table 3: Cumulative impact of the EIPM Change Flow Model

Change level	Intervention Types (I)	Context Enablers /Barriers (C)	Mechanism Type (M)	Outcome Result (O)
Individual Change	Awareness promotion through publications, workshops, etc Formal education & training Debates & dialogues on topical issues Pilot Project mentoring Technical support/ assistance/ co-production	**Internal drivers: positive & negative levels of:** • Interest perceptions • Commitment/enthusiasm **External drivers: level of** • Workplace Requirements • Opportunities • Time • Resources • Sermons, incentives, penalties **Level of re-inforcement from different intervention types**	**Internal Self-efficacy:** Level of self-confidence in personal: • Knowledge • Insights • Skills **External drivers: level of:** • Compulsory participation • Voluntary opportunities to apply/experiment with new knowledge, insights & skills	**New individual transformational leaders/ champions with knowledge, attitudes, behaviour & incentives to drive EIPM change**
Interpersonal Group/ Network Change	Awareness promotion through publications, workshops, etc Formal education & training Debates & dialogues on topical issues Pilot Project mentoring Technical support/ assistance/co-production	**Stronger Internal drivers: positive & negative levels of:** • Interest perceptions • Commitment/enthusiasm strengthened by support mobilised **Stronger External network drivers: level of** • Workplace support • Workplace Requirements • Opportunities • Time • Resources • Sermons, incentives, penalties **Level of re-inforcement from different intervention types**	**Stronger Internal Self-efficacy:** Level of self-confidence in personal: • Knowledge • Insight • Skills through group support **Stronger External drivers: level of** • Compulsory participation • Voluntary opportunities to apply/experiment with new knowledge, insights & skills	**Individual change reinforced by creation/strengthening of networks consisting of new & more champions/transformational leaders, supporters & resources driving EIPM change**

Organisational Change	Awareness promotion through publications, workshops, etc Formal education & training Debates & dialogues Pilot Project mentoring Technical support/ assistance/ co-production	**Stronger Internal drivers: positive & negative levels of:** • Interest perceptions • Commitment/enthusiasm reinforced through organisational institutionalisation **Stronger External drivers: level of** • Workplace support • Workplace Requirements • Opportunity • Time • Resources • Sermons, incentives, penalties **Level of reinforcement from different intervention types**	**Stronger Internal Self-efficacy:** Level of self-confidence in personal: • Knowledge • Insight • Skills through organisational institutionalisation **Stronger External Pressures for Compliance:** • Compulsory institutional implementation of new knowledge, insights & skills	**Individual & network champions/leaders with access to organisational policy making opportunities create a sufficient critical mass and change institutional structure &/or functioning &/or norms related to policy EIPM process & content**
System Change	Awareness promotion through publications, workshops, etc Formal education & training Debates & dialogues Pilot Project mentoring Technical support/ assistance/ co-production	**Fully consolidated systemic drivers: positive & negative cultures, processes & structures of support for/ resistance to change** • Interest perceptions • Commitment/enthusiasm • Workplace support • Workplace Requirements • Opportunity • Time • resources • Sermons, incentives, penalties **Level of re-inforcement from different intervention types**	**Fully consolidated Internal Self-efficacy and external validation as a systems attribute**	**Durable EIPM changes in system wide policy processes & content**

(Source: Author)

ASSESSMENT OF THE NATURE OF EIPM CHANGE

Against the background of the above discussion of the main drivers of policy change, the complex interactions of these drivers and their influence on policy decisions, one can identify the following weaknesses of a rational, evidence-informed approach to policy decision-making:

Emotional and ideological constraints: The deep-seated emotional and value-laden or normative drivers of decisions summarised in Table 1 reduce the persuasiveness of rational arguments and necessitates that policy arguments in favour of rational approaches underpinned by good quality empirical evidence should in addition also address the weaknesses of these emotional and normative decision drivers in order to persuade policy decision-makers that a more rational approach to policy is required (eg: According to Cross 2016, rational evidence-informed arguments do not seem to have had any significant impact on President Robert Mugabe on his land expropriation and economic policies for that country over the last two decade. The question is how this approach can be more effectively implemented?).

Inadequacy of scientific data and research instruments: In addition to possible ideological differences about the interpretation of the current knowledge base on the topic of poverty, there are also frequently gaps in the data on relevant issues, and inadequate scientific measuring instruments or contexts within which the evidence is generated to reach valid scientific conclusions. This frequently results in quantitative findings that are ambiguous or not significant enough to be able to make definitive findings and conclusions. Qualitative research findings on the other hand can potentially contain strong emotional or value-laden foundations which detract from the scientific validity or impartiality of those research results.

Resource constraints: Resource constraints on finances, time and the availability of adequate people and skills to undertake the potentially exhaustive research needed for the production of the evidence base needed for a fully evidence informed or evidence-based policy decision frequently precludes this approach to policy-making, leading to the '*satisfycing'* model of policy-making popularised by Simon (1982). In this case competing policy strategies are identified and compared until a relatively satisfactory solution is reached, without the necessity to undertake a fully systematic and comprehensive review of all feasible alternatives.

Nature of evidence: There is further contestation about what can be regarded as 'evidence'. A purist school of thought regards rigorous quantitative evidence as the so-called objective 'gold standard' of evidence, with all other types of evidence as inferior (Mouton 2014). On the other hand there are emerging indications that policy decision-makers regard their own personal observations and experiences frequently as important 'evidence' for policy purposes, although this 'evidence' does not always comply with the rigorous scientific criteria for objective validity. In fact, the objective nature of so-called objective 'evidence' is controversial and disputed (Du Toit 2012).

Non-use of evidence: The last potential problem with the evidence-informed approach to policy-making for purposes of this contribution, is the fact that the causal link between available evidence and its use in policy-making is still very weak (Cairney 2015). The content and direction of policies are frequently in contradiction to the existence of incontrovertible evidence to the contrary, indicating that other factors than rational evidence still are the major drivers of policy decisions in many cases, confirming the complex nature of the policy process and the important role of non-rational decision drivers like emotional and ideological interests.

Despite these potentially serious weaknesses summarised above, the main strengths of this new policy change paradigm is that:

- It can sensitise policy makers for the importance of evidence-informed policy change and transfer knowledge and skills how to do it.
- It can maximise rational approaches to policy making and minimise the negative impacts of ideologically and emotionally-driven policy processes.
- If the ToC illustrated in Table 3 is accurate, and if the EIPM interventions summarised in that table are implemented in the most appropriate manner to maximise success, the new EIPM paradigm has the potential to improve the quality of the policy process involved, as well as the quality of the eventual policy decisions, and should bring about positive policy change. This is difficult to measure, but the ITAD evaluation of the BCURE programme that is currently underway, contains promising provisional data supporting these assumptions and the potential for success (Vogel & Punton 2016).

CONCLUSIONS

The question that is addressed in this article is how evidence-informed policy decisions can be maximized in complex policy environments. The main conclusion is that the nature of complex policy contexts precludes the identification of simple, linear, causal relationships between evidence adduced and the nature of policy decisions that the evidence relate to. Many competing interrelationships among individual, network, organizational and systemic variables in each unique policy context, determine the degree of successful transformation of policy-related evidence into potentially improved policy processes, content and outcomes.

EIDM is a well-grounded methodological approach that is at the heart of scientific research but is difficult to achieve in most policy contexts which are highly complex, and where policy decisions are traditionally influenced by the cumulative impact of a diverse number of considerations of which rational evidence of good or bad practices and of historically successful or failed interventions constitute only a small and sometimes even a negligible part.

This ambiguity of ‘scientific’ evidence-based results means that the value, credibility and legitimacy of EBPM is not a given and that subjective attitudinal, financial and emotional drivers of decision-making are very salient lenses through which ‘evidence’ is normally viewed. EBPM can therefore be a long-term impact goal, but only under well-prescribed conditions including the availability of adequate strong and definitive findings to base policy responses on, as well as decision-makers who are persuaded for whatever reasons that this ‘evidence’ provides the best direction that a policy intervention should take. Persuasion normally rests on the cumulative impact of a combination of rational, cognitive and affective variables on the perceptions of decision-makers in a specific policy context or environment.

EIPM is therefore not always the panacea that it is regarded as by many converts. Nevertheless, EIPM is an increasingly influential contemporary decision approach based on as much as possible rational considerations that have to be taken into account in the policy process. It is only successful under conditions that are conducive to its adoption in the policy process. However, it is a fast-growing global industry, stimulated by a number of international initiatives like the World Bank supported International Institute of Impact Evaluation (3ie), the United Kingdom Department for International Development (DFID),

the Canadian International Development Research Centre (IDRC), as well as the requirements of the American government and various policy and evaluation scholars.

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