

From individual policies to policy packaging

Submission to *European Transport Conference 2010*

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ABSTRACT

Transport systems in the European Union are complex. It is increasingly evident, however, that standard policy measures designed to manage these systems are unable to recognise and respond in kind to this complexity and that this has profound implications for the effectiveness and efficiency of policy interventions. Unless improvements are made to the manner in which contemporary transport systems are managed and governed, transport policy will be unable to ensure that the daily mobility of people, information and materials within the EU can proceed in a desirable direction, without jeopardising broader social, economic and environmental objectives. A major barrier to the realisation of effective and efficient policy interventions is the continued presence of isolated decision-making on the part of key policy actors. Indeed, such isolated thinking can result in situations where several independently-formulated and implemented policy measures are simultaneously enacted within the same location, potentially resulting in contradictory relationships between measures, limited policy effectiveness and wasted resources. Recognising the need to prevent unintended effects from policy interventions and to exploit the potential benefits of synergetic relationships between complementary measures, this paper presents the conceptual foundations of the EU-FP7 OPTIC project. Specifically, it outlines a theoretical approach for the systematic combination of individual policy measures so as to improve the effectiveness, acceptability and feasibility of transport policy interventions. Overall, we argue that policy packaging can offer a far greater potential for achieving policy targets and objectives than single policy measures deployed in isolation. Yet, a careful and relatively well designed process must be undertaken for such packages to be effective.

1. INTRODUCTION

Contemporary transport systems, in facilitating the movement of individuals and material goods, naturally confer many benefits to society. Yet, as is increasingly recognised, the same systems also generate and/or compound numerous social, environmental and economic problems that require various forms of policy intervention in order to mitigate their harm. Furthermore, the vast majority of these problems are *multi-aspect* in nature (OECD, 2007). In other words, policy interventions designed to mitigate their harm are rarely able to do so; rather, they must constantly recognise and respond in kind to problems' spatial and temporal complexity and ensure that they remain sufficiently flexible to address future risks and uncertainties. The salience of this complexity has clear implications for the design of policy interventions; rarely can so-called 'messy' policy problems (Ney, 2009) be solved by simple solutions alone. In short, there are no so-called 'silver bullet' measures available for dealing with the multifaceted transportation challenges that Europe faces in the coming decades; an effective response requires concerted and coordinated action (OECD, 2008).

Importantly, the validity of this principle is by no means restricted to the logic of integrating transport policy with other broad domains such as environmental management or energy policy (although this can prove highly advantageous). Rather, it remains highly relevant at the level of transport policy *per se*. That is to say, even for a single issue like urban traffic congestion, the 'optimal' policy response would almost certainly encompass a range of measures deployed in a coordinated fashion. As Feitelson (2003) observes, however, the processes by which policy measures are devised, proposed, implemented and evaluated are all too often *isolationist* in nature. That is to say, a lack of consideration is given to the

potential synergetic and/or contradictory effects that individual measures may impose—directly or indirectly—upon each other. This is argued to be true of instances where one or more measures are imposed in tandem, and also where new measures are implemented in a policy milieu without due consideration of measures already in existence.

In contrast to such isolationism, ‘policy packaging’ arguably represents a more holistic and enlightened approach to the formulation of policy interventions. Through the calculated combination of individual policy measures, made possible following a concerted exploration of their interrelationships, policy packaging seeks to maximise both the effectiveness and tolerability of policy interventions in the transport system. The reason for this is fairly logical, as May and Roberts (1995, p. 98) contend: ‘there is benefit to be gained from an integrated approach, when compared with the piecemeal implementation of individual measures... [as this yields] a higher performance against the objectives of the strategy than could be achieved by the individual measures on their own.’ Packaging measures together in this manner is vital for fulfilling policy objectives in politically acceptable ways and for ensuring the viability of fundamental shifts in policy direction within the foreseeable future (Banister *et al.*, 2000). Indeed, as the OECD (2008) note, if done well, policy packaging can represent an ideal approach to designing *effective and efficient* policy interventions.

The OECD’s (2008) caveat ‘if done well’, however, is a valuable and pertinent observation. Given the limited material, evidence available as to their success, policy packages should not be construed as a panacea to the complexities and challenges of policy-making in their own right. In other words, while the rationale for policy packaging stems largely from the ‘silver bullet’ fallacy, there is a danger that packages may themselves be tacitly and mistakenly revered in the same regard. As will become evident, policy packaging is a complex and multifaceted process and, as such, plenty of opportunities exist for the occurrence of practices and decisions leading to non-optimal outcomes.

This paper proceeds through two major sections. First, we outline what the key literature in the field considers to be the core *elements* of a policy package: primary measure(s); effectiveness measures, acceptability measures and feasibility measures. Second, drawing on theoretical advances made in recent literature, we explore potential means by which *processes* of policy packaging may be strengthened so as to provide a coherent and structured platform for effective and efficient policy interventions in the transport system.

2. CORE ELEMENTS OF POLICY PACKAGING

This section introduces some of the main conceptual themes and high-level approaches underpinning the notion of policy packaging. This comes in advance of Section 3 which extends our analysis to the procedural level. Here we outline what are generally considered to represent the core elements of a policy package: primary measures; effectiveness measures, acceptability measures and feasibility measures (Figure 1). All these should be considered—but not necessarily included—in a package.

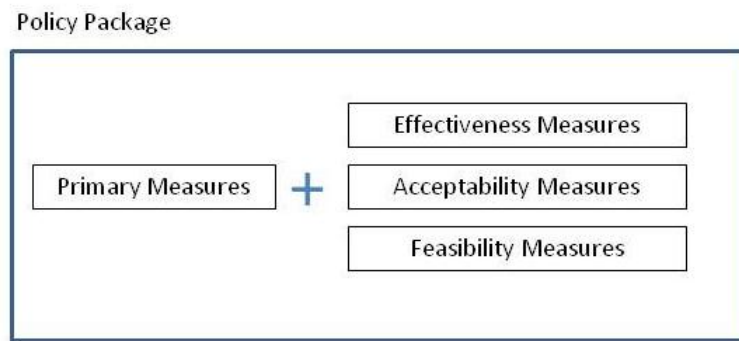


Figure 1 The main building blocks of a policy package

It is important at this early stage to first consider what can be said to genuinely constitute a package. The verb, to ‘package’, in the sense in which it is used in this context, has been defined by the *Oxford English Dictionary* (1989) as ‘to put together as a single unit.’ Naturally, this implies that a noteworthy degree of rationality is present, insofar as a ‘packager’ would use their faculties of reason, manifest through various methods of analysis or planning, to assemble individual policy measures in a calculated and deliberate manner (*ibid.*). For the purposes of our analysis, we define a policy package as follows:

A ‘policy package’ is a combination of individual policy measures, aimed at addressing one or more policy goals. The package is created in order to improve the impacts of the individual policy measures, minimize possible negative side effects, and/or facilitate interventions’ implementation and acceptability.

Here we thus distinguish our approach from assemblages of individual policy measures that exhibit coincidental spatial and temporal co-presence as the result of other political or societal processes. Indeed, the OECD (2008) note that, to date, the majority of what may appear to be ‘policy packages’ are actually the product of myriad *ad hoc* decisions taken in relative isolation of one another, and often resulting from fluctuating and pressing short-term political imperatives. Thus, while several measures may be implemented in the same spatial and temporal context, it would be wrong to consider these to be *bona fide* policy packages in the sense used in the OPTIC definition as they have not been developed in a ‘fully articulated and coherent manner’ (*ibid.*, p. 435).

2.1 Primary measures

As Banister *et al.* (2000) note, the process of designing a policy package is necessarily iterative and creative; policy-making clearly does not take place in a socio-cultural vacuum, and hence one cannot hope to create a viable package on the basis of formal procedure alone. Nevertheless, it is invariably acknowledged that the likelihood of developing a coherent, internally consistent and implementable policy package without recourse to some form of strategic process or framework is slim (*ibid.*; Feitelson, 2003). A common point of departure in the construction of policy packages is thus the identification of a primary policy measure—or measures—that respond in an effective and direct manner to some given externality or policy objective(s). As will be discussed, it is to such primary measure(s) that further policy measures are added, in order to fulfil the various criteria by which a policy

package may be considered viable. In the interest of conceptual clarity, this paper uses the term ‘primary measure(s)’ in preference to ‘starter package’ (Banister *et al.*, 2000), or ‘base package’ (Feitelson, 2003), as this aids the intelligibility of related work in the OPTIC project.

Naturally, decisions taken as to which primary measure(s) to adopt in order to combat a particular transport problem will be highly contingent upon the precise social, economic and political contexts in which the intervention is being both designed and implemented (Feitelson, 2003). This said, generic guidance remains useful for ensuring due consideration is given to prominent concerns which are broadly applicable regardless of local specificities. In light of this, Banister *et al.* (2000) identify four key principles for policy-makers to bear in mind when deciding which policy measures should represent the core of any package: first, the primary measure(s) should be, as far as is feasibly possible, uncontroversial, as this automatically serves to reduce the need for acceptability amendments later in the process; second, they should include measures which are likely to make vital contributions to an intervention’s overall effectiveness, but which require a long lead time before results appear (such as land use measures); third, they should include measures which are likely to act as trigger mechanisms for ‘dynamic processes’ (i.e. those that initiate desirable positive feedback); and fourth, they should, as far as is feasibly possible, afford a degree of adaptability over time.

2.2 Additional measures

Once the primary measure(s) have been identified and their likely impact has been evaluated, there may be a need for policy-makers to incorporate additional measures so as to enhance both the effectiveness and efficiency of the proposed intervention—thus creating a *bona fide* ‘package’. Understanding and marshalling these additional measures constitutes the central opportunities and challenges of policy packaging design and, given the wealth of potential measures available, it is likely that a high number of potentially synergetic and contradictory relationships will be present, with each demanding careful consideration and appraisal. Such additional measures can be usefully categorised according to the role they are expected to perform within a policy package (Feitelson, 2003). While terminologies naturally differ, it is possible to trace three such roles which appear particularly significant—relating respectively to the enhancement of packages’ effectiveness, acceptability and feasibility. Importantly, the latter two roles also strongly relate to the overall *efficiency* of a package, insofar as additional measures may potentially alleviate the costs of overcoming barriers associated with socio-political acceptability and/or economic feasibility.¹

Increasing package effectiveness

The ‘effect’ that an intervention has on a policy target can be defined in terms of the former’s “operative influence” on the latter; and hence ‘effectiveness’ can be defined in terms of the magnitude of this operative influence. An ‘effective’ policy package would thus be one that exhibits a degree of influence on a policy target to such an extent that it is capable of

¹ This chosen structure of analysis follows Feitelson (2003), insofar as it maintains a broad perspective with respect to the net value of a policy package. Specifically, this value is argued to simply be a product of effectiveness (benefit maximisation) and efficiency (benefits/cost ratio). Issues concerning the ‘acceptability’ and ‘feasibility’ costs of a package thus pertain to both categories.

manipulating it in an expedient manner. Much of the literature on package effectiveness has approached this issue in terms of ‘synergy’, which can be defined as the ‘increased effectiveness...produced as a result of combined action or co-operation’ (*Oxford English Dictionary*, 1989). Synergetic relationships are thus considered to exist in a policy package where individual measures mutually underpin one another. This can be particularly important where failures exist in the markets in which the primary measure is operating, thus an additional measure can help to overcome these failures (e.g. a lack of information) and thus make the primary measure more effective than it otherwise would have been (OECD, 2007). As stressed below, however, packaging must proceed in a cautious and analytical manner, with a considered evaluation of additional measures’ marginal costs and benefits.

Increasing Package Acceptability

Naturally, the profession of policy-making rests upon the valid assumption that policy measures and packages, to various degrees, are able to influence firms’ and the public’s behaviour. The most successful policy interventions can also be *formative*, in the sense that they not only succeed in influencing behaviour, but manage to influence attitudes with regard to a particular issue (e.g. UK drink-driving or anti-smoking laws). It is generally acknowledged, however, that the exact characteristics of a potential policy intervention are highly contingent upon the degree to which it is considered acceptable by a range of actors, often with competing interests. For this reason, therefore, additional measures may help to make a primary measure(s) more socially and/or politically acceptable—providing they are implemented in full awareness of the political and institutional context into which the proposed package is to be deployed (Feitelson, 2003). Indeed, a well-formulated additional measure that somehow serves to placate strong opposition to an otherwise effective measure has the potential to significantly reduce the transaction costs associated with the overall intervention (*ibid.*).²

Increasing Package Feasibility

If policy packages are to be effective in meeting their targets, they must have an inbuilt sensitivity to complexity, and the ability to address policy targets with a battery of spatially- and temporally-differentiated measures. The element of temporality here is particularly significant. As Banister *et al.* (2000) highlight, it may be profitable to classify additional measures according to whether their effectual timescale is short-, medium-, or long-term. Essentially, this represents the time taken for the relevant actors (e.g. motorists) to react to the measure (Feitelson, 2003). Depending on the nature of the measure, this period may be almost instantaneous (e.g. the response to new parking restrictions) or it may be more gradual. In addition to this ‘effectual’ timescale, however, Feitelson (2003) suggests that attention should also be directed to two further timescales: measures’ ‘enacting’ time—determined by various administrative, technical or legislative processes that precede implementation—and ‘implementation’ time—referring to the time between a decision to deploy a measure and its eventual execution. Thus, it might be necessary to include additional measures in the package which serve to meet similar targets that have a different, shorter,

² Formally, transaction costs can be defined as ‘the costs of deciding, planning, arranging and negotiating the action to be taken and the terms of exchange when two or more parties do business; the costs of changing plans, renegotiating terms, and resolving disputes as changing circumstances require; and the costs of ensuring that parties perform as agreed’ (Milgrom and Roberts, 1990, p. 60).

enacting time and/or implementation time in order to compensate for the long enacting and/or implementation time of certain primary measures.

3. THE PROCESS OF POLICY PACKAGING

In this section, we build on the ‘core elements’ discussed above, but broaden our focus to encompass the important *procedural* elements of policy packaging. We thus examine some of the key considerations and decisions involved in the development of effective and efficient interventions. While such processes are vital to the success of policy packaging, our intention here is not to prescribe a singular ‘finalised’ method for policy packaging. Rather, we aim to develop a framework for policy packaging that forms a sound conceptual basis for the formulation of transport policies. Specifically, this initial framework is intended to support the following five concerns:

- The effectiveness of policy interventions in the transport system (with respect to meeting the targets and objectives set);
- The efficiency of policy interventions in the transport system (with respect to inter-measure interactions);
- The efficiency of policy interventions in the transport system (with respect to social and political acceptability);
- The efficiency of policy interventions in the transport system (with respect to technical and economic feasibility);
- The *ex-ante* prevention and *ex-post* mitigation of non-intentional effects.

The framework itself is comprised the following four phases (Figure 4.2):

PHASE 1 – ‘Determination of values, objectives and targets’

PHASE 2 – ‘Inventory of measures, provisional measures and causal assumptions’

PHASE 3A – ‘Evaluation: effectiveness and efficiency’

PHASE 3B – ‘Evaluation: prevention and mitigation of non-intentional effects’

PHASE 4 – ‘Additional measures and inter-measure interaction’

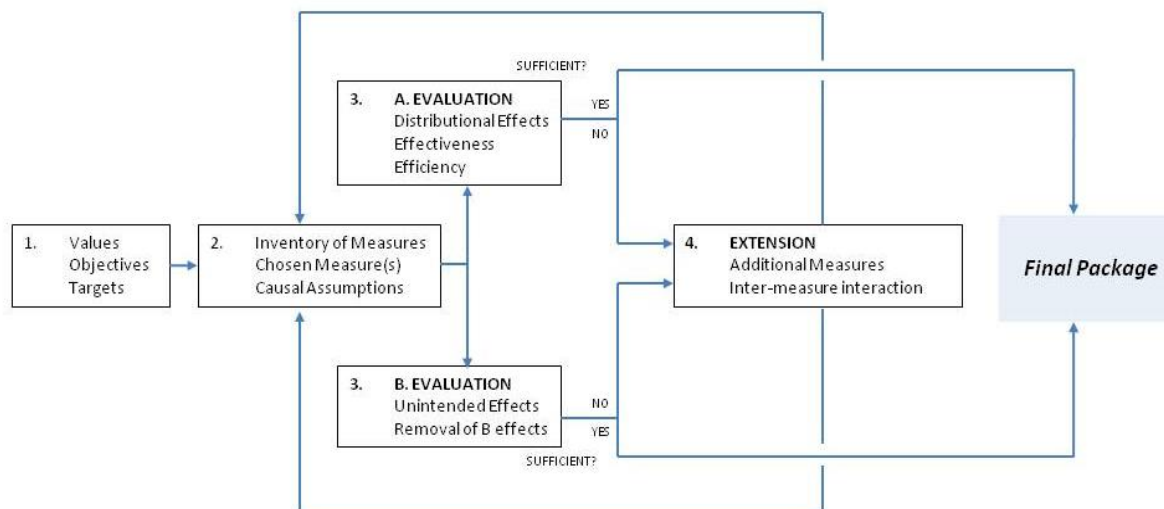


Figure 2 General phases in the policy packaging process

For ease of intelligibility, these will be discussed in the order shown above. However, emphasis is placed throughout on the framework's iterative nature, so it should not be viewed as necessarily chronological. It is important to note here that the framework is highly stylised. Nevertheless, the framework has been developed in such a manner as to communicate the main procedural elements of policy packaging, rather than seeking to be ontologically correct.

3.1 Objectives, measures and causality (Phases 1 and 2)

The first phase of the framework—termed ‘determination of values, objectives and targets’—initially involves the designation of particular phenomena as ‘undesirable’ in the light of various ethical, moral or utilitarian value systems and world-views. Subsequently, political objectives are agreed upon in relation to these phenomena, and specific (often numerous) targets are identified in order to realise the objective(s). This will invariably involve the presence of competing values and world-views as well as markedly divergent perceptions of ‘reality’—characteristic of so-called ‘wicked’ (Rittel and Webber, 1973) or ‘messy’ (Ney, 2009) policy problems. Clearly, the democratic nature of this phase necessitates the participation of a broad range of actors and stakeholders, including politicians, citizens, policy-makers, NGOs and commercial interests. The role for policy analysts is thus less clearly defined here than in later phases. Nevertheless, expert knowledge is a valuable resource, especially when one considers that the quality of early decision-making can have significant implications further along the policy-development process. Importantly, analysts have a lead role to play in ensuring that early decisions are sensitive to the objectives and targets of overlapping policy domains (e.g. healthcare). As discussed below, this has the potential to reduce the likelihood of certain non-intentional effects.

The second phase of the framework—termed ‘inventory of measures, provisional measures and causal assumptions’—is comprised of three stages. First, an inventory of potential primary measures is created. This is intended to be an open and liberal process, with potential measures rarely being rejected outright at this point. The inventory could be comprised of a diverse array of ‘lifestyle’- ‘market’- ‘regulation’- and ‘provision’-orientated measures (see Banister *et al.*, 2000), including both innovative measures and those garnered through policy learning efforts. Second, this inventory is subjected to expert review and one or two primary measure(s) are selected on the basis of key criteria. Are there, for example, measures available that are relatively uncontroversial, yet remain adaptable or have the potential to act as trigger mechanisms? Have some measures been proven to work effectively in the recent past or in similar geographical contexts? Is there a measure which is likely to have the backing of particularly influential actors? Third, the causal assumptions underpinning this selection are codified using a ‘causal map’. This final stage is intended to illustrate the direct and indirect processes by which the actors believe the chosen primary measure(s) will influence the various policy target(s). As Figure 3 demonstrates, such ‘causal mapping’ (Huff, 1990) is generally designed to support the codification and dissemination of tacitly-held causal knowledge and assumptions. In other words, it is essentially a diagrammatic representation of knowledge, or ‘a form of visual aid to enhance our understanding of the thoughts of an individual, group or organisation’ (Pinch *et al.*, 2010, p. 377).

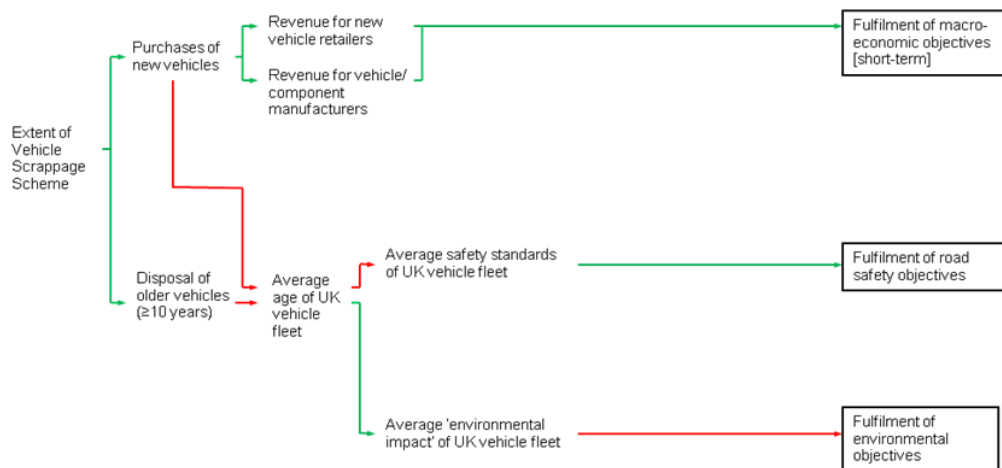


Figure 3 Apparent causal assumptions underpinning the UK Vehicle Scrappage Scheme (Green lines indicate positive causal relationship, red lines indicate negative causal relationship, arrows indicate direction of causality).

3.2 Evaluation of effectiveness and efficiency (Phase 3a)

Phase 3a of the framework—termed ‘evaluation: effectiveness and efficiency’—is comprised of two stages, with each drawing heavily on the causal map produced in Phase 2. First, the likely distributional effects of the primary measure(s) are considered and evaluated. The intention here is to determine—insofar as is possible—the likely effectiveness and acceptability of the intervention in its original guise. For all its merits, it is clear that such causal mapping needs to be complemented here with input from robust quantitative modelling tools if decision-makers are to be able to make important decisions with a sufficient degree of confidence. Although their capacities are often overstated, computerised modelling tools can ably indicate the strength of certain cause-effect relationships, assist in the identification of critical paths within a proposed intervention and offer structural support to complex problems beyond the capabilities of the human mind (see Hensher and Button, 2000).

It is particularly necessary in this phase to consider which actors will be affected, how they will be affected, when they will be affected, and how much political capital these actors possess (Feitelson, 2009; Rietveld and Verhoef, 1998; OECD, 2007).³ In a hypothetical policy intervention labelled ‘liveable cities’, for example, Banister *et al.* (2000, p. 182) identify a series of stakeholder impacts likely to result from the various policy measures deployed. The primary beneficiaries of the measures were thought to be families with young children and the elderly, brought about principally by reduced car use in urban areas and a return to decentralised concentration land use planning. Those expected to be adversely affected, in contrast, were car drivers choosing to make rural-urban trips.

For Feitelson (2009), a systematic approach to the analysis of interventions’ distributional effects involves a procedure termed ‘actor assessment’. The value of such an approach is that

³ In addition to concerns of ‘who’, ‘how’ and ‘when’ in terms of distributional effects, one may be tempted to suggest further analysis of the variables ‘why’, ‘what’ and ‘where’. However, these are essentially either deducible from the nature of the causal model (i.e. ‘why’ and ‘what’) or/and are subsumed under ‘who’ (i.e. where).

it supports decision-makers and analysts in developing tailored strategies for coping with the varying interests, beliefs, positions and power held by affected stakeholders and so-called ‘formal authorities’. The matrix below illustrates the basic approach, using the hypothetical example of a toll on road-freight (Table 1).

Actor	Interests	Beliefs	Position	Political resources
Hauliers	Profit	“Road hauliers are already in a difficult situation, this would damage our industry”	anti	medium
Consumers	Low prices	“transport costs will be passed on to us”	anti	low (alternatively high as indirect effect of consumer behaviour)
Manufacturers	Profit	“Increased transport costs will further weaken our position vis a vis low cost regions (like Asia)”	anti	high

Table 1. A framework for ‘actor assessment’ (adapted from Feitelson, 2009)

Next, the knowledge of the intervention’s likely effectiveness and acceptability—derived from the causal assumptions and distributional effects—can be appraised against estimates of the intervention’s financial viability in order to determine, insofar as is possible, whether the current intervention is likely to represent ‘good’ value for money. The financial viability of an intervention is essentially the sum of its associated direct, indirect and transaction costs (Feitelson, 2003). Direct costs can be classed as those which are outlaid for the measure to be sufficiently implemented. For example, the costs incurred as a result of providing the necessary infrastructure for a park and ride scheme. Importantly, these can often be mitigated or even offset altogether by revenue generated by the measure’s own operation (i.e. park and ride fares) or by other measures co-deployed in an eventual policy package (e.g. congestion charging). Indirect costs may be considered as externalities incurred by society. Transaction costs may be considered as the cost of overcoming political and institutional barriers, as defined above. At this point, it should be possible to come to an initial judgement as to whether the intervention is considered to be sufficient for purpose.

3.3 Prevention and mitigation of non-intentional effects (Phase 3b)

Phase 3b of the framework is termed ‘prevention and mitigation of non-intentional effects’, and can also be considered to represent an evaluative stage of the process. Traditionally, once a proposed intervention is considered to be an effective and efficient means of achieving a pre-specified policy objective, the policy development processes ends and implementation processes begin. This is understandable; however, the analyst’s role does not cease at the moment a theoretically optimal intervention has been developed. It is also the responsibility

of the analyst to conceptualise the problem in its fullest sense and to take into account the potential risks created by the presence of non-intentional effects. A full account of this phase is covered in a complementary paper at the European Transport Conference, 2010 (see Gudmundsson *et al.*, 2010).

3.4 Additional measures and inter-measure interaction (Phase 4)

As noted, the complexity of contemporary transportation problems is such that measures deployed in isolation will rarely suffice. In Phase 4, then, we are concerned with the manner in which analysts may modify the proposed intervention so as to improve its effectiveness, efficiency and/or limit its propensity to bring about non-intentional effects. Specifically, in the light of the causal map, distributional effects, financial viability of the primary measures and/or the likely presence of non-intentional effects, it may become evident that effectiveness and/or efficiency of the intervention might be improved through the incorporation of additional measures. Perhaps barriers to acceptability are evident, for example, and additional measures may help to placate this opposition; or perhaps information failures are likely to exist and additional measures may help to increase the effectiveness of those primary measures that rely on a threshold degree of public knowledge. It may also be the case that non-intentional effects can already be foreseen and need to be addressed. Indeed, there can be many reasons which call for expansion of the package.

A central component of Phase 4 is the systematic analysis of what we term ‘inter-measure interaction’. This process is concerned with establishing detailed knowledge of potential additional measures’ likely relationships and, hence, examining the extent to which such measures may or may not, directly or indirectly, improve the quality of the proposed intervention. This is likely to be a highly complex process, as it requires detailed and considered appraisal of the nature and magnitude of the relationships between both the measures themselves, between the measures and the policy target(s)/objectives *and* between the measures and existing policies already in place. Indeed, it will be a challenge simply to achieve such an understanding of likely interactions in a conceptual sense; extending the analysis so as to provide definitive estimates of the magnitude and probabilities associated with each relationship will be harder still. Success in this phase will thus be strongly dependent upon the capabilities and accuracies of modelling, as noted above.

The essential criteria by which a potential additional measure would warrant inclusion in the policy package relates to whether it is likely that the *total* marginal benefits (TMBs) resulting from its inclusion will outweigh the *total* marginal cost (TMCs) of its inclusion. Here, TMBs refer to the net positive effect of an additional measure on the effectiveness of the intervention, whereas TMCs represent the sum of the additional measure’s associated financial and transactional costs. This distinction between *individual* marginal benefit and *total* marginal benefit is, of course, a vital one—precisely due to the presence of synergetic and/or contradictory effects. Essentially, the total marginal benefit represents the net effect an additional measure would have on the policy target. For example, if a road pricing scheme constituted the primary measure in an intervention designed to reduce congestion, the total marginal benefit resulting from the addition of a Park and Ride service would be the difference in congestion levels pre and post its addition. Establishing the marginal benefit of implementing the measure in isolation is thus of limited value, as such marginal benefit may well be either offset or augmented by the presence of other measures.

Following Tæihagh *et al.* (2009a, 2009b), it appears probable that two particular varieties of additional measures are likely to lead to net marginal benefits:

Pre-conditional measures

These can be defined as measures, without the inclusion of which, one or more other measures will not function. In essence, such relationships represent critical paths in the causal map of the intervention. As such, measures to which other measures are act as a pre-condition to them are likely to have a high transaction costs and thus also financial costs, since they require the inclusion of the pre-condition measure.

Synergetic/faciliatory measures⁴

These can be defined as measures which support the functional ability of one or more other measures, although these other measures can still be implemented independently. The OECD (2007) suggest that there are at least five different purposes for synergetic relationships within any given policy package, those that: ‘provide information’, ‘stimulate innovation’, ‘address split incentives’, ‘limit monitoring and enforcement costs’, and ‘reduce compliance cost uncertainty’. Earlier work by May and Roberts (1995), too, identifies three fundamental ways in which measures can be considered ‘synergetic’. First, they can be complementary in terms of their *joint impact on users*. For example, in addition to road pricing, the London Congestion Charging scheme simultaneously allocated significant resources to improvements in the public transport network. Second, two or more measures can be complementary in the sense that one may make the other(s) more *financially feasible*. For example, fees generated by parking measures might in turn provide the financial capital necessary to fund the construction of new infrastructure. In extreme situations, these may constitute pre-conditional relationships. Third, measures may be complementary in the sense that one might make another more *socially or politically acceptable*. To return to a previous example, the fact that a substantial part of the revenue generated by the London congestion charge was earmarked for public transport improvements made the former more palatable to those affected (see also Jones, 1991).

Correspondingly, two particular varieties of additional measures are likely to lead to a net marginal cost:

Redundant measures

These can be defined as measures which make no effectual contribution to the policy package beyond that already provided by existing (primary or additional) measures. Simply put, this occurs where inclusion of an additional measure in a package will have little or no additional impact on the net benefit of the package beyond that which existed prior to its inclusion. Such redundancy clearly leads to unnecessary administrative costs and further entails that packages run the risk of becoming overly large and complex, at the expense of effectiveness, efficiency and flexibility (OECD, 2007). It is also advisable to refrain from incorporating additional objectives beyond those directly concerned with the problem/ externality in question. Thus in the case of a transport policy package, it may make more sense to address the bulk of non-transport objectives (e.g. social security), by other means (*ibid.*).

⁴ Tæihagh *et al.* (2009) make a conceptual distinction between these two types. However, for our purposes we shall consider them to be synonymous.

Contradictory measures

These can be defined as measures that produce conflicting outcomes or incentives, which mean that they are ‘at odds’ with the purpose of other (primary or additional) measures. As Feitelson (2003) and the OECD (2008) both note, such contradictory relationships can particularly arise in situations where a policy package seeks to address more than one objective. If, therefore, as may occur, the inclusion of an otherwise valuable additional measure serves to detract from one or more other measures and *ergo* on one or more other policy targets, then a broader decision-making approach must be pursued. Specifically, such a situation necessitates that one must establish both the extent of the measure’s influence on the range of policy targets *and* the relative weight of importance attached to each of the policy targets (Feitelson, 2003). This latter consideration will again entail an assessment of the targets’ distributional effects, and may be derived in conjunction with stakeholders via a form of Multi-Actor Multi-Criteria Analysis (MAMCA) (see, for example, Macharis *et al.*, 2010).

Crucially, the new knowledge produced in Phase 4 must remain grounded in all of the concerns addressed in Phases 2, 3a and 3b. Hence, the framework is iterative in nature; provisional additional measures that are deemed to be potentially useful in Phase 4 must be incorporated into the intervention’s overall causal map and, subsequently, the analysis undertaken in Phases 3a and 3b must be repeated in light of the new package structure. The policy packaging process ends when the package is deemed to be sufficient when appraised against *both* the criteria in Phase 3a (i.e. it is an effective and efficient means of meeting a policy objective) and Phase 3b (i.e. it affords the prevention and mitigation of non-intentional effects).

4. CONCLUSIONS

As noted in the introduction, policy packages offer a far greater potential for effectiveness than single policy measures deployed in isolation. To maximise this potential, however, substantial thought must be given to their design. Packaging frameworks must thus be able to ably incorporate concerns relating to relevant package targets, package orientation, transport sub-sector(s) affected, and spatial/ temporal scales of action. Essentially the existing literature on the topic initially advocates building a package around one or more primary policy measures. To this starter package, supplementary measures may be added in order to improve the package’s effectiveness, acceptability, and feasibility. It is important to reiterate that policy packaging is not an exotic dalliance or some kind of luxury technique only to be applied in times of bountiful resources; rather it needs to be stressed that, in the current political landscape, it should represent the *de facto* approach to policy-making. Even when resources are constrained to the extent that designing and implementing a large package of heterogeneous measures is prohibitively expensive, the value of policy packaging theory still remains highly relevant for evaluating the likely nature of the interactions between any new measures proposed and those existing ‘in the field’.

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