

Negative Case Selection

Justifications and Consequences for Set-Theoretic MMR

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Negative Case Selection: Justifications and Consequences for Set-Theoretic MMR

Introduction

There is much to be gained by mixing different methods in pursuit of valid inferences about the social and political worlds. In particular, because of their common focus on set theory, the sequential application of Qualitative Comparative Analysis (QCA) and process tracing (PT) in set-theoretic mixed-method research (MMR) holds great promise (Rohlfing and Schneider, 2013; Schneider and Rohlfing, 2013, forthcoming; Schneider and Wagemann, 2012; for an applied example see Samford, 2010). QCA links combinations of conditions (or causes) to outcomes, all conceptualised as sets (Ragin, 2008). PT links start-up conditions (causes) to outcomes through mechanisms comprised of mechanism elements. In recent methodological work, start-up conditions, outcomes, mechanisms, and mechanism elements in PT are all also conceptualised as sets (e.g. Beach and Pedersen, 2013). Set-theoretic MMR on sufficiency, which is the focus of this paper for reasons I will explain, proceeds in three steps. First, QCA is used to establish the sufficient conditions for an outcome. Subsequently, QCA results are used to select cases for PT. Finally, PT is used to examine the mechanisms linking conditions to outcomes.

However, the application of set theory and QCA raises some approach specific issues. In this paper, I address one such issue: *Which, if any, gains for the analysis of an outcome can come from PT in negative cases in set-theoretic MMR?* By negative cases, I simply mean cases where the outcome does not occur.

Researchers using PT often refer to negative cases when arguing why their perspectives on positive cases are valid. For instance, in her study of the 'nuclear taboo' in American foreign policy, Tannenwald (1999, 442-443) discusses the decision to bomb Hiroshima and Nagasaki (a negative case of nuclear non-use). She shows that - while some protested using nuclear weapons against Japan - moral arguments did not play the role they did in later non-use decisions.

In another well-known example, Skocpol (1979) uses cases where social revolutions did not happen to support her study of the French, Russian, and Chinese revolutions. For instance, she examines why the Meiji Restoration in Japan did not result in a revolution, even though it resulted in a political crisis resembling the crisis of pre-revolutionary France. She argues that Japanese bureaucratisation and the absence of a powerful landed upper class meant that Meiji

reforms were not met with the resistance and peasant rebellions that fuelled the revolution in France (see especially Skocpol, 1979, 99-103, 109-111).

As these examples illustrate, researchers in the applied PT literature invoke negative cases. Yet, two characteristics of set-theoretic approaches complicate the discussion in set-theoretic MMR significantly.

First, set-theoretic causation is asymmetric.¹ As a consequence, the causes of an outcome Y are not necessarily the reverse of the causes of its negation or absence $\sim Y$ (read: 'not Y '). For a discussion of asymmetry, see Schneider and Wagemann, 2012, 81-83). This means that researchers may hesitate to invoke negative cases, since some differences and similarities between positive and negative cases can be ascribed to asymmetry. Second, because QCA often assigns cases to qualitatively different categories (or configurations), comparing cases across configurations does not lend much direct analytical leverage (e.g. Schneider and Rohlfing, 2013, 575).²

These two characteristics mean that established case selection procedures only consider negative cases useful in two instances. First, when they contradict the analysis (i.e. when they are negative but the analysis predicts that they should be positive), and hence present a problem in need of a solution. Second, when they can be matched and compared with nearly identical positive cases. The aim of the matching procedure is to approximate Mill's Method of Difference, permitting (symmetric) identification of the difference a cause makes for an outcome (e.g. Schneider and Rohlfing, forthcoming, 12). These procedures are sound, but they are overly limiting. In particular, they are limiting because suitably similar match cases will often not be available.

In this paper, I will argue that established procedures underutilise the leverage negative cases can provide. In particular, I argue that what I term *non-deviant negative cases* - negative cases that are typical of the sufficient conditions for the absence of an outcome - can be of great value.

My main message is this: *When QCA is mixed with PT, studies of non-deviant negative cases are analytically useful both with and without positive match cases.* Contrary to current recommendations, I argue that it is not necessary to approximate a Method of Difference design to gain from studying these cases.³

I will present three reasons, or 'justifications', why studies of non-deviant negative cases are worth engaging post-QCA. I will show what their use can mean to conclusions both about

negative cases and about positive ones. None of my justifications hinge on Method-of-Difference style comparisons with available positive match cases. Table 1 summarises my arguments.

[TABLE 1 ABOUT HERE]

The first justification is inferential: Precisely because set-theoretic MMR involves asymmetric claims and qualitative distinctions, there are limits to how much an analysis can claim about negative cases without studying them. However, in carefully bounded populations, negative cases are interesting both for their own sake and because they can show how an explicitly possible outcome fails to come about. Consequently, studies of negative cases may focus on what one might call 'failure mechanisms'. In addition to creating knowledge about negative cases, this may highlight a need to refine mechanisms proposed to produce the outcome in positive cases.

The second justification refers to theory: Processes leading to different outcomes are likely to be more diverse than processes leading to the same outcome. This diversity can expose theories to conditions under which their assumptions become contradictory or unexplored factors prove to be relevant. Consequently, studies of negative cases should be attentive to the assumptions behind the processes claimed to produce outcomes in positive cases. If these assumptions contradict or differ in positive and negative cases, the analysis highlights a need to refine the hypothesised processes in order to align them.

The final justification is logical: Studies of negative cases can ensure that the mechanism proposed to produce the outcome in positive cases is not at work in the negative cases as well. Consequently, studies of negative cases should focus, at least in part, on the mechanisms proposed to produce outcomes in positive ones. If mechanisms producing an outcome and its absence are illogically similar, the mechanism must be either rejected or refined.

As is clear, the approach I propose assumes that the researcher has specified a mechanism producing the outcome. However, this does not mean that negative cases are only useful when positive cases are also studied. All that is required is a hypothesis, which could be based on theory or on previous work. This means that full-fledged *theory-building PT* (Beach and Pedersen, 2013), where the researcher induces mechanisms from data largely without the guidance of theory, should at least begin with positive cases. But in *theory-testing PT* (Beach and Pedersen, 2013), I propose negative cases, and non-deviant negative cases in particular, as useful sources of leverage.⁴

The paper proceeds as follows. In the second section, I discuss non-deviant negative cases

and case selection in set-theoretic MMR on sufficiency. Here I also explain why I focus on sufficiency only (and hence ignore necessity). In the third section, I present an exemplary study of social pacts which I will refer to throughout (Avdagic, 2010). In the fourth through sixth sections, I outline the inferential, theoretical, and logical gains from studying non-deviant negative cases one by one. In each section, I emphasise what each justification means to how we should study negative cases in set-theoretic MMR. Additionally, I apply the guidelines I emphasise to Avdagic’s (2010) study. I conclude in the seventh section.

Set-Theoretic MMR and Non-Deviant Negative Cases

In this section, I first argue why I focus on sufficiency, as opposed to necessity, in the remainder of the paper. Second, I detail what the focus on sufficiency means for how we can approach mechanisms. Finally, I show what non-deviant negative cases are and how currently recommended case selection strategies in set-theoretic MMR use them.

I will focus on sufficiency for two reasons. First, a focus on sufficiency aligns with QCA as its core results pertain to sufficiency. Concisely, QCA treats cases as configurations of conditions and attempts, using Boolean minimisation, to determine which combinations of these conditions are sufficient for an outcome. The resulting combinations are referred to as the *solution*. If multiple combinations are sufficient for an outcome, each is referred to as a *solution term* (for an extensive introduction to QCA see Schneider and Wagemann, 2012). As I will be operating with separate solutions for outcomes and their absence, I refer to the sufficient solution for an outcome Y as the Y-solution and the sufficient solution for the absence of Y as the \sim Y-solution.

Second, a focus on sufficiency also aligns with PT. To see this, let us conceive of mechanisms as what causes their associated causes to cause their associated outcome (Goertz and Mahoney, 2012, 100). And let us adopt the idea that that mechanisms *produce* their associated outcome (e.g. Beach and Pedersen, 2013, Chapter 3). On these two premises, mechanisms in set-theoretic MMR must be sufficient for their associated outcomes. Sufficient conditions ensure that their outcomes occur as they constrain cases to be positive in their presence. They produce. Necessary but insufficient conditions do *not* produce outcomes. Instead, necessary conditions constrain cases to be negative in their absence but permit that anything can happen in their presence. Hence, considering mechanisms as necessary but not sufficient for outcomes is unattractive. Insufficiency would permit the outcome not to occur in the presence of the mechanism.

Similarly, considering conditions in a QCA as necessary but insufficient to initiate a mechanism is not attractive. This would mean that the conditions do not produce the outcome through the mechanism. Instead, the conditions would permit anything to happen in their presence.

Thus, if we conceive of mechanisms as I have outlined, conditions must be sufficient for a mechanism, which is sufficient for an outcome (see also Rohlfing, 2012, 152).⁵

Within a mechanism each *mechanism element*, or part of the mechanism, must have these same characteristics. It must have a sufficient cause, comprised of either one or more other conditions or mechanism elements. And it must be a sufficient cause, either individually or jointly with other conditions or mechanism elements, of one or more mechanism elements or the outcome (see also Baumgartner, 2009). If this is not the case, the *productive continuity* of the mechanism can break down since insufficient mechanism elements permit anything to happen in their presence. This is unattractive. Thus, to ensure productive continuity, PT in set-theoretic MMR involves *mechanisms comprised of sufficiency chains*. A focus on sufficiency accommodates this. A focus on necessity would not.⁶

Next, I fully introduce non-deviant negative cases. Set-theoretic MMR on sufficiency distinguishes between five types of cases (see Schneider and Rohlfing, forthcoming):

1. *Typical cases* that are consistent with a solution and members of both solution and outcome.
2. *Deviant cases for consistency in degree* that are not fully consistent with a solution but are members of both solution and outcome.⁷
3. *Deviant cases for consistency in kind* that are members of the solution but not the outcome and hence qualitatively contradict the solution.
4. *Deviant cases for coverage* that are members of the outcome but not the solution and hence are not explained by the solution. These cases always deviate in kind.
5. *Individually irrelevant (IIR) cases* that are members of neither solution nor outcome.

Figure 1 shows an enhanced XY plot used for case selection in the existing literature (e.g. Schneider and Rohlfing, 2013, 579). The figure plots membership in a Y-solution against membership in Y. Case above the diagonal are fully consistent with the Y-solution. Case above the horizontal line are members of Y. Finally, cases to the right of the vertical line are members of the Y-solution. In the figure, I present case types for the Y-solution in normal font and case types for the \sim Y-solution in bold (I refer to deviance in kind simply as deviance).

[FIGURE 1 ABOUT HERE]

A basic principle guides the types cases take: The solutions for Y and $\sim Y$ cannot be the same. If they were, the solution would create *simultaneous subset relations* with Y and $\sim Y$. Simultaneous subset relations occur when the same condition(s) are deemed sufficient for both outcome and its negation. This occurrence is not logically feasible (Schneider and Wagemann, 2012, 237-244).

Cases in zone 1 are typical of the Y -solution whereas cases in zone 2 are deviant for consistency in degree from the Y -solution. Because they are members of the Y -solution, neither of these two types of cases can be members of the $\sim Y$ -solution. Additionally, they are members of Y . Hence, they are IIR cases for the $\sim Y$ -solution.

Cases in zone 3 are deviant for consistency in kind. They are negative when the Y -solution expects them to be positive. But since they are members of the Y -solution they cannot be members of the $\sim Y$ -solution. Hence, these cases do not contradict the $\sim Y$ -solution but are also not explained by it. They are deviant for coverage from the $\sim Y$ -solution.

Cases in zone 6 that are deviant for coverage from the Y -solution may or may not be members of the $\sim Y$ -solution. If they are members, they are deviant for consistency in kind from the $\sim Y$ -solution as they are positive when this solution predicts that they should be negative. If they are not members, they are IIR cases for the $\sim Y$ -solution.

Finally, cases in zones 4 and 5 are IIR cases for the Y -solution. Since they are not members of the Y -solution, they may or may not be members of the $\sim Y$ -solution. If they are not members of the $\sim Y$ -solution, they are deviant for coverage for this solution. If they are members of the $\sim Y$ -solution, they may or may not be fully consistent with this solution. If they are not fully consistent, they are deviant for consistency in degree for the $\sim Y$ -solution. If they are fully consistent, they are non-deviant negative cases.

Thus, I can now provide a definition of non-deviant negative cases as *cases that are typical for the $\sim Y$ -solution*. They are a, possibly exhaustive, subset of IIR cases for the Y -solution. Figure 2 summarises how non-deviant negative cases can be identified as negative cases that are members of and fully consistent with the $\sim Y$ -solution. In addition, the figure shows how other types of cases (marked in bold) relate to the $\sim Y$ -solution.

[FIGURE 2 AROUND HERE]

Existing case selection recommendations highlight three uses for negative cases. These are

best illustrated with reference to the zones in figure 1. First, cases in zone 3 can be examined either alone or in comparison with cases in zone 1 to find why they contradict the Y-solution. Second, cases in zones 4 and 5 can be compared with cases in zone 6 to develop new explanations for Y. This requires that the selected cases are identical on the conditions included in the analysis. The analysis of the selected cases then searches for conditions that can distinguish the cases from each other. Such conditions would account for why cases in zone 6 are positive. Third, cases in zone 1 can be compared to cases in zone 5. This strategy requires that the selected cases are similar on all conditions in the relevant solution term but one. The strategy thus creates a comparison following the logic of Mill’s Method of Difference (Schneider and Rohlfing, forthcoming). The aim is to identify how the one difference between the selected cases account for their different outcomes. I am concerned with this third strategy in particular. I argue that studying cases in zone 5, and zone 4, is useful even when no cases in zone 1 are similar enough to satisfy the one-difference requirement. So long as a researcher has a working hypothesis concerning the mechanism producing Y, I argue, cases in zones 4 and 5 can even be analysed by themselves. That is, I argue that IIR cases are not always, in fact, individually irrelevant.

I will argue that non-deviant negative cases are particularly worth studying. Some of my recommendations will extent to other types of negative cases as well. However, since the \sim Y-solution proposes a consistent account of why non-deviant negative cases are negative, I view them as more fruitful targets for analyses than other types of negative cases.

Before introducing my example, let me make a point to avoid misunderstanding. Much has been written on how doing case study research without negative cases either results in selection bias (Geddes, 1990) or may be outright impossible (King, Keohane, and Verba, 1994, 129-130). In PT, these claims do not hold. Here, studies of only positive cases are both possible and valuable (Beach and Pedersen, 2013; Collier, Mahoney, and Seawright, 2004; George and Bennett, 2005; Goertz and Mahoney, 2012). I do not claim that studying negative cases is necessary for causal inference. I do claim it is highly *useful* for set-theoretic MMR. This merely to prevent the reader from thinking that I am rehearsing variations over well-known themes from ‘the statistical worldview’ (McKeown, 1999). I am not.

The Empirical Example: Social Pacts in Europe

In this section, I introduce Avdagic's (2010) study of social pacts in Europe. I will use her study as an example throughout. However, I am not attempting to question her contribution or contribute to her field. The aim is solely the example.

Avdagic (2010) provides an analysis of why some Western European countries responded to economic internationalisation by relying on social pacts. Her analysis includes the outcome 'reliance on social pacts as a strategy of economic adjustment during the 1990s' (SOCP) and four conditions: 'Maastricht imbalance' (MAAS), the members of which do not fulfil the European Union convergence criteria; 'high unemployment' (UNEM); 'intermediary union centralisation' (MEDC); and finally 'electorally weak governments' (MING).⁸ Table 2 depicts the SOPC-solution.⁹

[TABLE 2 ABOUT HERE]

The SOPC-solution fits the data well (solution consistency is 0.978, solution coverage is 0.769) and does not result in any deviant cases for either consistency in kind or coverage. Spain deviates in degree for consistency. This means that all negative cases are IIR for the SOPC-solution. I will show below that most are in fact non-deviant negative cases.

Next, I reverse the outcome and derive the \sim SOPC-solution using the same conditions as in table 2. I show the result in table 3. Once again, the solution fits the data well (solution consistency is 0.927, solution coverage is 0.864). As the table reveals, a number of cases are jointly covered by several terms (they feature *joint coverage*, indicated by *jc* in the table). The \sim SOPC-solution leaves no deviant cases for consistency in kind and leaves one case, Greece, as deviant for coverage.

[TABLE 3 ABOUT HERE]

All positive cases are IIR for the \sim SOPC-solution. In fact, they have to be IIR as they are positive and are members of the SOPC-solution. Most IIR cases for the SOPC-solution are non-deviant negative cases. Only Belgium and the Netherlands deviate in degree for consistency from the \sim SOPC-solution.

The exhaustive list of typical cases is thus: Finland, Ireland, Portugal, and Italy. Whereas the exhaustive list of non-deviant negative cases is: Austria, Denmark, France, Germany, the United Kingdom, and Sweden.

Applying Schneider and Rohlfing’s (2013, 581) *principle of maximum set membership* to the SOPC-solution results in a recommendation to select Italy, Ireland and Finland.¹⁰ But as I am making the case for studying negative cases, I will focus on only one case from the solution term covering the most cases and focus attention on the \sim SOPC-solution. Thus, I focus on Italy as a typical of the solution term MAAS*MEDC*MING and SOPC.

Applying the principle of maximum set membership to the \sim SOPC-solution, along with the recommendation to avoid selection of jointly covered cases (Schneider and Rohlfing, 2013, 567), results in a recommendation to select Germany, Sweden and Denmark.¹¹ I select Sweden as typical of the term MAAS* \sim MEDC and \sim SOPC.

It will be useful to explicate how Avdagic (2010) theorises the mechanisms leading to SOPC. Consider in particular the term MING*MAAS*MEDC which covers Italy. I have depicted the mechanism associated with this term in figure 3. The boxes in the figure are conditions, mechanism elements, and outcome. The arrows are sufficiency links, indicating that the element at their tail is sufficient for the element at their head. Multiple-tailed arrows indicate that the elements at their tails are jointly sufficient for the element at their head (I signify these using \bullet , see also Goertz and Mahoney, 2005).

[FIGURE 3 ABOUT HERE]

Avdagic’s (2010) argument for the MING*MAAS*MEDC solution term is the following. A Maastricht imbalance (MAAS) creates an economic problem needing a solution. Social pacts become a solution to this problem (denoted PAC.SOL in figure 3) as labour unions are centralised enough to be capable of effectively implementing a social pact but not centralised enough to make the necessary adjustments by themselves (MEDC). Politically, weak governments (MING) need extra-parliamentary political support for to make any solution viable (POL.SUP in the figure). Thus, MING produces a need for political support whereas the combination of MAAS and MEDC produces an economic problem that social pacts could viably address. Subsequently, the combination of this economic problem and the need for political support produces engagement of social partners by governments (ENGAGE). This produces agreement (AGREE) and, finally, social pacts (SOPC) (Avdagic, 2010, 648).

I will not engage deeply with the positive Italian case as my emphasis is on negative cases in set-theoretic MMR. It suffices for my purposes that Regini and Colombo’s (2011) analysis of social pacts in Italy accords well with Avdagic’s expectations. Indeed, Avdagic notes the

'perfect' account of the Italian case (Avdagic, 2010, 648-649). Weak governments had both political and economic reasons to invite social partners to the negotiating table, and they did on several occasions. I return to Avdagic's (2010) study and the negative Swedish case in particular after each of my three 'justifications', which I present one by one in the following three sections.

Inferential Gains

My first argument concerns the inferential gains for set-theoretic MMR from studying negative cases and non-deviant negative cases in particular. The argument proceeds in two steps. First, I argue that, given a properly constituted population or universe of cases, negative cases are of interest simply because they are negative. This is particularly relevant for non-deviant negative cases because QCA provides sufficient conditions for why the cases are negative. Second, I argue that, again given a properly conceived population of cases, the PT component of set-theoretic MMR ought to study how mechanisms in negative cases *fail* to produce a positive outcome.

A proper constitution of the population of cases is important. In particular, researchers need to select negative cases with care. Identifying relevant instances of the negation is often neither obvious nor a one-time choice. Rather, which cases should be analysed is determined in the course of a back and forth between theory and evidence. In this process, the scope of inquiry is limited to *relevant* negative cases (Ragin, 2000, Chapter 2).

A commonplace recommendation in the literatures on both QCA and PT is to restrict attention to negative cases that resemble the positive ones enough to be plausible candidates for the occurrence of the outcome. The reason is what philosophers refer to as 'the Raven Paradox'. Mahoney and Goertz explain:

'The paradox begins with the hypothesis that "all ravens are black." The positive cases which clearly support the hypothesis are black things that are ravens and ravens that are black. The paradox arises from the logical fact that all nonblack, nonraven things also support the hypothesis. We intuitively feel that most – though probably not quite all – nonblack, nonraven things are not very useful in testing this hypothesis' (Mahoney and Goertz, 2004, 653).

In order to arrive at a useful testing ground for finding causes of an outcome (i.e. one without too many nonblack nonraven things), researchers ought to select cases in which the outcome either is present or could plausibly have been present. The constitution of the population of

cases is subject to a 'possibility principle' (Mahoney and Goertz, 2004). This is good practise in QCA as well (Berg-Schlosser and DeMeur, 2009; Ragin, 2000).

The possibility principle is the reason, for instance, why studies of the democratic peace thesis focus on crises that could have been wars (Owen, 1994) and why Skocpol (1979; as also argued by Mahoney and Goertz, 2004, 660) chooses cases of non-revolution where revolution could have happened. Negative cases are only included when the positive outcome could plausibly have occurred but did not.¹²

Within the scope of the possibility principle, the corollary of this view is that the absence of an outcome $\sim Y$ becomes of interest for set-theoretic MMR since the outcome Y is explicitly possible for all cases. That is, there is reason to examine the negative cases *simply because they are negative*. This argument applies in particular to non-deviant negative cases since the $\sim Y$ -solution presents a reason for them being negative. Studying these cases can help the research uncover whether the $\sim Y$ -solution is corroborated by within-case evidence.

Let me take the argument a little further. Because the included instances of $\sim Y$ could have been instances of Y , focus can shift from studying causes of $\sim Y$ to studying why mechanisms producing Y *fail* in the negative cases. Because Y could have emerged, mechanisms pushing to produce Y may be in motion in all cases, and studying negative cases can help illuminate why these processes break down. In this endeavour, non-deviant negative cases are particularly useful. Since the $\sim Y$ -solution proposes why these cases are negative, it can help guide the examination of the reasons why Y fails to emerge.

The example I have already provided from Tannenwald's (1999) study of non-use of nuclear weapons shows how this approach works. Her study of the decision to bomb Hiroshima and Nagasaki emphasise that some actors involved in the decision making process protested the use of nuclear weapons against Japan. However, these voices were eventually ignored because their arguments did not resonate with a 'nuclear taboo' the way similar arguments would later.

Similarly, in her analysis of the 'revolutionary events' in Prussia/Germany in 1848-1850 Skocpol (1979, 144-147) notes how revolutionary upheavals spread across Europe at the time. However, the Prussian/German upheavals failed to become a social revolution. The reason was that they did not result in the dissolution of the army as they had in France, and as they later would in Russia (see also Skocpol and Somers, 1980). Thus, like Tannenwald, Skocpol uses a *failure mechanism* in a negative case to emphasise the importance of the breakdown of state structures for social revolutions to occur.

By studying failure mechanisms in this way researchers can come to a better understanding of mechanisms in both positive and negative cases. This may be particularly useful, for instance, when policy trends or administrative fashions seemingly occur in waves across a range of cases (e.g. Lah and Perry, 2008), or when external political (e.g. Vachudova, 2005) or economic (e.g. Avdagic, 2010) pressures put strains on existing behaviour and institutions across a range of cases.

Turning to the social pact example, the constitution of Avdagic's (2010) population is based on economic conditions. Specifically, the 14 European Union member states she includes are all welfare states subject to constraints from economic internationalisation and the Economic and Monetary Union's convergence criteria (Avdagic, 2010, 629). Thus, given that these factors were present throughout the European Union of the 1990s, the outcome (SOPC) is possible in all cases in question (as well as in some cases she leaves out, see also Regini, 2000, 6-8).

Thus, among the 14 countries Avdagic (2010) studies ~SOCP is of interest as it is puzzling why countries like Denmark or Sweden did not rely on social pacts when facing the challenges from economic internationalisation. Additionally, as an inspection of tables 2 and 3 will show, there is more to gain from an inferential standpoint in selecting Germany or Sweden rather than cases from the Y-solution terms not covering Italy (i.e. selecting Ireland or Finland). The former would be informative on more cases simply because there are more countries like Germany or Sweden.

Beyond this, a study of a negative case can focus on how some European welfare states handle economic internationalisation and convergence criteria without relying on social pacts. Given the pressure from economic internationalisation, studying how Swedish governments handled economic constraints without social pacts is both interesting and informative for the study of social pacts.

In the Swedish case, economic problems rooted in internationalisation were overwhelming in the 1990s and reflected themselves in a Swedish Maastricht imbalance (MAAS). Governments and social partners were hardly passively facing these problems. However, they did not successfully pursue social pacts. Instead, governments responded to the crisis of the Swedish welfare state with austerity. As I will discuss further in coming sections, the social pact solution was attempted in Sweden. Eventually, the attempts failed. The social partners disagreed too much on the solutions to Sweden's economic problems and indeed on the need for and benefits of central bargaining (cf. Huber and Stephens, 1998, 380-382). The disagreement was partly rooted in the

historical dominance of the highly centralised Swedish unions (\sim MEDC), which made them take a tough negotiating stance and made organised business view them as unattractive bargaining partners (Blyth, 2001; see also Baccaro and Simoni, 2008). Hence, the Swedish case can show how Sweden's solution term (MAAS* \sim MEDC) is linked to \sim SOPC. Additionally, the failure mechanism in the Swedish case points to the importance of the social partners' interests aside from the interests of governments emphasised in figure 3. Below, I will return to this argument. For now, let me turn to the theoretical gains.

Theoretical Gains

The theoretical gains I will discuss pertain to a demand for *theoretical consistency*. Specifically, within the confines of a single study it must be demanded that assumptions on human motivation, decision-making, and similar theoretical bases should be the same in all cases. The actual motivating factors may differ across cases, but the assumptions about which factors can possibly motivate must be invariant. In this respect, negative cases constitute a valuable source of differentiated processes, which heighten the risk of uncovering theoretically inconsistent claims. Since outcomes are different, processes must be different, but human beings must remain the same.

Before elaborating on this point, a brief discussion on the nature of mechanisms is worthwhile as it is consequential for how theoretical consistency can be interpreted. I approach mechanisms on three analytical levels: Empirical, theoretical, and ontological. At the empirical level, mechanisms focus on the predictions of how empirical cases behave if causes produce outcomes through specified mechanisms. Much methodological work has already discussed how evidence may be linked to these predictions (e.g. Beach and Pedersen, 2013, Chapters 6 and 7; Bennett, 2008; Mahoney, 2012; Rohlfing, 2012, Chapters 6 and 7). The way in which analyses evaluate evidence is of little consequence for my current purposes. Hence, I leave the empirical level aside for now.

On the theoretical level, mechanisms entail some informed idea of why their different parts relate to each other. Mechanisms detail how conditions shape actors' beliefs, the constraints they face, and ultimately how their behaviour shapes outcomes (see e.g. Hedström and Swedberg, 1996; Hedström and Ylikoski, 2010). As I have argued: To be feasibly producing outcomes through a mechanism in set-theoretic MMR, conditions must be sufficient for the mechanism, which is sufficient for its associated outcome. The theoretical level of the mechanism details the

reasons why these relations occur (Beach and Pedersen, 2013, Chapter 4).

Finally, the theoretical ideas about why a mechanism would operate are underpinned by an ontological level. This level embeds assumptions about how the world 'works', how human beings are motivated and make decisions. Behind theoretical ideas are *invariant principles*, which drive the causal force that makes the mechanism productive (Waldner, 2010). One well-known example of a set of such principles is rational actor models, built on the assumption that human decision making and motivation is based on weighing gains and losses according to exogenous preferences.

Moving from empirical predictions to invariant principles, theoretical consistency becomes increasingly important. At the ontological level, invariant principles within a single study must be just that: Invariant. This raises two potential issues, both of which negative cases can help expose.

First, there is a risk of outright theoretical incommensurability. Social science theories do not all rest on similar assumptions and some might be contradictory (Harvey and Cobb, 2003; Smith, 2003). Of course, the borders between 'paradigms' are porous and plenty of cross-cutting work is possible. However, there are real limits to the compatibility between perspectives. Cross-cutters often need to engage in serious - but often highly informative - tampering with models, ideas, and assumptions (Lichbach, 2009; Sil, 2000; Sil and Katzenstein, 2010).

The study of negative cases can help expose problems with models by forcing them to engage with differentiated processes leading to different outcomes. If commensurability is threatened in the process, there is a need to adjust the model's principles.

However, requiring commensurability does not go far enough. The second potential issue arises, even in commensurate models, when different principles are important for producing different outcomes. The assumptions on human motivation and decision-making must be *identical* in all cases in a study.

As an example, consider a study approaching its cases from the perspective of a modified (bounded) rational actor model. Such a model can permit that an outcome did not occur in a negative case because the attention of core actors were not directed at the interests that would have made them desire that outcome (a process permitted by the models following Simon, 1976). However, this raises the question of why similar actors in positive cases did focus their attention this direction. Actors in both types of cases must face the same limitations on their decision making that makes attention important in the negative case. Alternatively, the model

must provide an account for why the environment in the positive cases facilitated more (or differently) informed decision making than in negative ones.

Thus, invariant principles do not necessarily entail that all outcomes must be accounted for by the same motivational factors. They simply entail that the 'model of man' applied to account for one case, or set of cases, is applied to all cases. The study of negative cases presents a possibility to examine this requirement by differentiating the processes and mechanisms that are studied.

In sum, negative cases provide leverage by allowing the researcher to examine differentiated processes within the frame of one study. This will expose propositions to a heightened, and preferable, risk of uncovering theoretical inconsistency. Precisely because their outcomes diverge, processes at work in negative cases are likely to diverge more from processes in positive cases than processes in different types of positive cases from each other.

The consequence of this second justification is to direct attention to the assumptions underlying accounts of a Y-solution when examining cases from a $\sim Y$ -solution in set-theoretic MMR. The study of negative cases should be attentive to, indeed search for, theoretical disagreement between the account given for instances of Y and that given for instances of $\sim Y$. The study of non-deviant negative cases is particularly helpful. The $\sim Y$ solution suggests reasons why these cases are negative, which means that the $\sim Y$ solution can guide the examination of non-deviant negative cases and make processes in these cases easier to trace.

In her study of social pacts, Avdagic (2010) clearly views the configurations in table 2 as providing the reasons and means for rational potential parties to pursue social pacts in order to find solutions to their problems. Her 'bargaining model' relies on the gains and losses of social partners and, particularly, governments considering social pacts. The conditions in her solution terms shape the actors' strategic situation and consequently their decisions. As indicated, this accords with the actions of the Italian governments and social partners.

However, the case for Sweden is less clear. Swedish governments in the 1990s did pursue social pacts, but they failed. They failed not because labour unions by themselves made the adjustments needed to fulfil the convergence criteria. Nor because governments saw no need for social concertation. Instead, Swedish pact attempts failed because the social partners did not see social pacts as a viable solution to the Swedish Maastricht imbalance. Particularly the Employers' Confederation saw deregulation and flexibility rather than coordination as the solution (Huber and Stephens, 1998; Pestoff, 2002). As noted, the historical dominance of

Sweden's highly centralised organised labour (~MEDC) helped drive this view.

The Employers' Confederation revolted against union dominance throughout the 1980s and early 1990s. As it did, the Swedish corporatist infrastructure eroded (Lindvall and Sebring, 2005). Corporatist bargains were replaced by market friendly guiding principles for policy (Regini, 2000) and by liberal economic ideas championed by the Employers' Confederation (Blyth, 2001; Pestoff, 2002). Hence, when economic problems piled up, some of the central actors did not see social pacts as a viable solution. Social partners could not find common ground in important policy areas (Lindvall and Sebring, 2005). In particular, the Employers' Confederation was rejecting the idea of centralised bargaining. It no longer believed that bargaining served as a vehicle for wage moderation (Huber and Stephens, 1998, 380-382). In Sweden, the *zeitgeist*, at least until 1998, was 'hostile to the very idea of social negotiations' (Pestoff, 2002, 303).

These observations raise interesting questions for both positive and negative cases. Most importantly, the evidence that the Swedish Employers' Confederation's beliefs and ideas were hostile to social pacts raises questions: Were Swedish pacts halted in their infancy because the *preferences* of the Swedish social partners were different from the preferences of their Italian counterparts? Did different preferences rather than different strategic situations result in different outcomes? Why did preferences diverge across countries?

One framework useful to understand these observations is Culpepper's (2008) 'common knowledge' model. This model makes bargaining partners' views on what will further their aims endogenous to their ideas about how the economy operates. Preferences are no longer fixed. Instead, they can vary in different settings.

The common knowledge model and Avdagic's (2010) perspective are not theoretically incommensurate. Nevertheless, the endogenous preferences proposed by Culpepper (2008) suggest a need to tweak the bargaining model. If ideas influence bargaining preferences in Sweden, they must potentially be able to shape preferences everywhere including in Italy (for evidence that they did shape preferences in Italy, see Culpepper, 2008, 18-26).

My point with respect to negative case selection is this: Avdagic's (2010) argument may account for the Italian case. However, the evidence from the negative Swedish case suggests an additional reason the Italian governments and social partners could agree on social pacts. Their views on how the economy operated aligned in a way their Swedish counterparts' did not.

Hence, Avdagic's (2010) argument could fruitfully be supplemented by including how social partners come to share common views on potential solutions to economic problems (see

Culpepper, 2008). This would help account for why Swedish social partners could not find common ground, and for why the Italian social partners could. Thus, endogenising preferences adds a theoretical layer to the analyses of *both* positive and negative cases. It helps refine the mechanism I depicted in figure 3.

In the subsequent section, I proceed to the most consequential justification for negative case selection in set-theoretic MMR: The logical gains.

Logical Gains

As the final justification I argue that PT analysis of negative cases can ensure that the mechanisms producing an outcome Y and its absence, $\sim Y$, are not illogically similar. I will argue that mechanisms leading to different outcomes cannot be the same. Furthermore, extending this point, I will argue that only a limited class of elements of a mechanism suggested to produce a positive outcome can be present in a negative case. Specifically, no element proposed to directly or indirectly produce outcomes in a positive case must be present in a negative case.

[FIGURE 4 ABOUT HERE]

To fix ideas, consider the hypothetical mechanisms depicted in figure 4. In panel (a), I depict a simple causal chain connecting a condition A to an outcome Y through a mechanism M_a comprised of two elements m_{a1} and m_{a2} . Hence, this mechanism holds that A is sufficient for M_a , which is sufficient for Y (see Rohlfing, 2012, 152). Or, including the individual elements, A is sufficient for m_a , which is sufficient for m_b , which is sufficient for Y .

The mechanism I illustrate in panel (b) is somewhat more complex. It links the combination of two conditions B and C to Y through a mechanism M_b . If this mechanism's conditions B and C are to produce their associated outcome Y , the following must hold:

1. B is sufficient for m_{b1}
2. C is sufficient for m_{b2}
3. m_{b1} and m_{b2} are jointly sufficient for m_{b3}
4. m_{b2} is sufficient for m_{b4}
5. m_{b3} and m_{b4} are jointly sufficient for Y

I will use these mechanisms to illustrate the logical gains from studying negative cases in two steps. First, I will make the argument looking at mechanisms as wholes (i.e. M_a and M_b). Subsequently, I will unpack the mechanisms and analyse their mechanism elements.

The basic driver of the logical gains I will discuss is avoiding simultaneous subsets. Any condition, conditions, or mechanism sufficient for an outcome Y cannot also be sufficient for the absence of that outcome $\sim Y$ (Schneider and Wagemann, 2012, 237-244).

The first conclusion I will draw from this is the following: The same mechanism cannot be operating in both cases of Y and $\sim Y$. If the mechanism in panel (a) of figure 4 is correct, two conclusions follow. First, A cannot be featured in cases of $\sim Y$. The reason is that, if A is a feature of a case and the mechanism in panel (a) is correct, A would produce M_a , which would produce Y rather than $\sim Y$.

Second, M_a cannot be featured in cases of $\sim Y$ either. Because of asymmetry, this does not necessarily follow from the prior conclusion. The presence of A will ensure the presence of M_a . But M_a can occur for other reasons than A . However, if the mechanism is correct, whenever M_a occurs, Y occurs. Hence, M_a cannot occur in negative cases.

When I discussed theoretical gains, I noted that the invariant principles of a mechanism must be identical across positive and negative cases. The point I am currently making is that the reverse holds for another level of the mechanism. At the empirical level, mechanisms in positive and negative cases *cannot* be identical. If a study finds that they are, it follows that the mechanism proposed in the study is incorrectly specified. The logical gains of studying negative cases are acquired from examining empirically whether mechanisms that must logically be different are, in fact, different.

Next, I unpack mechanisms into their constituent parts. This expands the possibilities for simultaneous subsets considerably. Consequently, the gains from negative case selection are expanded as well. Consider the mechanism in panel (b) of figure 4. This mechanism, if correct, entails that the conjuncture of B and C should not occur in negative cases. If B and C were both present, they would produce M_b , which would produce Y rather than $\sim Y$. Additionally, as I have argued, the proposed mechanism entails that M_b and $\sim Y$ should not be observed in the same case.

However, the mechanism entails a lot more. To see exactly what, move backwards (i.e. against the direction of the arrows) in the figure and apply the same logic as before. The conclusion for panel (b) of figure 4 is threefold. First, m_{b3} and m_{b4} cannot both be present in

negative cases. If they were, they would produce Y rather than $\sim Y$. Either m_{b3} or m_{b4} may be present, since they are jointly rather than individually sufficient for Y (as indicated with the \bullet). However, both cannot be present simultaneously if the mechanism is correct. Second, following the same line or argument, maximally one of m_{b1} and m_{b2} can be present in negative cases. If both were present, they would jointly produce m_{b3} , m_{b2} would produce m_{b4} , and m_{b3} and m_{b4} would jointly produce Y rather than $\sim Y$. Finally, as already noted, maximally one of conditions B and C can be present in negative cases if the mechanism is correct.

Thus, only a limited class of mechanism elements can be observed in negative cases if a mechanism proposed to produce an outcome is true. The logical gains of negative case selection lie in the provision of an opportunity to find if mechanism elements proposed to link a solution to an outcome are present in negative cases. Additionally, if some of these elements are present, negative case selection gives an opportunity to find whether their presence in the negative case is permissible by the mechanism proposed to produce Y .

Applied researchers sometimes already use this logic. Again, Skocpol's (1979) discussion of the Meiji Restoration provides an example. Like in pre-revolutionary France, foreign military pressure led to a major reform of Japanese state and society and to a major political crisis. Yet, Japan did not succumb to a social revolution. As I mentioned in the introduction, the Meiji example highlights that political crises alone cannot account for social revolutions. If they could, Japan would have experienced such a revolution. Instead, the state and peasant rebellions need to be taken into account (other examples are given in Skocpol and Somers, 1980).

What does one do when encountering a simultaneous subset in positive and negative cases? I will propose two ways forward. The first is to reject the proposed mechanism. Recognising that the mechanism cannot be correct, the researcher may choose to abandon or drastically alter it.

The second way forward is to retain the mechanism but alter it to resolve the simultaneous subset problem. Recall that, when several elements of a mechanism are needed to produce another element or outcome (marked \bullet in figure 4), one of the producing elements *can* be featured in negative cases. This provides an alternative to rejecting the proposed mechanism.

For instance, a researcher believes the mechanism in panel (a) of figure 4 is correct but finds m_{a1} in a case of $\sim Y$. A simultaneous subset occurs, implying that the mechanism is incorrect. But studying a positive case further, the researcher finds that A initiates two mechanism elements m_{a1} and m_{a3} that together produce m_{a2} . If m_{a3} is not found in the negative case, the new

mechanism can be correct, provided of course that it is theoretically plausible and supported by empirical evidence.

An alternative solution builds on the inferential gains I have discussed. A study of a negative case may find that $\sim m_{a3}$, when combined with m_{a1} , makes the mechanism depicted in panel (a) fail to produce m_{a2} . This can give rise to the same conclusion: m_{a1} and m_{a3} may jointly produce m_{a2} , which then produces Y. If this solution is pursued, non-deviant negative cases are particularly useful, since the $\sim Y$ -solution can help guide the search for additional mechanism elements.

Thus, I propose two reactions to uncovering that mechanism elements in cases featuring Y and $\sim Y$ are illogically similar. Either reject the proposed mechanism or add elements to it. Adding elements works because, as Sartori (1970) famously noted, increasing the intention of a concept decreases its extension. In other words, adding attributes to a concept makes it apply to fewer empirical instances. The same is true of mechanisms (cf. Falleti and Lynch, 2009, 1149). Adding elements to a mechanism means that the mechanism will operate in fewer cases. If doing so excludes negative cases from being covered by mechanism elements that will produce the outcome, the simultaneous subset problem is resolved.

In this way, PT in negative cases can either reject or refine conclusions about mechanisms in positive cases. PT in negative cases can ensure that the mechanisms proposed to produce the outcome and its absence are not illogically similar. As my discussion has shown, the consequence of this justification is that studies of negative cases should focus, at least in part, on the mechanisms proposed to produce the outcome in positive cases. The purpose of this is to ensure that negative cases feature neither the whole mechanism proposed to produce the outcome, nor elements of it that would produce Y if the proposed mechanism were correct.

Let me return one last time to the social pact example. As I noted in the third section, the mechanism Avdagic (2010) proposes links Italy's solution term MAAS*MEDC*MING to SOPC relies heavily on the economic and political incentives for governments to engage social partners. As I have indicated, the Italian case corroborates this link. On several occasions, minority governments sought to address Italy's economic problems by facilitating negotiations between employer and employee organisations and reach social pacts (Regini and Colombo, 2011).

The problem is that governments in Sweden also sought to facilitate this type of negotiations.¹³ Looking back at the argument as I depict it in figure 3, neither agreements (AGREE) nor government engagement with social partners (ENGAGE) should not be observed in neg-

ative cases. Additionally, negative cases may feature maximally one of the elements 'weak governments needing extra-parliamentary support' (POL.SUP) and 'an economic problem that a social pact can plausibly address' (PAC.SOL). However, government engagement of social partners (ENGAGE) did occur in Sweden.

Though the Swedish unions had been weakened as the corporatist system weakened, they remained more than intermediately centralised (\sim MEDC). Yet, rather than expecting unions to solve Sweden's economic challenges on their own accord, the Social Democratic governments worked hard on getting social partners to agree on a social pact in 1996, 1998 and 2001. All three times the negotiations ultimately collapsed as a result of rejections by unions or organised business (Hamann and Kelly, 2011, 94-96).

Governments in Sweden, as in Italy, sought deals with the social partners. They did invite social partners to partake in negotiations (ENGAGE), and in 1998-1999 struggled for months behind the scenes to get the failing pact negotiations back on track. But eventually they failed (Pestoff, 2002, 303-305).

With this observation in hand, the argument that governments' political (POL.SUP) and economic (PAC.SOL) incentives to engage social partners suffice to result in social pacts (SOPC) does not hold. The argument faces the challenge that governments did engage social partners also in cases where social pacts did not occur. Hence, this engagement by itself cannot be the mechanism linking a solution term to SOPC. If it were, social pacts would have occurred in Sweden as well.

In this instance, the problematic observation suggests a plausible way forward. The proposed argument (in figure 3) does not include the negotiations themselves but accounts only for their initiation. The reason Sweden did not experience social pacts in the 1990s was not the unwillingness of governments to facilitate negotiations. It was the unwillingness of the Swedish social partners to reach a national level compromise. Hence, adding a mechanism element that considers the actual negotiations is the natural way to resolve the logical problem that government engagement occurred in both positive and negative cases.

One plausible solution lies in considering internal cohesion of the organisationally centralised Swedish unions. In Sweden divisions within organised labour prevented social pacts from emerging (see Iversen, 1996). For wage bargaining in the 1990s in particular, internal dissent from the export sector was important. From 1996, this sector had engaged in sector-level agreements, which both sector level employer and employee organisations fought to protect from national

level bargains between peak organisations (Thelen and Kume, 2006, 14-21).

By contrast, Italian union leaders met resistance to pacts in the early 1990s. The resistance was not grounded in the defence of already established agreements. Instead, radical elements in the unions refused to cooperate with business and government altogether. This resistance was overcome through member consultations and internal democracy, partly as an attempt by the unions to secure their continuing representation in the system (Baccaro and Lim, 2007, 33-34; Regini and Colombo, 2011, 119-123). In the more centralised Swedish unions (\sim MEDC), this solution was not viable. Instead, diverse organised employee groups defended different interests and made internal agreement in organised labour difficult (cf. Iversen, 1996).

These observations show how studying the negative Swedish case can refine claims about positive cases such as Italy. Specifically, the observations direct attention to the interests of the social partners and how these interests are shaped by the internal cohesion of organised labour (see also Baccaro and Lim, 2007). The argument linking MAAS*MEDC*MING to SOPC can take account of this by including an 'internally coherent unions' element in the mechanism. The revised proposition then holds that government engagement (ENGAGE) with social partners produce agreement (AGREE) and SOPC only in combination with internally coherent unions. Hence, a study of the negative Swedish case can refine Avdagic's (2010) conclusions on positive cases from her article.

I will end the empirical discussion by emphasising that I have focused on social pacts only as an example. None of the theoretical perspectives I have discussed are new. They have been discussed by Culpepper (2008), Baccaro and Lim (2007), and others. But they are not incorporated in Avdagic's (2010) interpretation of her fuzzy-set QCA results.¹⁴ I have used the non-deviant negative Swedish case to argue that cases like it can enrich Avdagic's (2010) framework and permit it to give an improved account of both positive and negative cases. However, my main point is methodological as my conclusions will reflect.

Conclusions

A range of analytical gains may be acquired from PT in negative cases in set-theoretic MMR. This is true even when no suitably similar match cases exist. Specifically, negative case selection and PT in selected negative cases brings insight into the mechanisms driving both the outcome and its absence. The PT component of a set-theoretic MMR design can benefit significantly

from negative case selection by improving proposed mechanisms to make them more consistent theoretically and more congruent with empirical evidence. Thus, I propose that examination of negative cases, and of non-deviant negative cases in particular, is both useful and consequential for research combining QCA and PT.

I have presented three arguments, or 'justifications', for negative case selection: First, inferential gains can be achieved by examining non-deviant negative cases for their own sake and by studying how mechanisms producing outcomes break down. Second, theoretical gains can be achieved by exposing the theoretical basis of mechanisms proposed to produce the outcome to differentiated processes and, consequently, a heightened risk of theoretical inconsistency. Finally, logical gains can be achieved from the insurance that the mechanisms featured in positive and negative cases are not similar at a level at which they cannot be if they are correctly specified.

There are multiple consequences of these gains. First, uncovering a failure mechanism can pose questions about the mechanism producing the outcome. Second, uncovering theoretical inconsistency can reveal that a theoretical model overlooks an important factor needed to understand why positive and negative cases diverge. Finally, uncovering that mechanisms in positive and negative cases are illogically similar may lead to rejection of a mechanism or to a refinement of it by adding elements that distinguish positive and negative cases.

Reconciling a mechanism proposed to produce an outcome with questions raised by negative cases may often entail searching for additional relevant explanations or mechanism elements. It is often necessary to engage in some examination beyond the initially hypothesised mechanism to arrive at answers that work. Depending on whether the answers introduce new conditions or new mechanism elements, the QCA part of a set-theoretic MMR design may need revisiting. Thus, negative case selection can force another round of dialogue between theory and evidence throughout both stages of the research design. This dialogue brings the analysis closer to truly consistent causal claims. Though additional work is indubitably involved, set-theoretic MMR should not permit itself to forgo the gains from negative thinking.

Notes

¹By asymmetry, I mean simply that set-theoretic arguments do not place symmetric restrictions on expected patterns in data. The presence of a sufficient condition entails the presence of the outcome but the absence of the same condition does not entail the absence of the outcome. Similarly, the absence of a necessary condition entails the absence of the outcome but the presence of the same condition does not entail the outcome.

²By direct analytical leverage I mean leverage gained from comparative control. In particular, comparing across configurations of positive and negative cases only lends this leverage under restrictive circumstances discussed in the main text.

³This does not mean there is a flaw in existing arguments. I simply propose arguments with a different purpose. Specifically, the gains I will highlight serve not to identify causes but to dis-confirm and refine mechanisms.

⁴Negative cases may, of course, also be useful once theory-building PT has resulted in a mechanism that the researcher wishes to subject to further examination.

⁵The same principles could apply to the study of necessity by inverting solutions and outcomes and studying the contrapositive. Studying necessity would then mean studying how the absence of a necessary condition is sufficient for the absence of an outcome. Following established case selection procedures (Schneider and Rohlfing, forthcoming), this would mean selecting negative cases as a first choice.

⁶One might argue that mechanisms contributing to, rather than producing, outcomes would not be captured by these arguments. However, in the context of set-theoretic MMR mechanisms must show how sufficient conditions produce outcomes.

⁷In set-theoretic MMR using crisp sets, types 1 and 2 collapse into one. This has no bearing on the points I make in the main text.

⁸Avdagic (2010) actually performs a series of fuzzy set analyses, reporting only those deemed best by substantive criteria and parameters of fit. For brevity's sake, I limit myself to the best performing analysis. Measurement and calibration are discussed extensively in Avdagic (2010), where fuzzy membership scores and truth tables can also be found. The full data matrix used for the analyses is available in csv format on the COMPASS website.

⁹Tables 2 and 3 depict *intermediate solutions*. These are solutions where theoretically informed counter-factual cases are used to minimize the solutions' expression (see Ragin, 2008).

¹⁰The principle states that, when selecting a single typical case for set-theoretic MMR, one should aim to maximise the case's membership in both solution and outcome. The argument is that the mechanism connecting solution, or solution term, and outcome will be clearest in these cases.

¹¹The recommendation to avoid cases with joint coverage is proposed to avoid indeterminate conclusions if a proposed mechanism turns out not to be operating in a typical, jointly covered case.

¹²The possibility principle is somewhat similar to designs matching cases to achieve control through comparisons. But the principle's purpose is not control but ensuring that irrelevant information from cases where the outcome is implausible does not enter into our inferences (Mahoney and Goertz, 2004).

¹³As the reader will recognise, the logical gains from studying Sweden in the context of Avdagic's (2010) study means more than contrasting it with the mechanism proposed to work in Italy and countries like it. Since there are multiple solution terms leading to SOPC (see table 2), the Swedish case can only feature a limited class of mechanism elements from the mechanisms proposed to link *any* of these terms to SOPC. Additionally, since multiple terms lead to \sim SOPC (see table 3), finding that the Swedish case does not result in simultaneous subsets for any of these terms does not settle concerns that cases on other terms leading to \sim SOPC may feature mechanism elements that do result in simultaneous subsets. To fully guard against such subsets, we ought to study cases from all terms in the solutions for both SOPC and \sim SOPC. However, as I am concerned with demonstrating that selecting non-deviant negative cases is useful, I focus only on one in the main text. Doing so is sufficient to

demonstrate my point.

¹⁴To be fair, Avdagic has expanded her model considerably elsewhere, including expansions in some of the directions I have discussed (see Avdagic, 2011).

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Table 1: Overview of the argument

Justification	Basic argument	Recommendation (consequence)
Inferential	To understand processes in negative cases we need to study them in cases where Y could have occurred	Focus on failure mechanisms in processes leading to $\sim Y$
Theoretical	The theoretical models leading to Y and $\sim Y$ must include the same fundamental elements	Search for theoretical disagreement in processes leading to Y and $\sim Y$
Logical	The mechanisms leading to Y and $\sim Y$ cannot be illogically similar	Study elements of the mechanism leading to Y in negative cases

Table 2: Avdagic's SOPC-Solution

Solution for SOPC	Consistency	Raw Coverage	Unique Coverage	Cases with Membership > .5
MAAS*MEDC*MING +	.961	.423	.423	Portugal, Italy, Spain
~MAAS*UNEM*MEDC* ~MING +	1.00	.154	.154	Ireland
~MAAS*UNEM* ~MEDC*MING	1.00	.192	.192	Finland

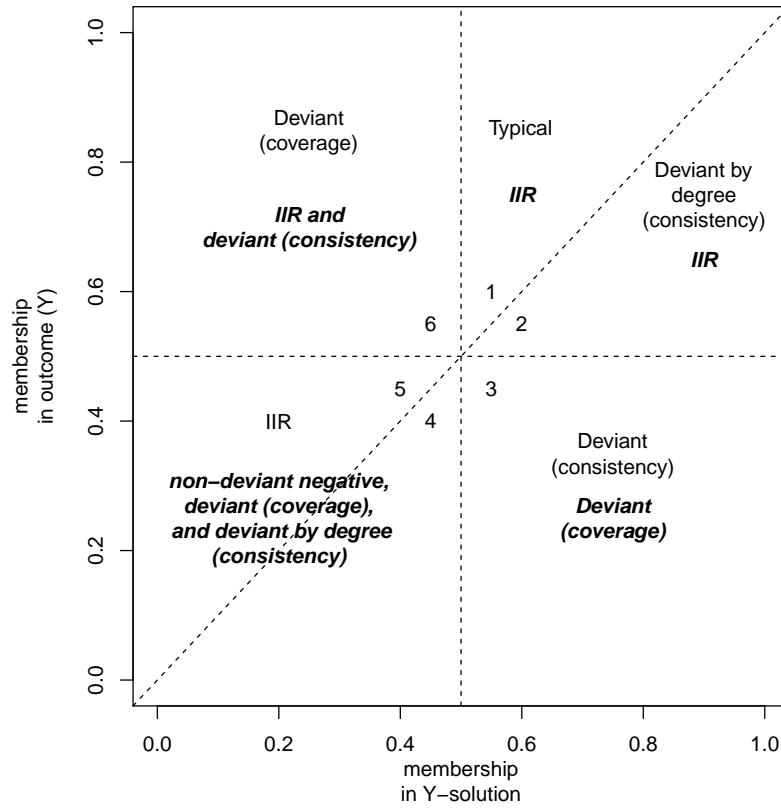
Conditions: {MAAS,UNEM,MEDC,MING}, inclusion cut-off=.8. There are no deviant cases.

Table 3: \sim SOPC-Solution for Avdagic's Data

Solution for \sim SOPC	Consistency	Raw Coverage	Unique Coverage	Cases with Membership $> .5$
\sim MEDC* \sim MING +	.910	.585	.114	Germany, Austria ^{jc} , the Netherlands ^{jc} , Belgium ^{jc} , France ^{jc} , United Kingdom ^{jc}
MAAS* \sim MEDC +	.933	.636	.165	Austria ^{jc} , the Netherlands ^{jc} , Belgium ^{jc} , France ^{jc} , United Kingdom ^{jc} , Sweden
\sim MAAS* \sim MEDC* \sim MING	1.00	.114	.114	Denmark

Conditions: {MAAS,UNEM,MEDC,MING}, inclusion cut-off=.8. ^{jc} marks joint coverage. Greece is deviant for coverage.

Figure 1: Enhanced XY Plot with Positive and Negative Case Types



Y-solution case types in normal font. ~Y-solution case types in bold. Case types in zones 4 and 5 are identical.

Figure 2: Identifying Non-Deviant Negative Cases

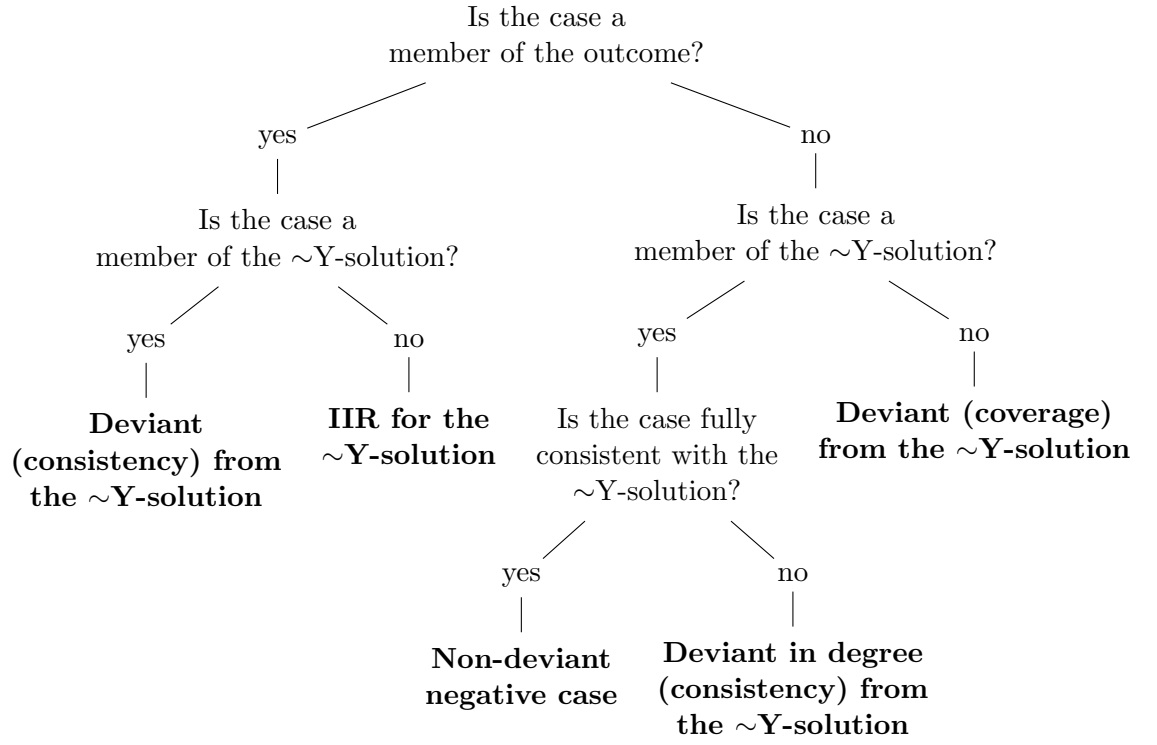
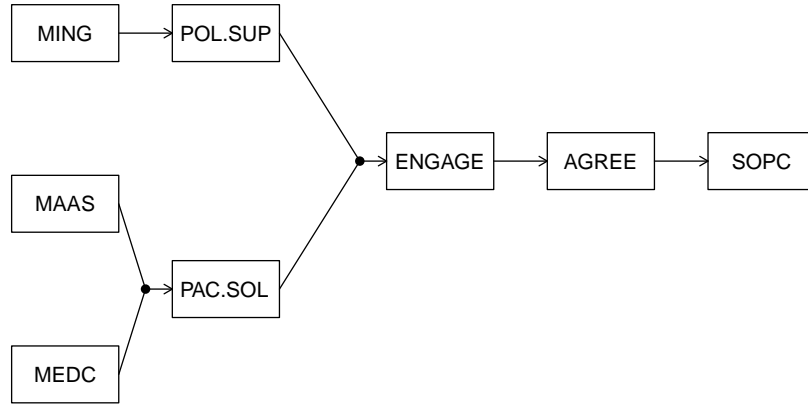


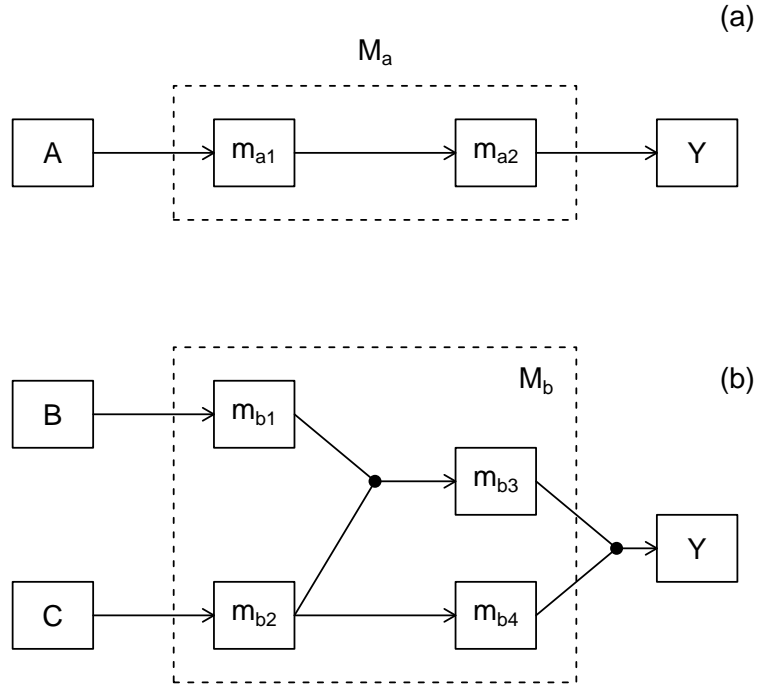
Figure 3: Avdagic's Argument



MING: minority government (condition). MAAS: Maastricht imbalance (condition). MEDC:

Intermediary union centralisation (condition). POL.SUP: Need for extra-parliamentary political support (mechanism element). PAC.SOL: Social pacts possible solutions to economic problems (mechanism element). ENGAGE: Governments engaging social partners in pact negotiations (mechanism element). AGREE: Governments and social partners agree on a social pact (mechanism element). SOPC: The use of social pacts (outcome).

Figure 4: Some Exemplary Mechanisms



A, B and C are conditions, Y is an outcome. m_i s are mechanism elements. Whole mechanisms are in dashes boxes for clarity and signified by M_i . Single and multiple-tailed arrows indicate sufficiency as discussed in the main text.