

On ‘Consistent’ Poverty

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Abstract

The measurement of poverty as ‘consistent’ poverty offers a solution to one of the primary problems of poverty measurement within Social Policy of the last three decades. Often treated as if they were synonymous, ‘indirect’ measures of poverty, such as low income measures, and ‘direct’ measures, such as indices of material deprivation, identify surprisingly different people as being poor. In response to this mismatch, a team of Irish researchers put forward a measure which identified respondents in as being in poverty when they experienced *both* a low standard of living, as measured by deprivation indicators, and a lack of resources, as measured by a low income line. Importantly, they argued that the two measures required an equal weight.

In this paper, I present a reconsideration of the consistent poverty measure from both conceptual and empirical perspectives. In particular, I examine the claim that low income and material deprivation measures should be given an ‘equal weight’. I argue that, from a conceptual perspective, the nature of the indicators at hand means that a deprivation-led measurement approach might be understood to align with the definition of poverty which Nolan and Whelan outline and, from an empirical perspective, that it is the material deprivation measure – and not the low income measure – which is particularly effective in identifying individuals at risk of multiple forms of deprivation.

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Introduction

The measurement of poverty as ‘consistent’ poverty offers a solution to one of the primary problems of poverty measurement within Social Policy of the last three decades. Often treated as if they were synonymous, ‘indirect’ measures of poverty, such as low income measures, and ‘direct’ measures, such as indices of material deprivation, identify surprisingly different people as being poor. This presents a measurement problem, because it raises the question of whether one should use low income or material deprivation data in identifying people in poverty, but also a conceptual one, because the Townsend’s oft-quoted definition of poverty (1979) assumes a straight-forward relationship between resources and deprivation. Townsend’s influential definition was that:

‘Individuals, families and groups in the population can be said to be in poverty when they lack the resources to obtain the types of diet, participate in the activities and have the living conditions and amenities which are customary, or at least widely encouraged or approved, in the societies to which they belong. Their resources are so seriously below those commanded by the average individual or family that they are, in effect, excluded from ordinary living patterns, customs and activities’ (1979: 31).

The crucial distinction between direct and indirect measures of poverty was drawn most clearly by Ringen (1987; 1988), who noted that low income and material deprivation reflected not just two distinct measures, but, rather, two distinct concepts: direct concepts which focussed on cases where living standards fall below some specified threshold, and indirect concepts which conceptualised poverty as occurring when household resources fall below an identified minimum.

In his important critique, Stein Ringen (1987; 1988) argued that typical low income measures of poverty were not aligned with the Townsendian definition: the mismatch between low income and material deprivation measures was such that low income measures alone could not be assumed to capture exclusion from one’s society (e.g. 1987: 160). If the concept of poverty referred *both* to respondents’ standard of living and to their resources, then a measurement approach which incorporated both low income and material deprivation indicators was required (1987: 162; 1988: 361-6).

A team of Irish researchers at the Economic and Social Research Institute (hereafter ESRI) in Dublin drew on this critique and advocated a ‘consistent’ poverty measure which identified the poor as being those respondents who experienced *both* a low standard of living, as measured by deprivation indicators, *and* a lack of resources, as measured by an income poverty line (Callan *et al.*, 1993; Nolan and Whelan, 1996). They conceded the Townsendian concept of poverty, rewording his definition as ‘exclusion from the life of the society owing to a lack of resources’ (Nolan and Whelan, 1996: 2), and sought to offer a measurement approach which was aligned

with this conceptualisation. The context in which this ‘consistent’ poverty measure was put forward was one of questioning whether poverty analysis could rely on ‘income alone’ in identifying the poor (Callan *et al.*, 1993: 142; Nolan and Whelan, 1996: 3, see also Ringen, 1987: 363), or whether indicators of material deprivation should also be incorporated into the measurement exercise.

The purpose of this paper is to reconsider the consistent poverty measure from both conceptual and empirical perspectives. In particular, I examine the claim that low income and material deprivation measures should be given an ‘equal weight’ in aligning measurement with conceptualisation (see below). In doing so, I assess the original justifications for the measure put forward by the ESRI team, and analyse data from the British Household Panel Survey in order to examine the consistent poverty measure empirically. This reconsideration is timely given Nolan and Whelan’s (2011) recent book, *Poverty and Deprivation in Europe*, in which they advocate the use of both low income and material deprivation measures in analysing poverty across Europe, and because the European Union’s headline poverty target in its Europe 2020 strategy employs both low income and material deprivation measures.

In the next section, I outline the scope of the enquiry presented in this paper, and discuss the assumptions which are made. In the subsequent section, I discuss the original justifications for the consistent poverty measure put forward by the ESRI team and ask whether the nature of the indicators at hand points toward the equally-weighted balance between low income and material deprivation indicators that they suggest. I then discuss the data from the 2006/7 wave of the British Household Panel survey which I draw on in the paper and, in the penultimate section, present empirical evidence about the relationship between low income and material deprivation measures, and the relationship between respondents’ consistent poverty classification and forms of deprivation which we may expect *a priori* to be related to material poverty. The paper closes with a concluding discussion and includes suggestions for a future research agenda.

Scope of enquiry

There are a number of ways one might approach a consideration and critique of the consistent poverty measure. One could argue that current income is not a good measure of household resources both over time (because a point-in-time snapshot does not necessarily reflect longer-term holdings), as well as at any one point in time (because current income data in household surveys falls short of accounting for the full range of households resources including, for example non-cash income from the state, employers or informal sources)(e.g. Townsend, 1979; Jenkins, 2011).

Or, one might claim that the deprivation indicators used to capture exclusion from society cannot support the assumptions required for them to be used as a measure of poverty. Berthoud and Bryan (2011: 137, emphasis in original) argue that while the use of indicators of material deprivation to calibrate an income poverty line (i.e. the

method of Townsend, 1979) is relatively unproblematic, ‘using an index [of material deprivation] as *an actual measure* of poverty requires a very strong set of assumptions’, principally related to their coverage over ‘the whole range of areas of consumption’. In practice, large-scale surveys tend to collect data on a relatively small set of material deprivation indicators, and the indicators themselves display a high degree of path dependency over time (Jenkins, 2011: 27).

Alternatively, one might argue that ‘exclusion from the life of society’ is just one of the important dimensions for poverty analysis. There is, at present, a shift towards understanding poverty as a multidimensional phenomenon (Nolan and Whelan, 2011: 5), and one might argue that while exclusion from the life of society is *one* of the important dimensions for poverty analysis, a broader range of dimensions must be considered (e.g. Hick, 2012).

However, the approach I adopt here is rather different: in this paper, I attempt to consider the merits of the consistent poverty measure in the terms put forward by Nolan and Whelan (1996) themselves – namely, as a pragmatic, non-ideal measure which considers whether and how to incorporate information from both income and deprivation indicators in the measurement of poverty. Thus, in what follows, I largely restrict my remarks to addressing this question, and for the most part treat income-as-we-currently-measure-it and deprivation-as-we-currently-measure-it as reasonable measures of the constructs of interest, though I harbour doubts in both cases. In the concluding discussion, I relax these assumptions somewhat and try to situate the findings from the preceding analysis within a broader discussion about the conceptualisation and measurement of poverty.

Conceptual analysis

The ‘consistent’ poverty measure was the result of an attempt to construct a measure of poverty which was ‘more consistent with the most commonly cited definition of poverty [that of Townsend] than conventional methods’ (1996: 2), a definition Nolan and Whelan re-worded as ‘exclusion from the life of the society owing to a lack of resources’ (Nolan and Whelan, 1996: 2). Consistent poverty is, thus, a distinctive approach to *measurement*, rather than a novel conception, and was inspired by Ringen’s emphasis on aligning conceptualisation and measurement.

The reason alignment was so important was not simply because of a desire for theoretical purity, but because, in practice, indirect and direct measures were found to identify substantially different people as being in poverty. This mismatch meant that a low income measure on its own could not be assumed to capture exclusion because ‘if poverty means, in any sense, exclusion from one’s society, it must be visible in the way the poor live.’ (Ringen, 1988: 355). Nolan and Whelan claimed that while Ringen’s critique had ‘touched a nerve’ amongst poverty analysts, it ‘has not in our view been taken seriously enough, nor has it drawn the substantive response we believe it merits in terms of a programme of research’ (1996: 2).

Justification for the 'consistent' poverty measure

Throughout *Resources, Deprivation and Poverty*, Nolan and Whelan emphasise the two sides of the concept of poverty, 'as *exclusion* arising from a *lack of resources*' (1996: 115, emphases in original). If poverty is defined in this way, they argue, then 'the poor must be therefore identified using both a consumption/deprivation and an income criterion: exclusion is to be measured directly, together with an income criterion to exclude those who have a low standard of living for reasons other than low income' (1996: 115-6). A dual low income – material deprivation approach would align conceptualisation and measurement because the use of low income and material deprivation indicators would reflect the two sides of the poverty concept.

A dual criterion is needed, they argue, because the mismatch between low income and material deprivation is such that relying on low income alone to identify those 'excluded because of a lack of resources is not satisfactory' while relying on deprivation indicators alone is 'equally problematic' (Nolan and Whelan, 1996: 2). Thus, the central question becomes how to make use of deprivation and income information in order to construct a measure of poverty (1996: 117-8) which is aligned with the definition outlined.

However, Nolan and Whelan went further that to argue that a dual criterion was required (as had been concluded in the earlier Callan *et al.*, 1993: 169) – they also argued that the two criteria should be given *an equal weight*. On this basis, they distinguished themselves from both Townsend (1979) and Mack and Lansley (1985), who used information from both income and deprivation indicators in different ways. Townsend had used deprivation indicators to calibrate an income poverty threshold, and this income criterion alone was used to identify people in poverty. Nolan and Whelan claimed this was 'unsatisfactory because a substantial proportion of those below any such line are not experiencing such deprivation' (1996: 116). On the other hand, Mack and Lansley had measured poverty directly using deprivation indicators, although they also presented a number of 'adjustments' to their headline measure, one of which was to exclude respondents on "high incomes" – in practice, respondents with incomes in the top half of the distribution (see Mack and Lansley, 1985: 175-185). Again, this is found to be unsatisfactory by Nolan and Whelan because 'a substantial proportion of those reporting (what they consider to be enforced) deprivation are not on low current incomes' and because the 'imposition of additional income criteria is rather *ad hoc* and still gives more weight to deprivation scores than income in identifying the poor' (1996: 116). In order for measurement to align to their definition of poverty as 'exclusion from society owing to a lack of resources' (Nolan and Whelan, 1996: 2), an equal weighting of the low income – material deprivation criteria was, they claimed, required.

Aligning measurement with conceptualisation

In advocating an equal weight for income and deprivation information in identifying 'exclusion arising from a *lack of resources*' (1996: 115), a clear division of labour between the indicators was intended: the task of identifying exclusion was charged to the deprivation indicators, while the income criterion would be used to separate those

whose exclusion was because of a lack of resources from those who were excluded for other reasons.

In fact, the two-part nature of indicators of material deprivation arguably cover Nolan and Whelan's revised definition of poverty on their own, since in all dedicated poverty surveys since Piachaud's (1981) critique of Townsend's *Poverty in the United Kingdom* respondents have been asked not only whether certain deprivation items are absent, but also – where they are – whether this absence is due to a lack of resources or because of choice. Thus, the indicators of material deprivation demonstrably do refer to *both* exclusion *and* to a lack of resources.

The division of labour between low income and material deprivation measures which Nolan and Whelan suggest was originally advocated by Ringen, who noted that 'exclusion from one's society...is covered by the criterion of low consumption [i.e. material deprivation]. By adding, in addition, the criterion of low income, we exclude from the poverty category those who have a low standard of consumption for reasons other than low income' (1988: 361).

Curiously, however, Ringen's 1988 paper does not cite Mack and Lansley's (1985) major study, which was the first to adopt the two-part structure containing the 'enforced lack' criterion (and thus containing both sides of the definition), following Piachaud's (1981) critique. His 1987 book does cite Mack and Lansley, but not in respect of this important methodological development.

The ESRI team recognised the two-part measurement approach of material deprivation indicators meant both sides of the definition had, on the face of it, been addressed, but they claimed that to allow respondents themselves to decide whether the absence of items was because of a lack of resources, on the one hand, or because of choice, on the other, was to refer to 'individual rather than societal standards to what constitutes 'enforced'' (1996: 120, see also Callan *et al.*, 1993: 155). This distinction between individually- and societally-defined enforcement is of course important, since we may not wish to consider respondents as being poor where they claim an enforced lack of material deprivation items but also appear to possess significant resources – for example, by reporting high incomes. The challenge, then, is to provide a societal standard of income adequacy: a level of income or resources below which exclusion, as identified by respondents via deprivation indicators, may be said, by society, to be 'enforced'.

The problem is that an arbitrary low income threshold, set at 60 per cent of median income (or similar) does not represent a societal measure of *adequacy*. This has, of course, long been recognised (including by the authors themselves, see Callan *et al.* 1993: 157). Arbitrary low income statistics relate to *lowness* of income rather than *inadequacy* of income. This is not to suggest that the imposition of an income criterion might not be required. But we must be clear about the nature of the measures at our disposal: a rudimentary measure of exclusion because of a lack of resources, individually defined, and an arbitrary societal value of low income. The function of

the low income criterion in practice is *not* to divide exclusion because of a lack of resources from exclusion arising for other reasons, nor to provide a societal measure of income adequacy, but to over-rule certain respondents who claim that the absence of items is because of a lack of resources.

Seen in this light, the ‘deprivation indicators plus income adjustments’ approach of Mack and Lansley (1985) might also be said to align with the definition of poverty which Nolan and Whelan outline. However, the relative balance between low income and material deprivation indicators in the measurement of poverty is likely to be guided by empirical, as well as conceptual, considerations, and it is these to which we now turn.

Data

The empirical analysis presented in this paper is based on data from the 2006/7 wave of the British Household Panel Survey. The analysis is a completed cases analysis of 4,848 respondents between the ages of 16 and 59, clustered within 2,530 households. Robust standard errors are computed to account for this clustering. The individual is chosen as the unit of analysis because (i) there is a theoretical preference for a focus on individuals and not households (Atkinson *et al.*, 2002) and (ii) six of the seven deprivations analysed in the final section are collected at the household level, and I wish to make full use of this data. Since income and material deprivation data are collected at the household level, this means that the ubiquitous, but problematic, assumption of equal income sharing within households is made. The data are weighted using the cross-sectional individual weight supplied with the BHPS.

The income variable that has been chosen is equivalised net current (i.e. weekly) income (whhnetde2), and is a before housing costs (BHC) measure of income. This income variable employs a Modified OECD equivalence scale, which allocates a weight of 1 for the first adult, 0.5 for additional adults and .3 for each child, and values are expressed in January 2008 prices (Levy and Jenkins, 2008). A binary measure is constructed based on a 60 per cent median income poverty line (calculated using all cases for whom there were positive individual weights), which equates to equivalised £170.99 per week. Since this income measure does not take housing costs into account, this offers one reason why households at any particular income level may experience different levels of material deprivation.

The material deprivation measure is based on an enforced lack of one or more of the nine item deprivation index (see Table 1 below). Thus, I adopt a counting approach, following the measurement of consistent poverty (e.g. Nolan and Whelan 1996). In Table 6, I draw on seven dimensions of multiple deprivation. These are: ill-health, poor mental health, housing deprivation, low autonomy, low life satisfaction, financial stress, and unemployment. The scores presented in Table 6 follow the response categories of the variables themselves (aside from poor mental health and low

autonomy, which I discuss below). Where necessary, however, responses have been reverse-coded so that in each case higher values reflect greater deprivation.

The measure of ill-health refers to overall health status in the past twelve months compared to others of the same age and is coded from 1-‘excellent’ to 5-‘very poor’. The 12-item General Health Questionnaire module is used as a measure of mental ill-health. This survey module asks respondents how they have been feeling about a number of aspects of life, such as decision making, concentration, confidence and so forth. The response categories refer to whether a respondent is doing (i) better than usual, (ii) the same, (iii) worse than usual or (iv) much worse than usual. I adopt the GHS scoring approach (0-0-1-1) to these responses (e.g. Goldberg and Hillier, 1979). The measure of housing deprivation is a count of the number of housing problems (out of a possible 11) experienced by households, including a shortage of space, a leaky roof, street noise, and so forth. The measure of low autonomy draws on a subset of items from the CASP-19 survey module (Wiggins *et al.*, 2008). This subset comprises three items: (i) ability to plan for the future, (ii) ability to do the things one wants to do and (iii) being pleased with what one does. The response categories to these three questions are: often, sometimes, not often, never. I code these responses 0-0-1-2.

The life satisfaction measure is based on a ‘global’ question asking respondents how satisfied they feel with their life overall. The responses for this measure range from 1-‘completely satisfied’ to 7-‘not satisfied at all’. The financial stress measure is based on a question asking respondents how they are managing financially, with responses ranging from 1-‘living comfortably’ to 5-‘finding it very difficult’. Finally, unemployment is a binary variable recoded from a question about respondents’ economic status.

Empirical analysis

The measure of material deprivation employed in this paper is an aggregate measure based on nine deprivation items, which are listed in Table 1. As can be seen, the proportion of respondents experiencing an enforced lack of any of the items varies significantly from item to item, ranging from 13 per cent who claim to be unable to afford an annual holiday to less than one per cent who claim to be unable to keep the house warm.

Table 1. Percentage of respondents experiencing an enforced lack of each item

annual holiday away from home	12.9
replace worn-out furniture	7.2
household contents insurance	5.3
keep home in a decent state of decoration	5.1
have family or friends for a drink or meal once a month	3.0
new, rather than second hand, clothes	2.6
eat meat, chicken or fish at least every second day	2.1
two pairs of all-weather shoes for each adult	1.8
keep house adequately warm	0.7

Source: BHPS 2006/7, respondents under 60

In Table 2, I present the proportion of the population who fall below low income and material deprivation lines at three levels of severity; namely, income poverty thresholds at 60, 50 and 40 per cent of median income, and an enforced lack of 1+, 2+ or 3+ deprivation items. A somewhat greater proportion of the population aged under 60 are found to fall below the material deprivation lines (18.4 and 14.4 of respondents for the 1+ and 60% income lines respectively, 10.1 and 8.5% at the 2+ and 50% median income thresholds, and 6.2 and 5.4% at the 3+ and 40% thresholds).

Table 2. Percentage of respondents falling below typical low income and material deprivation lines

<60% median	14.4
<50% median	8.5
<40% median	5.4
1+ deprivation items	18.4
2+ deprivation items	10.1
3+ deprivation items	6.2

Source: BHPS 2006/7, respondents under 60

It may be expected that this implies that low income and material deprivation measures are identifying the same people. But to a substantial extent, they do not. In Table 3, I present the probability of deprivation in each income decile. The probability of deprivation does not rise above .5 in *any* decile (and, indeed, higher in the second decile than the first, most probably reflecting problems with income data at the very lowest ends of the income distribution, see Berthoud and Bryan, 2011). Furthermore, even in the top two income deciles, some respondents report an enforced lack of one or more deprivation items and, far from a clear threshold emerging, the probability of deprivation rises fairly smoothly as one moves down the income distribution (albeit

with somewhat more substantial increases between the 5th and 4th decile, and the 3rd and 2nd decile).

Table 3: Proportion of respondents in each income decile experiencing material deprivation

	bottom	2th	3rd	4th	5th	6th	7th	8th	9th	top
deprived (%)	41.5	46.3	30.1	26.3	16.7	13.6	9.7	7.1	4.9	2.9

Source: BHPS 2006/7, respondents under 60

If we seek to move beyond a focus on *either* low income *or* material deprivation alone, but instead consider trying to incorporate them both into the measurement exercise, as suggested by the ESRI researchers, this raises questions about the appropriate *balance* between these indicators. One option is to make this decision based on nature of the measures themselves, as we have discussed above. An alternative option is to explore the empirical relationship between various classifications of poverty and other forms of multiple deprivation which *a priori* we assume to be related to the construct of interest – in this case, material poverty.

One such example is presented by Nolan and Whelan (2011: 113-115), who construct consistent poverty profiles for respondents in twenty-six European countries, and explore the relationship between these poverty profiles and economic stress, defined as reporting ‘difficulty’ or ‘great difficulty’ in making ends meet (the results for six of the twenty-six counties they present are reproduced in Table 4). In their discussion of the table, they note that the:

‘relative risk of economic stress increases as one goes from the consistently non-poor group to the income poor only, deprivation only, and finally consistently poor [i.e. income poor and deprived]. However, the pattern we observe is not one of a steady increase but rather involves a sharp contrast between those experiencing deprivation and all others’ (Nolan and Whelan, 2011: 113).

What is interesting about Table 4, and indeed in the complete table in Nolan and Whelan (2011: 113), is its sheer consistency: in each of the twenty-six nations Nolan and Whelan survey, respondents who were consistently poor (i.e. have a low income and are materially deprived), experience the greatest risk of reporting economic stress and, in every case, respondents who were deprived but not income poor display a greater risk than those who were income poor but not deprived. This suggests that indicators of material deprivation are particularly useful in identifying respondents at risk of self-reported economic stress.

Table 4. Relative risk of experiencing economic stress by consistent poverty typology by country: Odds ratios

	income poor but not deprived	deprived but not income poor	income poor and deprived
<i>Social Democratic</i>	1.013	2.917	3.310
Sweden	0.261	3.284	3.572
Norway	0.088	3.194	3.564
Denmark	1.399	3.001	3.579
Netherlands	1.255	3.036	3.165
Iceland	0.813	2.302	2.784
Finland	1.262	2.682	3.198

Source: Nolan and Whelan (2011: 114). Reference category: neither income poor nor materially deprived (not shown).

One might argue, however, that a subjective measure of financial stress is too slender a basis on which to make judgements about the relative merits of low income and material deprivation indicators because ‘to be poor depends on how you live, not how you feel’ (Ringen, 1987: 145). On this view, comparing the performance of low income and material deprivation indicators with a broader range of deprivations would be required in order to present more a thorough evaluation of their relative merits in identifying individuals at risk of forms of deprivation which we might expect to be associated with material poverty. In the following analysis, I draw on seven dimensions of deprivation, using data from Great Britain: ill-health, poor mental health, housing deprivation, a lack of autonomy, low life satisfaction, financial stress, and unemployment. I assume each of these forms of deprivation to be related to the construct of interest – namely, material poverty.

Table 5 presents binary correlations between the 60 per cent median income measure, material deprivation measure and seven dimensions of multiple deprivation. With the exception of unemployment, the material deprivation measure is more closely correlated with each of the forms of deprivation presented here – and in some cases (ill-health, housing deprivation, financial stress), the differences between the correlation coefficients are quite substantial.

This supports the findings of Halleröd and Larsson (2008: 23) who compare the association between income poverty, material deprivation and a range of seventeen ‘welfare problems’ including neighbourhood problems, ill-health, and political disengagement, and so forth, using data from Sweden. They find that the deprivation measure displayed a stronger association than low income with most of the welfare problems they considered, and conclude that ‘income poverty was one of the most peripheral of all welfare problems’. This is, of course, problematic because it means that ‘the most commonly used measure discriminates a section of the population that is only marginally connected to other welfare problems’ (2008: 20).

It may be that the stronger correlations between material deprivation and most dimensions of multiple deprivation than are evident for low income arises because income is an ‘input’, whereas material deprivation is an ‘output’; the result of circumstances where one’s income is insufficient to meet one’s needs. Thus, the stronger correlations between most dimensions of multiple deprivation and with material deprivation does not imply in any way that additional income is not necessary as an appropriate policy response. But it does suggest that material deprivation is particularly useful in terms of *identifying* individuals who are at risk of multiple forms of deprivation which we might expect to be related to material poverty.

Table 5. Correlation between low income, material and multiple dimensions of deprivation, respondents under 60

	60% median income	1+ deprivation items
60% median income	1	
1+ deprivation items	0.4828	1
ill-health	0.1780	0.3424
mental health	0.1471	0.2587
housing	0.1960	0.4321
life satisfaction	0.2796	0.3909
lack of autonomy	0.1160	0.2118
financial stress	0.3995	0.6218
unemployment	0.4593	0.3862

Source: BHPS 2006/7, respondents under 60

However, while we know that there is a substantial mismatch between low income and material deprivation measures, there is also some overlap between them. Thus, we wish to explore not only how low income and material deprivation measures perform on their own, but also to examine the association between respondents in different consistent poverty profiles and the seven dimensions considered here. In constructing consistent poverty profiles for each respondent, the familiar 60 per cent of median income and 1+ deprivation thresholds are adopted.

Table 6 presents the average deprivation score for each of the seven dimensions based on respondents’ consistent poverty profiles. The average deprivation scores reflect the response categories of the deprivations themselves, and in each case higher values imply greater deprivation. The findings show that for five of the seven dimensions considered here (all bar housing deprivation and unemployment), the average deprivation score rises consistently as one moves from non-poor, income poor but not materially deprived, materially deprived but not income poor, and consistently poor, as Nolan and Whelan (2011) found with their measure of economic stress. This supports the idea that the consistently poor are a group who are particularly vulnerable

to forms of multiple deprivation. In all cases, the non-poor exhibit the lowest rates of each of the seven forms of deprivation, as we would expect.

However, the two intermediate categories are also of interest. On each dimension bar unemployment, respondents who were materially deprived but not income poor display greater rates of multiple deprivation than those classified as income poor but not materially deprived, and on all six of these dimensions the differences are statistically significant.

In contrast, rates of multiple deprivation for respondents in consistent poverty are only significantly greater than those classified as materially deprived but not income poor on two dimensions (financial stress and unemployment), while on four dimensions (ill-health, mental health, housing deprivation and lack of autonomy), respondents who experience income poverty but not material deprivation exhibit an average deprivation score which is not significantly different than non-poor respondents. Of the two measures of ‘material’ poverty, it is the material deprivation measure – and not the low income measure – which makes the decisive difference in identifying individuals at risk of six of the seven forms of multiple deprivation considered here.

Table 6. Average multiple deprivation score by consistent poverty status, with 95% confidence intervals

	non-poor	poor non-deprived	deprived non-poor	consistent poor
ill-health	1.977	2.049	2.388	2.514
	<i>1.95 - 2.01</i>	<i>1.96 - 2.14</i>	<i>2.30 - 2.48</i>	<i>2.38 - 2.65</i>
mental ill-health	1.687	1.907	2.734	3.551
	<i>1.58 - 1.79</i>	<i>1.56 - 2.26</i>	<i>2.37 - 3.10</i>	<i>3.02 - 4.09</i>
housing deprivation	0.792	0.989	1.957	1.847
	<i>.73 - .86</i>	<i>.77 - 1.21</i>	<i>1.66 - 2.25</i>	<i>1.49 - 2.21</i>
lack of autonomy	0.601	0.720	0.993	1.014
	<i>.56 - .64</i>	<i>.59 - .85</i>	<i>.86 - 1.13</i>	<i>.84 - 1.19</i>
low life satisfaction	2.747	2.952	3.409	3.680
	<i>2.71 - 2.79</i>	<i>2.80 - 3.10</i>	<i>3.26 - 3.55</i>	<i>3.48 - 3.88</i>
financial stress	1.879	2.222	2.800	3.205
	<i>1.84 - 1.92</i>	<i>2.11 - 2.33</i>	<i>2.70 - 2.90</i>	<i>3.05 - 3.36</i>
unemployment	0.020	0.075	0.054	0.189
	<i>.014 - .025</i>	<i>.05 - .10</i>	<i>.03 - .08</i>	<i>.14 - .24</i>

Source: BHPS, 2006/7, respondents under 60

Concluding discussion

The measurement of poverty as ‘consistent’ poverty was an attempt to offer a measurement approach which was aligned with the conceptualisation of Townsend, whose definition Nolan and Whelan reworded as ‘exclusion from the life of the society owing to a lack of resources’ (Nolan and Whelan, 1996: 2). Two pieces of information were considered for inclusion, namely respondents’ low income and material deprivation statuses, and these were largely accepted in their existing, non-ideal forms: ‘this measurement approach serves to highlight features of the [Townsendian] definition itself. Households are only to be categorised as ‘poor’ if they are both at low incomes – however defined – and experiencing deprivation and exclusion – again, however defined’ (Callan *et al.*, 1993: 170). Furthermore, Nolan and Whelan argued that these two measures required an ‘equal weight’, thereby distinguishing the approach from that of Townsend (1979) and Mack and Lansley (1985). The primary context in which consistent poverty was considered was in making a shift away from the dominant, income-centric approach to analysis (“income alone”). In their recent *Resources and Deprivation in Europe*, Nolan and Whelan (2011: 99) continue to make a similar argument: ‘the conceptual and measurement problems in relying on income alone to identify the poor suggest that incorporating deprivation [indicators] into the process could have significant potential’.

In this paper, I have offered a reconsideration of consistent poverty measure and, in particular, of the claim that low income and material deprivation measures should be given an equal weight. In the conceptual discussion, I have argued that the inclusion of the enforced lack criterion within the measurement of material deprivation changes the nature of the deprivation indicators in an important way because these now contain the full definition of poverty on their own, albeit with an individually-defined interpretation of what constitutes an enforced lack. This changes the ‘division of labour’ between the two measures from one where the indicators capture exclusion and the low income measure divide respondents for whom exclusion arises because of a lack of resources from those whose exclusion is caused by other factors (Nolan and Whelan, 1996: 115-6) to one where the deprivation indicators capture exclusion because of a lack of resources, individually-defined, and the function of the low income indicator is to over-rule respondents where their claims of enforcement appear to be in contradiction to their resources. And this suggests that Mack and Lansley’s (1985) deprivation-indicators-plus-adjustments approach might be understood to be compatible with definition of poverty which Nolan and Whelan outline.

However, the balance between the low income and material deprivation indicators is likely to draw not only on conceptual arguments, but also on empirical analysis. As I demonstrate here drawing on seven dimensions of multiple deprivation in Great Britain, and as Nolan and Whelan (2011: 114) show using a measure of economic stress in twenty-six European nations, it is the deprivation indicators which are particularly useful in identifying respondents with a pronounced risk of dimensions of deprivation which we might *a priori* expect to be associated with material poverty.

It is respondents' deprivation status – not their low income status – which makes the crucial difference in predicting their risk of multiple forms of deprivation. Where respondents experience income poverty only, they display a rate of multiple deprivation which is in each case greater than the non-poor, but the differences are typically not statistically significant. When low income co-occurs with material deprivation (i.e. respondents experience 'consistent' poverty), the rates of multiple deprivation they face are substantially elevated. In contrast, the experience of material deprivation, whether this co-occurs with low income or not, is associated with elevated rates of multiple deprivation, and these rates are greater (but typically not significantly so) when low income is added.

Respondents in consistent poverty face the greatest rates of multiple forms of deprivation, bar housing deprivation, a finding which seems to suggest the validity of the measure itself. However, one problem with interpreting this as suggesting that consistent poverty alone is the most valid measure is that a dual criterion, by its very definition, focuses on a subset of respondents in low income or material deprivation alone. And this, in turn, is problematic because the search for groups who display particularly great pronounced rates of multiple forms of deprivation may end up validating a measure of residual, extreme poverty. Focussing on ever-smaller subsets of the population who experience ever-greater rates of multiple deprivation can become *reductio ad absurdum*. What we ideally want when testing the validity of a poverty measure is to compare groups of relatively similar sizes.

One such comparison is provided by evaluating the merits of low income, on the one hand, and material deprivation, on the other. If the starting point and relevant comparison is 'income alone', then the incorporation of indicators of material deprivation into the measurement exercise would seem to mark an improvement in terms of identifying individuals at risk of multiple deprivation. But 'income alone' is not the only possible starting point, nor the sole point of comparison for any alternative measure. If one does not constrain the analysis by comparing the consistent poverty measure solely to 'income alone', but instead ask whether low income or material deprivation identify individuals at risk of other forms of deprivation, then it would appear that, on six of the seven forms of deprivation considered here using data from Great Britain, and using a measure of economic stress across twenty-six European countries (Nolan and Whelan, 2011), it is the material deprivation measure – and not low income – which makes the crucial difference. Indicators of material deprivation appear to possess important, and perhaps unexpected, measurement advantages.

At this point, it is necessary to place these findings within a broader context, relaxing the assumptions that income-as-we-currently-measure-it and deprivation-as-we-currently-measure-it are good measures of the constructs of interest. In this context, the performance of material deprivation indicators is even more surprising since the deprivation index analysed in this paper falls far short of the comprehensiveness of an income measure (i.e. the criticisms of Berthoud and Bryan, 2011, and Jenkins, 2011) and we may question whether, taken together, these indicators truly represent

exclusion from one's society. Given these apparent weaknesses in the measurement approach, the findings presented here are even more surprising.

The real question, therefore, is *why*? Why is it that a relatively rudimentary measure of material deprivation appears, in practice, to have greater success in identifying respondents at risk of multiple forms of deprivation than an income measure which is constructed from numerous survey questions about household income, and for which enormous efforts are expended in order to ensure its robustness?

The promising nature of indicators of material deprivation in identifying respondents at risk of multiple forms of deprivation also has implications for the state-of-the-art of poverty measurement in terms of advancing these indicators beyond their relatively rudimentary present state. While there is an important literature examining the extent to which these indicators are considered necessities (e.g. Fahmy *et al.*, 2011), further work is required to test new items, and to assess how aggregate indices and individual items perform in statistical terms – how such items function for different sub-groups of the population (e.g. McKay, 2004), how such indicators can provide a valid measure of poverty over time and in different countries, identifying which indicators are particularly useful in constructing a reliable measure of material deprivation, or help in identifying respondents at risk of multiple deprivation, and so forth. Undoubtedly many problems remain, but the promise of these indicators is such that additional work is both justified and required in order to strengthen the measurement approach.

The measurement of poverty as 'consistent' poverty makes an important departure from measuring poverty by 'income alone', which remains dominant within the field, and points to the advantages of incorporating material deprivation indicators in the measurement process, both in terms of alignment with the definition, and in identifying respondents who, on other measures, 'appear' to be deprived. In these areas, 'consistent' poverty makes an important contribution. But by treating 'income alone' as the relevant comparison, and by framing the analysis in terms of whether deprivation indicators can act *as a complement* to a low income indicator (e.g. Nolan and Whelan, 2011: 1), the advantages of a deprivation-led approach are, I believe, underestimated. If one does *not* take 'income alone' as the relevant alternative, but instead compares the performance of low income and material deprivation measures, the real contribution of indicators of material deprivation can be more clearly seen. This has not been unnoticed by the ESRI team who noted that 'the "inconsistent" groups, especially the high income households reporting deprivation, require more consideration' (Callan *et al.*, 1993: 169, see also Nolan and Whelan, 1996: 134-5). Indeed they do, but these considerations are not, I argue, of the second order, but raise first-order questions about the balance between low income and deprivation indicators.

Based on the conceptual and empirical analysis presented above, the relevant question would seem *not* to be whether to adopt 'income alone' or consistent poverty measurement approaches, but whether a deprivation-led measurement approach would

not also align with the definition Nolan and Whelan outline as the equally-weighted approach which they advocate. Despite their limitations, which require further attention, the success of material deprivation measures in identifying individuals at risk of multiple forms of deprivation which we may *a priori* assume to relate to material poverty is both notable and, perhaps, surprising.

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