

# Clumps and Pumps: Clumpiness, Resolution and Rational Choice

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It is widely held that the possibility of value-incomparability poses a serious threat to comparativism. Some comparativists propose to avoid this problem by supplementing the three traditional value relations with a fourth value relation, variously identified as 'roughly equal' or 'on a par'. However, in a recent article in this journal, Nien-he Hsieh has proposed that the comparisons thought to require rough equality or parity could instead be understood in terms of the concept of 'clumpiness'. Against this suggestion, Martin Peterson has argued that the concept of clumpiness allows agents to be exploited in money-pumps, thus removing the central appeal of the concept. In this note, I show that Peterson's argument fails to establish that the concept of clumpiness allows agents to be exploited in money-pumps.

## I. INTRODUCTION

It is widely held that the possibility of value-incomparability between alternatives poses a serious threat to comparativism, i.e. the view that what one rationally ought to choose in a given choice-scenario depends on comparative facts about the value of the alternatives. Some comparativists have proposed to avoid this problem by supplementing the three traditional value relations *better than*, *worse than* and *equally as good*, with a fourth value relation, variously identified as *roughly equal*<sup>1</sup> or *on a par*,<sup>2</sup> which is supposed to hold between alternatives that are incomparable by the three traditional value relations. Whenever two alternatives are related by this fourth relation, either alternative is rationally permitted, thus rendering incomparability by the three traditional value relations compatible with comparativism.

However, in a recent article in this journal, Nien-he Hsieh has argued that we need not supplement the three traditional value relations with a fourth distinct relation.<sup>3</sup> Instead, he proposes that the comparisons thought to require rough equality or parity could be understood in terms of the concept of 'clumpiness'. This concept of clumpiness 'sorts items into classes, or clumps, based upon the degree to which the items possess each of the relevant respects that comprise the covering considerations'.<sup>4</sup> Importantly, when two items belong to

<sup>1</sup> J. Griffin, *Well-Being* (Oxford, 1986); D. Parfit, *Reasons and Persons* (Oxford, 1984).

<sup>2</sup> R. Chang, 'The Possibility of Parity', *Ethics* 112 (2002), pp. 659–88.

<sup>3</sup> N. Hsieh, 'Equality, Clumpiness and Incomparability', *Utilitas* 17 (2005), pp. 180–204.

<sup>4</sup> Hsieh, 'Equality, Clumpiness and Incomparability', p. 184.

the same 'clump', they are, by definition, equally good, and clumpiness therefore makes a fourth value relation unnecessary. This would be a desirable result for other reasons than theoretical parsimony: all versions of the fourth value relation hitherto proposed are intransitive and therefore vulnerable to money-pump arguments. Against this suggestion, Martin Peterson has argued that the concept of clumpiness also allows agents to be exploited in money-pumps, and thus that there is no way of linking clumpiness to rational choice.<sup>5</sup> This would remove the central appeal of the concept.

In this note, I show that Peterson's argument fails to establish that the concept of clumpiness allows agents to be exploited in money-pumps. I will proceed as follows. In section II I introduce Hsieh's notion of clumpiness in more detail, and sketch Peterson's argument that clumpiness allows for agents to be exploited in money-pumps. In section III I consider more closely arguments invoking money-pumps. I argue that a sequential money-pump succeeds in establishing irrationality on the part of the agent or some principle of choice only if no relevant change in evaluative circumstances occurs underway in the sequence. In section IV I show that Peterson's money-pump argument against clumpiness is unsuccessful on this count, and that it cannot be qualified to meet the objection.

## II. CLUMPINESS AND MONEY-PUMPS

All comparisons involve what has been called 'covering considerations' or 'covering values'. Covering values specify the respects in which alternatives are to be compared. For example, if one is to compare two sleeping bags, one might take the relevant values to be their ability to keep one warm, how quickly they dry, how light they are to carry, their volume when compressed, and so on. Although it does not make sense to compare alternatives independently of a set of covering values, such values may be construed very broadly. This means that the covering values for a given comparison will often comprise several different aspects that are relevant to the comparison of alternatives. When this is the case, the different aspects must be weighed against each other to reach an overall comparative judgement. Needless to say, this is not always an easy task. Sometimes the alternatives may contribute to the covering values in very different ways. To take the now classic example, Mozart and Michelangelo each exemplify the covering value of creativeness, but in virtue of possessing very different qualities, and it is unclear how to weigh the respects in which each of them is creative

<sup>5</sup> M. Peterson, 'Parity, Clumpiness and Rational Choice', *Utilitas* 19 (2007), pp. 505–13.

against each other.<sup>6</sup> We seem unwilling to say that either is more creative than the other. But we are equally unwilling to say that an imaginary slightly improved version of Mozart is more creative than Michelangelo, which seems to show that Mozart and Michelangelo cannot be equally creative either. It would seem, therefore, that they are incomparable by the three standard value relations, thus posing a serious challenge to comparativism.<sup>7</sup>

*Clumpiness* is a property of covering values, introduced by Hsieh to address this challenge. Covering values that are *clumpy* divide alternatives into classes, or clumps, depending on the degree to which the alternatives are valuable in each of the relevant respects that comprise the covering values.<sup>8</sup> Alternatives that belong to the same clump are to be considered equally good for the purpose of the comparison. The sorting into clumps always proceeds through a *holistic* comparison, which not only involves comparison of each of the component aspects relevant to the comparison, but also weighing of the different aspects against each other. Importantly, comparisons are performed at a given *resolution*, and the sorting of alternatives into clumps depends on the level of resolution appropriate for the purposes of the comparison. In some situations, a relatively low resolution may be appropriate, making for a ‘coarse’ sorting of alternatives into clumps. In other situations, a higher resolution may be appropriate, making for a finer sorting. The crucial point for our purposes is that resolutions are not chosen arbitrarily. As Hsieh makes clear, ‘the resolution for the comparisons involved is determined by the purpose for which the comparison is made’.<sup>9</sup> But beyond this, Hsieh says very little about exactly how the appropriate resolutions are to be determined. This is unfortunate insofar as it is this exact element of the notion of clumpiness that potentially makes it vulnerable to money-pump arguments, as we shall see in a moment.

Hsieh provides an example to clarify the concept. When grading essays, a teacher sorts the essays into clumps, in this instance in the form of grades ‘A’, ‘B’, ‘C’, etc., based on the degree to which the essays possess a number of relevant qualities that comprise the covering value ‘goodness as a student essay’, i.e. understanding of the topic, effectiveness of prose, etc. Two essays *x* and *y* within the same grade such as ‘B’ may differ, such that *x* is better than *y* in some respects, and *y*

<sup>6</sup> For this example, see R. Chang, ‘Introduction’, in her *Incommensurability, Incomparability, and Practical Reason* (Cambridge, 1997), pp. 1–34.

<sup>7</sup> This argument for incomparability by the three traditional value relations is termed ‘The Small Improvement Argument’. For a thorough recent discussion, see N. Espinoza, ‘The Small Improvement Argument’, *Synthese* 168 (2008), pp. 127–39.

<sup>8</sup> Hsieh, ‘Equality, Clumpiness and Incomparability’, p. 184.

<sup>9</sup> Hsieh, ‘Equality, Clumpiness and Incomparability’, p. 186.

is better than  $x$  in other respects. Or  $x$  may even dominate  $y$  in the sense of being slightly better than  $y$  in all relevant respects, yet the two may still belong to the same grade. If the purpose of the grading changes, the resolution of the comparison that is appropriate for the task may change as well. For example, if a higher resolution is appropriate in a particular set of circumstances,  $x$  and  $y$  might belong to distinct clumps, such as 'B+' and 'B', thus making  $x$  better under those circumstances.

Peterson's money-pump argument against clumpiness as a guide for rational choice proceeds as follows.<sup>10</sup> Suppose that a teacher wishes to select the best student essay from a set of three essays  $x$ ,  $y$  and  $z$ . Suppose further that if the comparison is made at a low resolution, all three essays belong to the same clump and are hence equally good, but if the comparison is made at a high resolution,  $x$  is better than  $z$ . Consider now the following possible sequence of choices. The teacher starts out at time  $t_0$  with essay  $x$ . At  $t_1$  he is offered to swap  $x$  for  $y$ . If he swaps, he will (as a surprise) be offered at  $t_2$  to swap  $y$  for  $z$ . If he makes this swap as well, he will (once again as a surprise) be offered at  $t_3$  to swap  $z$  for  $x$ .<sup>11</sup> Peterson then states that at  $t_1$  and  $t_2$ , 'the circumstances of the choice happen to be such that [...] the level of resolution ought to be low'.<sup>12</sup> This means that at  $t_1$   $x$  and  $y$  belong to the same clump, and that at  $t_2$   $y$  and  $z$  belong to the same clump. The teacher is thus permitted to swap  $x$  for  $y$  at  $t_1$ , and  $y$  for  $z$  at  $t_2$ . However, Peterson then stipulates that at  $t_3$  circumstances happen to be slightly different, so that a high level of resolution is required. This means that at  $t_3$   $x$  is better than  $z$ , and the teacher should therefore be rationally permitted to pay a small sum of money  $\varepsilon$  (smaller than the difference in value between  $x$  and  $z$ ) to swap  $z$  for  $x$ . The teacher has thus, through a sequence of choices that are rationally permissible according to the concept of clumpiness, ended up being worse off (essay  $x$  minus  $\varepsilon$ ) compared to the starting point (essay  $x$ ).

Peterson's money-pump argument depends on there being a shift in circumstances, creating a corresponding shift in resolution, at a point during the sequence of choices. Without this shift in resolution,  $x$  and  $z$  would belong to the same clump and as such be equally good, and it

<sup>10</sup> M. Peterson, 'Parity, Clumpiness and Rational Choice', pp. 512–13. In the same article, Peterson also presents money-pump arguments against parity and rough equality. Money-pump arguments were originally devised to justify standard assumptions about consistency of preferences in economic theory. For a careful discussion of this use of money-pump arguments, see R. Cubitt and R. Sugden, 'On Money Pumps', *Games and Economic Behaviour* 37 (2001), pp. 121–60.

<sup>11</sup> The rationale for making the choices a matter of surprise to the agent is to avoid the objection that it might be irrational to embark on a sequence of choices that one knows in advance will make one worse off. Henceforth, I shall make the surprise element a tacit assumption of any further versions of the money-pump argument.

<sup>12</sup> M. Peterson, 'Parity, Clumpiness and Rational Choice', p. 513.

would therefore not be rational for the teacher to pay a sum in order to swap  $z$  for  $x$ . So without the shift in resolution there can be no money-pumping sequence of rationally permissible choices. Peterson does not explain what the shift of circumstances needed for the corresponding shift in resolution consists in. But as I will go on to show, not just any change of circumstances is compatible with money-pump arguments. In the next section I will consider what kinds of changes in circumstances are compatible with sequential money-pump arguments. In section IV I will return to considering whether Peterson's argument against clumpiness relies on the wrong sort of shift in circumstances.

### III. SEQUENTIAL MONEY-PUMPS AND CHANGE IN CIRCUMSTANCES

It is easy to imagine a sequence of choices where the agent ends up with something that is distinctly worse than what she started out with, without this in any way betraying irrationality on the part of the agent or the principles by which she chooses. The most trivial examples of such a sequence occur when circumstances relevant to the evaluation of choices change underway in the sequence. For example, suppose that you are going camping in a national park and consider which sleeping bag to bring along. The relevant covering considerations for your choice are that the sleeping bag should keep you at a comfortable temperature, and that it should be as light as possible to carry. When you leave for the camping trip, the weather forecast promises cold weather so you decide to take the warm sleeping bag. However, when you arrive at the park entrance, it is much warmer than you expected, and it now seems pointless to carry the warm but heavy sleeping bag. You are offered to swap for the light one, and make the swap. Soon after making the swap, however, a cold snap unexpectedly descends on the national park, and your light sleeping bag will be miserably inadequate at keeping you warm. Luckily you are offered to swap back to the warm sleeping bag, but at a price. In order to stay warm, you pay the price to get back the sleeping bag you started out with.

The point of this example is to show that it need not be irrational to make a series of choices ending up with something distinctly worse than what one started out with. In this case, circumstances change, and so does the evaluation of the choices, since the circumstances affect the relative weight of the two relevant covering considerations governing the comparison of the sleeping bags, namely weight and ability to keep you warm. It does not follow from this, of course, that we cannot imagine a vicious sequential money-pump, which does include changes in the circumstances surrounding the choice. All sorts of changes in circumstances are compatible with a sequence of choices

being a money-pump. But a sequential money-pump argument can be effective only if the agent being worse off at the end of the sequence doesn't *depend* on changes in circumstances during the sequence that affect the comparison of the choice alternatives. This much should be uncontroversial. I will now turn to consider whether Peterson's argument can live up to this requirement.

#### IV. PETERSON'S ARGUMENT AGAIN

As mentioned earlier, Peterson's example is silent on the nature of the shift in circumstances that affects the shift in appropriate resolution required for the money-pumping sequence of choices. Here is one way to fill out the details of Peterson's example in which the agent does not betray irrationality, despite ending up being worse off. Suppose once again that there is a set of three essays, *x*, *y* and *z*, such that all of the essays belong to the same clump if the comparison is done at a low resolution, but that *x* is better than *z* if the comparison is done at a high resolution. Suppose further that all three essays have been given the grade 'B'. Imagine that a teacher (who wishes to make the right choice) is to choose one of the essays for a student prize. At  $t_0$ , the rules governing the prize state that in order to avoid controversy the selection can be based only on the grade received. So the purpose of the selection is to choose an essay that has received a grade that is at least as high as the alternative essays. At this point, the purpose for which the comparison is made thus makes a low resolution appropriate. Since all three essays received a 'B', they belong to the same clump and are thus equally good at  $t_0$ . So the teacher is permitted to choose any of the three essays. Suppose that the teacher chooses essay *x*. At  $t_1$ , the teacher is offered to swap *x* for *y*. Nothing has changed in the rules governing the selection, so the teacher is permitted to make the swap (we need not worry about the teacher's reasons for making the swap to an equally good essay). Suppose that she decides to swap *x* for *y*. At  $t_2$ , the teacher is unexpectedly offered to swap *y* for *z*. Since nothing has changed, he makes the swap. At  $t_3$ , however, a change of the rules is instated. The governing board of the school has decided that to motivate the students to perform better, the student prize will instead be given to the best essay, where the comparison is no longer to be based on the grade received only. This means that a higher resolution in the comparison of competing essays is appropriate. And as we have supposed, on a higher resolution, *x* is better than *z*. The teacher should therefore be prepared to pay a small amount of money for swapping back to *x*. The teacher has thus ended up the way she started, with essay *x*, the only difference being that she now is a little bit poorer. But this unfortunate result cannot be blamed on the irrationality of the teacher or the rules

by which she chooses. She ended up being worse off, but the change in circumstances is to blame for this result, not the teacher's decision-making. This way of explaining the change of appropriate resolution in Peterson's money-pump argument against clumpiness thus makes the money-pump non-vicious. It does not betray irrationality.

Someone might object that, in this example, there is not only a change in resolution from  $t_1$  to  $t_3$ , but also a change in the covering values governing the evaluation, in which case the breakdown of Peterson's money-pump argument would become trivial. After all, at  $t_1$  only the grades given to the essays are relevant, whereas this is not the case at  $t_3$ . But this objection is misguided. There is no change in covering values between  $t_1$  and  $t_3$ . In both cases, the covering values are those that contribute to goodness as a student essay, viz. qualities such as originality, effectiveness of prose, understanding of the topic, etc. The only difference is that at  $t_1$  the resolution is such that differences between the essays are irrelevant as long as both essays are within the 'B' clump, i.e. are good enough *according to the above covering values* to be awarded a 'B', whereas at  $t_3$ , the resolution is such that differences in how well the essays live up to the covering considerations are relevant even if they are all within the 'B' clump.

The question is if it is possible to find an alternative way of filling in Peterson's example, which doesn't make the money-pump non-vicious in a manner such as the above. The problem is that the appropriate level of resolution for a comparison cannot just change at random. Some change in the circumstances or purpose of the comparison is needed to affect the resolution. But could we imagine a change in circumstances that would affect the resolution in the desired way, without also making the resulting money-pump benign? It seems not. The argument is simple: observe first that if the change in appropriate resolution is to serve the purpose of constructing a vicious money-pump, it must affect the ranking of the relevant alternatives. If it didn't, there would be no change in ranking during the choice-sequence, and the agent would thus not be worse off at the end of it. It follows from this that any change in circumstances that could be used to construct a vicious money-pump by way of affecting the appropriate level of resolution will *also* affect the ranking of the relevant alternatives. If the change in circumstances didn't affect the appropriate level of resolution in a way that in turn affected the ranking of the alternatives, the agent would not be worse off at the end, but this means that the change in circumstance must itself affect the ranking of alternatives if the sequence of choices is to result in the agent being worse off at the end of it. The fact that the change in circumstances would affect the ranking of alternatives only via first affecting the appropriate level of resolution doesn't make it any less the case that the change in



circumstances would affect the ranking. But we have already seen in section III that for a money-pump to be vicious, i.e. betray irrationality of the agent or the principles by which she chooses, it cannot rely on changes in circumstances during the sequence that affect the ranking of the relevant alternatives, such that the agent being worse off at the end of the sequence can be attributed to this change in circumstances. So we may conclude that there is no possible change of circumstances during a sequence of choices that can be used to construct a vicious money-pump against the notion of clumpiness, by affecting the appropriate level of resolution for sorting alternatives into clumps.

Perhaps Peterson could object that the ‘purpose’ of a comparison of alternatives, which is what determines the appropriate level of resolution at which the comparison is to be made, is independent of the ‘circumstances’ of the choice, such that the same set of circumstances could rationally permit more than one resolution. If that were the case, a money-pumping sequence of choices could be imagined without relying on changes in the evaluative circumstances in the problematic sense exemplified in section III.<sup>13</sup> Hsieh himself does not provide sufficient detail in his account of resolution for us to answer this question based on what he says alone. But there seems to be little reason why we should not simply regard the purpose of a comparison of alternatives as being part of the circumstances of the comparison, such that a change in the purpose of a comparison would entail a corresponding change in circumstances for the comparison. In the very broad sense of ‘circumstances’, which is relevant when evaluating whether a choice-sequence is money-pumping in the problematic sense, it seems that any fact or consideration which is independent of the internal features of the relevant alternatives, and the principles by which the agent ranks them, but may nevertheless affect how the alternatives are ranked, is to count as ‘circumstances’ of the ranking. On this understanding, the weather counts as part of the circumstances in the example described in section III, where an agent has to choose which sleeping bag to bring on a camping trip. But it seems equally clear that the purpose with which a ranking of alternatives is made counts as part of the ‘circumstances’ as well on this very broad, but nevertheless relevant, understanding of the term. If so, changes in the appropriate level of resolution cannot occur without changes in the evaluative circumstances of the choice, in which case Peterson’s argument fails. Peterson’s argument does not give us reason to suppose that the notion of clumpiness cannot be employed to resolve the problem of incomparability.

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<sup>13</sup> I am grateful to an anonymous referee for raising this possibility.