

Should the contribution of one more lame cow depend on how many other cows on the farm are lame?

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Welfare states apply to individual animals. Therefore, group welfare in our view should be aggregated as a linear function of the proportion of affected animals, so that for example doubling the number of lame cows on a farm leads to a doubling of the welfare effect of lameness. In contrast, the Welfare Quality protocol considers the total welfare score to be a highly non-linear function of the proportion of animals on the farm that are suffering. The weight that each additional affected animal has on the total welfare score depends heavily on the proportion of animals that are already affected, so that the impact of an additional affected cow is reduced as the number of animals with problems increases. This is a result of the application of expert weighting of different levels of welfare problems on a scale which as its anchor points include the terms 'acceptable' and 'unacceptable'. We support our view by two arguments: (1) It is conceptually problematic to mix the size of welfare problems and the evaluation of acceptability thresholds within one measure – partly because acceptability may be viewed as a non-linear function of the size of the welfare problems found a farm level. (2) What experts view as an acceptable level of animal welfare is more a matter of individual ethical judgement than of expertise. We asked 166 animal welfare experts to score the welfare effects of various prevalences of four conditions in cattle on an 11-point Likert scale with 'acceptable' and 'unacceptable' as anchor points. Linear mixed effects models with respondent as a random effect showed that the standard deviation for respondent (between 1.5-1.8) was between 30 and 80% higher than the residual standard deviation (between 1.0-1.2) for each outcome. This indicates a disproportionately large effect of respondent on the score.