



"A 20% income increase for everyone?": The effect of relative increases in income on perceived income inequality



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ABSTRACT

Most research on income inequality implicitly assumes that a fixed percentage increase in income across all income levels does not alter income inequality. In contrast with this assumption, we show that relative increases in income lead to increased perceptions of inequality, even when buying power is held constant. In a second experiment, we extended these findings using a fictitious currency, thereby eliminating effects of using a familiar currency. In study 3, we demonstrate that feelings of envy and fairness are affected by a fixed percentage income increase.

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1. Introduction

Over the past several decades income inequality has risen dramatically (e.g., Denavawalt, Proctor, & Smith, 2012). This rising income inequality is reason for concern because it may lead to diminishing levels of trust (Rothstein & Uslaner, 2005), increased feelings of envy (Ordabayeva & Chandon, 2011), increased obesity (Pickett, Kelly, Brunner, Lobstein, & Wilkinson, 2005) and increased levels of violence (Wilkinson, 2004; Wilkinson & Pickett, 2009). Although extant research shows that increasing income inequality has large consequences for people's lives, little is known about the factors that determine perceptions of income inequality. Specifically, while most research on income inequality implicitly assumes that a fixed percentage increase in income across all income levels does not alter income inequality, the present paper tests this assumption. In three studies, we show that relative increases in income lead to increased perceptions of inequality, even when buying power is held constant. In addition, we show that this occurs because people partly focus on absolute income differences, which increase when every income is increased with a constant fraction.

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2. Background

Income inequality is typically approached from a relative point of view (Cowell, 1985). According to the most widely used conceptualizations of income inequality, income inequality does not change by multiplying or dividing all incomes by a constant (Lingxin & Naiman, 2010; Litchfield, 1999). All inequality measures that are normalized using the mean income, total income or any arbitrary income possess this property (Lingxin & Naiman, 2010). Some authors even present this scale independence as an axiom of inequality measures (Litchfield, 1999). Scale independence implies that absolute changes in income affect income inequality, but relative changes do not. For example, the inequality of an income distribution consisting of three equally sized groups earning 1000, 2000 and 3000 euro is changed when incomes are raised or decreased with 100 euro because 100 euro is more in relative terms for the lowest income group than for the highest income group. Income inequality does not change, however, when each group receives a 10% income increase.

The notion of scale independence is consistent with a host of research showing that people are particularly sensitive to relative differences. In a classic demonstration, Tversky and Kahneman (1981) demonstrated that people are more willing to save \$5 on a \$15 priced item than on a \$125 priced item (see also Frisch, 1993; Thaler, 1980). This sensitivity to relative differences has also been shown to induce preference reversals (Wong & Kwong, 2005). In one study, participants were asked to decide between two Hi-Fi systems, A or B. Hi-Fi system A could hold fewer CDs but had a better sound quality than Hi-Fi system B. While the absolute difference in sound quality (.007) was held constant across conditions, the relative difference was manipulated by employing a framing manipulation. In one condition, when sound quality was specified in large numbers (99.99% vs. 99.997% of audio signal delivery), the majority of the participants favored system B. However, when sound quality was framed in small numbers (.003% vs. .01% of audio signal distortion) the majority opted for system A. Despite an identical difference in absolute terms, a strong sensitivity to relative differences led people to view a difference specified smaller numbers as larger.

One explanation for these effects is rooted in the Weber–Fechner law, which holds that people respond to changes in physical stimuli like loudness and weight by comparing it to the original value. As a result of this reference dependence, people become less sensitive to the same absolute difference when comparing larger numbers. This diminishing sensitivity is also reflected in prospect theory (Kahneman & Tversky, 1979; Tversky & Kahneman, 1981; Tversky & Kahneman, 1991). More specifically, a difference between smaller numbers falls on the steep slope of the subjective value function, which translates in a large subjective difference. Conversely, an identical difference (in absolute terms) between larger numbers falls on the shallow part of the slope of the subjective value function, which translates in a smaller subjective difference.

While extant research documents a strong sensitivity to relative differences, some research has shown that people also take absolute differences into account. Azar (2007) showed that people are more likely to exhibit partial relative thinking (i.e. considering both relative and absolute thinking) rather than full relative thinking. In one study, he examines how the willingness to pay for improved quality is affected by reference price (Azar, 2011). Results showed that people are indeed influenced by the reference good, thereby indicating relative thinking. However, in contrast to a full relative thinking account, raising the good's price by 200% generally increased the average valuations by less than 200%, thus suggesting that people exhibit partial relative thinking.

Further supporting partial relative thinking, several studies have shown that magnitude estimates change when they are represented in a different metric. More specifically, specifying quantitative information in alternative units leads people to consider an identical difference (in both absolute and relative terms) to be larger when specified in a smaller unit (i.e. in larger numbers; Monga & Bagchi, 2012; Pandelaere, Briers, & Lembregts, 2011). As such, relative to a difference specified in smaller numbers (i.e. in larger units), people perceive a difference described in larger numbers (i.e. in smaller units) as being larger because they seem to interpret the latter as larger in absolute terms.

For example, when an attribute description uses a contracted scale (e.g., quality rating on a 10-point scale) rather than an expanded one (e.g., quality rating on a 1000-point scale), consumers perceive an identical difference between two options as greater in the latter situation (Pandelaere et al., 2011). In a similar vein, research on the compression effect (Gamble, 2006; Gaston-Breton, 2006; Marques, 1999) demonstrated that people may perceive larger price differences when prices are specified in a smaller currency. For example, French consumers perceived the price gap between national brands and the private labels as smaller when prices were expressed in Euros versus in French francs, resulting in an increased transaction value for the national brands (Gaston-Breton, 2006). One explanation for these findings is that people ignore unit information when presented with quantitative information. This is consistent with a host of research demonstrating that with the introduction of the Euro, people were mostly influenced by face values rather than real monetary values (Gamble, Gärling, Charlton, & Ranyard, 2002; Gamble, Gärling, Västfjäll, & Marell, 2005; Jonas, Greitemeyer, Frey, & Schulz-hardt, 2002).

We propose that these findings may have consequences for the dominant conceptualization of income inequality as being primarily relative. More specifically, we advance the idea that perceived differences between incomes may change when actual income inequality in terms of the most widely used inequality measures such as the GINI coefficient is held constant. As such, we provide evidence that people also attend to absolute differences when judging incomes. As a result, raising incomes with fixed percentage may alter people's perceptions about income inequality, even when buying power is held constant. For example, in the case of 10% increase, people previously earning a \$1000 income would now receive a \$1100 income. Likewise, an identical percentage increase would turn a \$2000 income into a \$2200 income. Although income gaps are identical in relative terms, we propose that people will perceive that income differences have widened. In addition, given that people often ignore units when thinking about money, income differences that are equivalent in relative terms may seem larger when expressed in

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