

Prof. Dr. Klaus Wälde
Gutenberg School of Management and Economics
www.economics.uni-mainz.de/waelde

Behavioural Economic Theory GSEFM 2nd year PhD programme Seminar announcement - Summerterm 2022

1 Background and organization

- Background

Homo oeconomicus is a very useful construct for answering many economic questions. Homo oeconomicus is a bit simplistic when we look at the details of human behaviour that go beyond standard goods-demand functions or simplified saving decisions. Many economists and psychologists have developed models that study individual decision making when emotions matter, when behaviour is time-inconsistent, when behaviour includes automatic and erroneous choices or when individuals do not have unambiguous preferences.

It is the objective of this seminar to understand theories of decision making that take 'human' features into account. While modelling frameworks will be based on standard economic theory, ideas and thoughts originating from psychology of feelings and emotions but also from personality psychology can and should be taken into account.

More generally speaking, the seminar is open to all interested in economic theory that is related to almost anything under the heading of behavioural economics. As long as participants are interested in sound economic model building and links to psychological thinking, this is the seminar to be in. Hopefully the seminar helps at going some steps towards the development of a homo psychologicus.

- Organization

There will be a first meeting at the beginning of the term (to be announced) where topics/papers are briefly presented by the course organizer Prof. Klaus Wälde. Students can then choose a topic. April and May can be used to work on the essay and the presentation. Discussions with the organizer is of course possible and actually strongly encouraged. In June or July there will be two to three meetings (depending on the number of participants) where students present the topic they chose.

A typical essay and presentation would present one paper from the literature in depth, i.e. it is essential to understand each step in the paper and to include the intermediate steps in the essay to be written. Suggesting potential extensions or adding own thoughts, maybe even presenting related own work is also more than welcome.

If you want to be kept up to date about the organizational details of the seminar, please send an email to waelde@uni-mainz.de.

2 Topics of interest for the seminar

Each of the following subsections is a topic which is worth being presented in the seminar. There is not always a clear-cut border between any two of these topics. But they are sufficiently distinct to deserve independent presentation.

2.1 The role of emotions

Defining and classifying emotions is not an obvious task. In fact, this is one of the challenges when working on emotions. The following list is therefore incomplete and in no particular order. Nevertheless, it gives an idea of where emotions have been treated in the economics literature. It also shows that the topic does receive some attention but it needs much more attention if we want to truly understand human behaviour.

emotion	paper
compulsion	Loewenstein et al. (2003)
desire	Laibson (2001)
desire/ compulsion	Bernheim and Rangel (2004) Ameriks, Caplin, Leahy and Tyler (2007) Brocas and Carrillo (2008)
disappointment/ elation	Bell (1985)
disappointment/ regret	Gul (1991), Grant, Kaji and Polak (2001)
fear/ joy	Caplin and Leahy (2001, 2004), Köszegi (2006)
regret	Loomes and Sugden (1982)
stress (distress)	Wälde (2018)

Table 1 *Some emotions treated formally in the economics literature*

A pragmatic approach consists in classifying emotions by their time-structure. One can thereby talk about ex-ante, ex-post and “ex-nunc”, i.e. immediate emotions.

2.1.1 Ex-ante emotions: Psychological expected utility

Ex-ante emotions have been analysed by Caplin and Leahy (2001, 2004) and Köszegi (2006). Emotions are forward looking and based on (equilibrium-consistent) beliefs as in psychological games (Geanakoplos, Pearce and Stacchetti, 1989). The influence of anticipated emotions on choice is analysed using experiments by Mellers et al. (1999).

2.1.2 Ex-post emotions

Regret theory goes back to Loomes and Sugden (1982). Related work on disappointment was undertaken by Bell (1985). In the latter approach, disappointment/ elation is a function of the difference between expected payoff and realization. In the former, regret and rejoicing takes place relative to a reference choice.

The literature on guilt includes Battigalli and Dufwenberg (2007) and Charness and Dufwenberg (2011).

Stress understood as a mismatch between demands and resources to meet these demands can also be classified as an ex-post emotion as it gradually builds up (or reduces) as a function of past mismatches (or matches). The dynamics of stress and the optimal choice of coping behaviour including emotional outbursts is analysed in Wälde (2018). This analysis requires

further development by numerically solving a Bellman equation whose value function falls in its argument.

2.1.3 Instantaneous emotions: Visceral factors

Hunger, thirst, pain, desire can be modeled as state-dependent preferences (Loewenstein, 2000, Laibson, 2001) - or maybe not when people do not remember well emotions in past visceral states, leading to projection bias (Loewenstein, O'Donoghue and Rabin, 2003).

Self-confidence as an emotion that affects performance is analysed by Compte and Postlewaite (2004).

2.2 Dual-self models

“In me there are two souls, alas, and their division tears my life in two” - “Zwei Seelen wohnen, ach! in meiner Brust, die eine will sich von der andern trennen” bewails Goethe's Faust. It seems obvious to many that one individual often has conflicting views when it comes to one issue or decision. The economists' view on this can be seen in Brocas and Carrillo (2008) and Fudenberg and Levine (2006), inter alia. Fudenberg and Levine argue that decisions “should be viewed as a game between a sequence of short-run impulsive selves and a long-run patient self”. Brocas and Carrillo model decisions as the outcome of an interaction between a short-run informed agent and a long-run uninformed principal.

2.3 Self-control, automatic behaviour and errors

In models of self-control, individuals should follow some ideal action but are victims of temptations. A recent empirical paper referring to many theoretical studies is by Ameriks, Caplin, Leahy and Tyler (2007). Theoretical papers include Bernheim and Rangel (2004) and Laibson (2001). The classic “rational addiction” view is by Becker and Murphy (1988).

2.4 Time inconsistent behaviour

The economic literature on time-inconsistent behaviour started with the continuous-time analysis of non-exponential discounting by Strotz (1955). It might be fair to say that the literature really took off with the fascinatingly parsimonious discrete-time modelling of time-inconsistent behaviour by Laibson (1997). Further contributions include O'Donoghue and Rabin (1999) or Benhabib and Bisin (2005).

Surveys or general interest papers are by Prelec (2004), Bryan Karlan and Nelson (2010, footnote 6), Frederick Loewenstein and O'Donoghue (2002) or Caplin Leahy (2006). The latter argue that solution method to be used is dynamic programming, not subgame perfection. A comprehensive textbook treatment, also for many other topics of this seminar, is in Dharami (2016).

2.5 Personality in economics

There is a well-developed empirical literature that takes its motivation from measures of personality originating in personality psychology: the Big 5. It is well known that professional economic success is influenced by the educational background of an individual. Acquired professional skills matter, more fundamental cognitive skills also play a role, as measured e.g. by IQ tests. At the same time, professional success (measured e.g. by annual labour income) also depends on non-cognitive skills. The latter can be described as personality of a person as captured e.g. by the "Big 5" in personality psychology. Analysis by Heckman und Kautz

(2012), Borghans et al. (2008) or Heckman et al. (2006) summarize and contribute to this literature by identifying many channels that support the above statements. They emphasize that, going beyond labour income, occupational choice or health of individuals are also influenced by non-cognitive skills. A seminar paper in behavioural economic theory should study theoretical economic models and understand how personality parameters enter the economic description of human behaviour.

2.6 Resuscitating emotions in economic thinking

The link between psychology and economics is of course much older. Think of Bentham where psychological concepts like emotions played a central role in decision making (see the brief discussion in Loewenstein, 2000). For a revival of the link between subjective well-being (happiness) and choice, see Benjamin et al. (2012), Rayo and Becker (2007) or Kahneman, Wakker and Sarin (1997).

2.7 General background

There are various survey papers on emotion research in economics. They include Elster (1998), DellaVigna (2009, ch. 4.5) and Wälde and Moors (2017). An excellent textbook is by Dhimi (2016).

References

- Battgalli, P., and M. Dufwenberg (2007): “Guilt in Games,” *American Economics Review*, 97(2), 170–176.
- Becker, G. S., and K. M. Murphy (1988): “A Theory of Rational Addiction,” *Journal of Political Economy*, 96(4), 675–700.
- Bell, D. E. (1985): “Disappointment in Decision Making under Uncertainty,” *Operations Research*, 33(1), 1–27.
- Benhabib, J., and A. Bisin (2005): “Modeling internal commitment mechanisms and self-control: A neuroeconomics approach to consumption-saving decisions,” *Games and Economic Behavior*, 52(2), 460–492.
- Benjamin, D., O. Heffetz, M. Kimball, and A. Rees-Jones (2012): “What Do You Think Would Make You Happier? What Do You Think You Would Choose?,” *American Economic Review*, 102(5), 2083–2110.
- Bernheim, D., and A. Rangel (2004): “Addiction and Cue-Tiggered Decision Processes,” *American Economic Review*, 94(5), 1558–90.
- Borghans, L., A. Duckworth, J. Heckman, and B. ter Weel (2008): “The Economics and Psychology of Personality Traits,” *Journal of Human Resources*, 43(4), 972–1059.
- Brocas, I., and J. D. Carrillo (2008): “The Brain as a Hierarchical Organization,” *American Economic Review*, 98(4), 1312–1346.
- Bryan, G., D. Karlan, and N. Scott (2010): “Commitment Devices,” *Annual Review of Economics*, 2(1), 671–698.

- Caplin, A., and J. Leahy (2001): “Psychological Expected Utility Theory And Anticipatory Feelings,” *Quarterly Journal of Economics*, 116(1), 55–79.
- (2004): “The supply of information by a concerned expert,” *Economic Journal*, 114(497), 487–505.
- Caplin, A., and J. Leahy (2006): “The recursive approach to time inconsistency,” *Journal of Economic Theory*, 131(1), 134–156.
- Caplin, A., J. Leahy, and T. Tyler (2007): “Measuring Self-Control Problems,” *American Economic Review*, 97(3), 966–72.
- Charness, G., and M. Dufwenberg (2011): “Participation,” *American Economic Review*, 101(4), 1211–1237.
- Compte, O., and A. Postlewaite (2004): “Confidence-Enhanced Performance,” *American Economic Review*, 94(5), 1536–1557.
- DellaVigna, S. (2009): “Psychology and Economics: Evidence from the Field,” *Journal of Economic Literature*, 47(2), 315 – 372.
- Dhami, S. (2016): *Foundations of Behavioral Economic Analysis*. Oxford University Press.
- Elster, J. (1998): “Emotions and Economic Theory,” *Journal of Economic Literature*, 36(1), 47 – 74.
- Frederick, S., G. Loewenstein, and T. O’Donoghue (2002): “Time Discounting and Time Preference: A Critical Review,” *Journal of Economic Literature*, 40(2), 351–401.
- Fudenberg, D., and D. K. Levine (2006): “A Dual-Self Model of Impulse Control,” *American Economic Review*, 96(5), 1449 – 1476.
- Geanakoplos, J., D. Pearce, and E. Stacchetti (1989): “Psychological Games and Sequential Rationality,” *Games and Economic Behavior*, 1(1), 60–79.
- Granta, S., A. Kajii, and Polak, B. (2001): “Different notions of disappointment aversion,” *Economics Letters*, 70(2), 203–208.
- Gul, F. (1991): “A Theory of Disappointment Aversion,” *Econometrica*, 59(3), 667–86.
- Heckman, J. J., and T. Kautz (2012): “Hard evidence on soft skills,” *Labour Economics*, 19(4), 451–464.
- Heckman, J. J., J. Stixrud, and S. Urzua (2006): “The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior,” *Journal of Labor Economics*, 24(3), 411–482.
- Kahneman, D., P. Wakker, and R. Sarin (1997): “Back to Bentham? Explorations of Experienced Utility,” *Quarterly Journal of Economics*, 112(2), 375–406.
- Kőszegi, B. (2006): “Emotional Agency,” *Quarterly Journal of Economics*, 121(1), 121–156.
- Laibson, D. (1997): “Golden Eggs and Hyperbolic Discounting,” *Quarterly Journal of Economics*, 112(2), 443–477.
- Laibson, D. (2001): “A Cue-Theory of Consumption,” *Quarterly Journal of Economics*, 116(1), 81 – 119.

- Loewenstein, G. (2000): “Emotions in Economic Theory and Economic Behavior,” *American Economic Review*, 90(2), 426 – 432.
- Loewenstein, G., T. O’Donoghue, and M. Rabin (2003): “Projection Bias in Predicting Future Utility,” *Quarterly Journal of Economics*, 118(4), 1209 – 1248.
- Loomes, G., and R. Sugden (1982): “Regret Theory: An Alternative Theory of Rational Choice under Uncertainty,” *Economic Journal*, 92(368), 805–24.
- Mellers, B., A. Schwartz, and I. Ritov (1999): “Emotion-Based Choice,” *Journal of Experimental Psychology*, 128(3), 332–345.
- O’Donoghue, T., and M. Rabin (1999): “Doing It Now or Later,” *American Economic Review*, 89(1), 103–124.
- Prelec, D. (2004): “Decreasing Impatience: A Criterion for Non-stationary Time Preference and Hyperbolic Discounting,” *Scandinavian Journal of Economics*, 106(3), 511–532.
- Rayo, L., and G. Becker (2007): “Evolutionary Efficiency and Happiness,” *Journal of Political Economy*, 115(2), 302–337.
- Strotz, R. (1955/56): “Myopia and Inconsistency in Dynamic Utility Maximization,” *Review of Economic Studies*, 23(3), 165–180.
- Wälde, K. (2018): “Stress and Coping: An Economic Approach,” CESifo Working Paper 6966.
- Wälde, K., and A. Moors (2017): “Current Emotion Research in Economics,” *Emotion Review*, 9, 271–278.