Psychological Games – Theory & Experiments – Readings

I don't like to distribute slides. Instead, I'll provide you with something more useful: a guide for interested students to the framework of psychological game theory (PGT). The paper I presented at the Spring School has its intellectual home with PGT. For warm-up, read it:

Dufwenberg, M. & M.A. Dufwenberg (2018), "Lies in Disguise – A Theoretical Analysis of Cheating," *Journal of Economic Theory* 175, 248-64.

Exercises: (i) Prove that $s \in S$ defined by $s(x)=x+1$ for all $x<n$ and $s(n)=n$ is not a SE for any θ. (ii) Prove that $s \in S$ defined by $s(x)=n$ for all x is not a SE for any high enough θ.

Note that Gneezy, Kajackaite & Sobel (2018, *AER*) present a related theory. Have a look, compare assumptions, and appreciate key differences (see D&D's section 6 for commentary).

Next: Time to get more general. Read sections 1 & 2 (incl footnotes 2-6) of the following article:

Battigalli, P. & M. Dufwenberg (2009), "Dynamic Psychological Games," *Journal of Economic Theory* 144, 1-35.

Then read the rest. Carefully note and understand how B&D's article relates to the earlier work by Geanakoplos, Pearce & Stacchetti (1989, *GEB*).

Next: In previous lectures where I introduced PGT I used guilt aversion as my lead theme. I touched on Dufwenberg's (2002, *JEBO*) example of psychological forward induction, Dufwenberg & Gneezy's (2000, *GEB*) early experimental test, Charness & Dufwenberg's (2006, *Econometrica*; 2010, *Econ. Letters*; 2011, *AER*) considerations of communication, Battigalli & Dufwenberg's (2007, *AER P&P*) general model, Dufwenberg, Gächter & Hennig-Schmidt's (2011, *GEB*) related work on framing, Battigalli, Charness & Dufwenberg (2013, *JEBO*) account of how the model can explain aspects of Uri Gneezy (2006, *AER*) deception data, and Chang, Smith, Dufwenberg & Sanfey's (2011, *Neuron*) neuroeconomics turn. Have a look at all of that and you are ready for more…

Exercises: (iii) Consider Fig. 1 of C&D (2006). Apply B&D's (2007) theory of simple guilt. For which values of θ_B is (*In*, *Roll*) an SE? (iv) Apply B&D's theory of guilt-from-blame. (a) For which values of θ_B is (*In*, *Roll*) an SE? (b) If $\sigma=(\sigma_A,\sigma_B)$ is an SE, describe $\sigma_B(Roll)$ as a function of θ_B.

Next: Learn, apply, and test reciprocity theory! Start out with Dufwenberg & Kirchsteiger (2004, *GEB*) – work through all examples carefully! Carefully note and understand how D&K's article relates to the earlier work by Rabin (1993, *AER*). Then look up also D&K (2000, *EER*), Dufwenberg, Gächter & Hennig-Schmidt's (2011, *GEB*), Dufwenberg, Smith & Van Essen (2013, *EI*), van Damme et al (2014, *JEBO*; section 6), Dufwenberg & Rietzke (2016, mimeo), Jang, Patel & Dufwenberg (2016, mimeo), and Dufwenberg & Patel (2017, *GEB*). And then solve this…

Exercise: (v) Look up Fig. 1 in B&D (2009) and solve that game for all its SREs as defined by D&K (2004), for all values of Y_{12} and Y_{21}.

Finally, study anger theory: read Battigalli, Dufwenberg & Smith (2017, mimeo).

All papers where I was a co-author are downloadable on my homepage:

http://www.u.arizona.edu/~martind1/

Well, that should take a week… have fun!