

## Readings in Matching and Market Design

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### Textbook

Alvin Roth and Marilda Sotomayor, *Two-sided Matching*, 1990,  
Cambridge University Press.

### Reading List

#### 1. Basics Mechanisms in One-Sided Matching

Gale, David and Lloyd, Shapley (1962), College admissions and the stability of marriage, *American Mathematical Monthly*, 69, 9-15.

Shapley, Lloyd and Herbert, Scarf (1974), On cores and indivisibility, *Journal of Mathematical Economics*, 1, 23-37.

Svensson, Lars-Gunnar (1999), Strategy-proof allocation of indivisible goods, *Social Choice and Welfare*, 16, 557-567.

Abdulkadiroğlu, Atila and Tayfun, Sönmez (2003), School choice: A mechanism design approach, *American Economic Review*, 93, 729-747.

#### Extended readings:

Dubins, Lester E. and David A. Freedman (1981), Machiavelli and the Gale-Shapley algorithm, *American Mathematical Monthly*, 88, 485-494.

Roth, Alvin (1982), The economics of matching: stability and incentives, *Mathematics of Operations Research*, 7, 617-628.

L-G. Svensson (1994), Queue allocation of indivisible goods, *Social Choice and Welfare*, 11, 223-230.

## 2. The Deferred-Acceptance Algorithm

Ergin, Haluk (2002), Efficient resource allocation on the basis of priorities, *Econometrica*, 70, 2489-2497.

Kesten, Onur (2006), On two competing mechanisms for priority-based allocation problems, *Journal of Economic Theory*, 127, 155-171.

Kojima, Fuhito and Mihai, Manea (2010), Axioms for deferred acceptance, *Econometrica*, 78, 633-653.

Abdulkadiroğlu, Atila, Parag Pathak and Alvin, Roth (2009), Strategy-proofness versus efficiency in matching with indifference: redesigning the NYC high-school match, *American Economic Review*, 99, 1954-1978.

Erdil, Aytok and Haluk, Ergin (2008), What's the matter with tie-breaking? Improving efficiency in school choice, *American Economic Review*, 98, 669-689.

Kesten, Onur (2010), School Choice with Consent, *The Quarterly Journal of Economics*, 125, 1297-1348.

Tang, Qianfeng and Jingsheng, Yu (2014), A new perspective on Kesten's school choice with consent idea, *Journal of Economic Theory*, 154, 543-561.

Che, Yeon-Koo, Atila Abdulkadiroglu, and Yosuke Yasuda (2011), Resolving conflicting preferences in school choice: The "Boston mechanism" reconsidered, *American Economic Review*, 101, 399-410.

Pathak, Parag and Tayfun, Sonmez (2013), School admissions reform in Chicago and England: Comparing mechanisms by their vulnerability to manipulation, *American Economic Review*.

Kojima, Fuhito (2012), School choice: Impossibilities for affirmative action, *Games and Economic Behavior*, 75, 685-693.

### **Extended readings:**

Chen, Yan and Onur, Kesten (2013), Chinese college admissions and school choice reforms: Theory and experiments, University of Michigan, working paper.

Chen, Yan and Tayfun, Sonmez (2006), School choice: An experimental study, *Journal of Economic Theory*, 127, 202-231.

Ergin, Haluk and Tayfun, Sonmez (2006), Games of school choice under the Boston mechanism, *Journal of Public Economics*, 90, 215-237.

Balinski, Michel and Tayfun, Sönmez (1999), A tale of two mechanisms: Student placement, *Journal of Economic Theory*, 84, 73-94.

Haeringer, Guillaume and Flip, Klijn (2009), Constrained school choice, *Journal of Economic Theory*, 144, 1921-1947.

Kesten, Onur and Morimitsu, Kurino (2013), Do outside options matter in school choice? A new perspective on the efficiency vs. strategy-proofness trade-off, working paper, Carnegie Mellon University.

Klaus, Bettina and Flip Klijn (2005), Stable matchings and preferences of couples, 121, 75-106.

Kojima, Fuhito (2011), Robust stability in matching markets, 6, 257-267.

Hafalir, Yenmez and Yildirim (2013), Effective affirmative action in school choice, *Theoretical Economics*, 8, 325-363.

Kominers, Scott and Tayfun, Sonmez (2014), Matching with slot-specific priorities: Theory, working paper.

Ashlagi, Itai, Yash Kanoria, and Jacob Leshno (2014), Unbalanced random matching markets: The stark effect of competition, working paper.

### **3. The Top-Trading-Cycles Mechanism**

J. Ma (1994), Strategy-proofness and the strict core in a market with strict indivisibilities, *International Journal of Game Theory*, 23, 75-83.

A. Postlewaite, A. Roth (1977), Weak versus strong domination in a market with indivisible goods, *Journal of Mathematical Economics*, 4, 131-137.

S. Pápai (2000), Strategyproof assignment by hierarchical exchange, *Econometrica*, 68, 1403-1434.

M. Pycia, U. Ünver (2014), Incentive compatible allocation and exchange of discrete resources, working paper.

A. Abdulkadiroğlu, T. Sönmez (1999), House allocation with existing tenants, *Journal of Economic Theory*, 88, 233-260.

A. Roth, T. Sönmez, U. Ünver (2004), Kidney exchange, *Quarterly Journal of Economics*, 119, 457-488.

Jaramillo, Paula and Vikram, Manjunath (2012), The difference indifference makes in strategy-proof allocation of objects, 147, 1913-1946.

#### **Extended readings:**

Bird, Charles (1984), Group incentive compatibility in a market with indivisible goods, *Economic Letters*, 14, 309-313.

T. Sönmez (1999), Strategy-proofness and essentially single-valued cores, *Econometrica*, 67, 677-690.

E. Miyagawa (2002), Strategy-proofness and the core in house allocation problems, *Games and Economic Behavior*, 38, 347-361.

L. G. Svensson, B. Larsson (2005), Strategy-proofness, core, and sequential trade, *Review of Economic Design*, 9, 167-190.

A. Abdulkadiroğlu, Y-K. Che, O. Tercieux (2013), The role of priorities in top trading cycles, working paper.

Bade, Sophie (2014), Pareto optimal, strategy-proof, and non-bossy mechanisms, working paper.

Hakimov, Rustamdjan and Onur, Kesten (2014), The equitable top trading cycles mechanism for school choice, working paper.

#### 4. Random Assignment

Bogomolnaia, Anna and Herve, Moulin (2001), A new solution to the random assignment problem, *Journal of Economic Theory*, 100, 295-328.

Kojima, Fuhito and Mihai, Manea (2010), Incentives in the probabilistic serial mechanism, 106-123.

Abdulkadiroğlu, Atila and Tayfun Sönmez (1998), Random serial dictatorship and the core from random endowments in house allocation problems, *Econometrica*, 66, 689-701.

Pathak, Parag and Jay, Sethuraman (2011), Lotteries in student assignment: An equivalence result, *Theoretical Economics*, 6, 1-17.

Erdil, Aytek (2014), Strategy-proof stochastic assignment, *Journal of Economic Theory*, 151, 146-162.

Kesten, Onur (2009), Why do popular mechanisms lack efficiency in random environments? *Journal of Economic Theory*, 144, 2209-2226.

#### **Extended readings:**

Che, Yeon-Koo and Fuhito, Kojima (2010), Asymptotic equivalence of probabilistic serial and random priority mechanisms, *Econometrica*, 78, 1625-1672.

McLenna, Andrew (2002), Ordinal efficiency and the polyhedral separating hyperplane theorem, 105, 435-449.

Carroll, Gabriel (2014), A general equivalence theorem for allocation of indivisible objects, *Journal of Mathematical Economics*, 51, 163-177.

Bade, Sophie (2013), Random serial dictatorship: The one and only, working paper.

Bogomolnaia, Anna and Eun Jeong, Heo (2012), Probabilistic assignment of objects: Characterizing the serial rule, *Journal of Economic Theory*, 147, 2072-2082.

Hashimoto, Tadashi, Dasuke Hirata, Onur Kesten, Morimitsu Kurino and Utku Unver (2014), Two axiomatic approaches to the probabilistic serial mechanism, *Theoretical Economics*, 9, 253-277.

Kesten, Onur and Utku, Unver (2014), A theory of school-choice lotteries, *Theoretical Economics*, forthcoming.

Hylland, R. Zeckhauser (1979), The efficient allocation of individuals to positions, *Journal of Political Economy*, 87, 293-314.

Budish, Eric (2011), The combinatorial assignment problem: approximate competitive equilibrium from equal incomes, *Journal of Political Economy*, 119, 1061-1103.

He, Yinghua, Antonio Miralles and Jianye Yan (2012), Competitive equilibrium from equal incomes for two-sided matching, working paper.

Zhou, Lin (1990), On a conjecture by Gale about one-sided matching problems, *Journal of Economic Theory*, 52, 123-135.

## **5. Matching with transfers**

Crawford, Vincent and Alexander, Kelso (1982), Job matching, coalition formation, and gross substitutes, *Econometrica*, 50, 1483-1504.

Klemperer, Paul and Elizabeth, Baldwin (2014), Tropical geometry to analyse demand, working paper, Oxford University.

Sun, Ning and Zhaifu, Yang (2006), Equilibria and indivisibilities: Gross substitutes and complements, *Econometrica*, 74, 1384-1402.

Hatfield, John and Paul, Milgrom (2006), Matching with contracts, *American Economic Review*, 95, 913-935.

Ostrovsky, Michael (2008), Stability in supply chains, *American Economic Review*, 98, 897-923.

Gul, Faruk and Ennio, Stacchetti (1999), Walrasian equilibrium with gross substitutes, *Journal of Economic Theory*, 87, 95-124.

### **Extended readings:**

Shapley, Lloyd and Martin, Shubik (1971), The assignment game I: The core, *International Journal of Game Theory*, 1, 111-130.

Crawford, Vincent and Elsie, Knoer (1981), Job matching with heterogeneous firms and workers, *Econometrica*, 49, 437-450.

Gul, Faruk and Ennio, Stacchetti (2000), The English auction with differentiated commodities, 92, 66-95.

Demange, Gabrielle, Gale, David and Marilda, Sotomayor (1986), Multi-item auctions, *Journal of Political Economy*, 94, 863-872.

Echenique Federic (2012), Contracts versus salaries in matching, *American Economic Review*, 102, 594-601.

Hatfield, Kominers, Nichifor, Ostrovsky, and Westkamp, Stability and competitive equilibrium in trading networks, *Journal of Political Economy*, 121, 966-1005.

Fujishige and Yang (2003), A note on Kelso and Crawford's gross substitutes condition, *Mathematics of Operations Research*, 28, 463-469.

Andersson, Tommy and Lars-Gunnar, Svensson (2013), Non-manipulable house allocation with rent control, *Econometrica*, forthcoming.

Liu, Mailath, Postlewaite and Samuelson (2014), Stable matching with incomplete information, *Econometrica*, 82, 541-587.

## **6. Lectures and literature surveys**

SHUFE market design reading group: <http://shufemd.weebly.com/>

Kojima, Fuhito, Lecture notes

Jerusalem Summer School in matching and market design (with recorded lectures, 2014): <http://www.as.huji.ac.il/schools/econ25>

Abdulkadiroglu (2011), School choice, *Handbook of market design*

Abdulkadiroglu and Sonmez (2010), *Matching markets: Theory and practice*, *Econometric Society*.

Sonmez and Unver (2011), Market design for kidney exchange, Handbook of market design

Sonmez and Unver (2011), Matching, allocation, and exchange of discrete resources, Handbook of Social Economics