

*Laudatio* of

**Muriel Niederle**

by Prof. Jean-Robert Tyran (University of Vienna)

at the occasion of the award of the

Oskar Morgenstern Medal

by the Faculty of Business, Economics and Statistics at the University of Vienna

October 7, 2021

Dear Muriel!

Dear Mrs. Morgenstern-Papp,

Dear Minister Fassmann,

Dear Dean Sorger,

Dear Colleagues, Dear Students, Dear participants who follow the ceremony online,

It is a great pleasure and honor to deliver the *laudatio* of Muriel Niederle.

At present, Muriel Niederle is the Levin Professor of Economics at Stanford University in California.

*How did she get there?* The short answer is: Through outstanding scientific contributions which have shaped the profession in her field. Her contributions have

shaped the profession because they are innovative, original, and relevant. I will later explain more about the substance of her work and highlight particular masterpieces from her vast vita, but let me now just say briefly here that she is a Behavioral and Experimental Economist, and that she has made important contributions to the study of Market Design, and of Gender.

Her scholarly work has earned her an outstanding reputation and high esteem in the profession. Accordingly, she has been awarded numerous honors and she has obtained an impressive list of appointments. I would just like to mention three now:

- She is an Alfred P. Sloan Research Fellow
- She is a Fellow of the Econometric Society, and
- a Research Associate at the National Bureau of Economic Research.

Prof. Niederle indeed had a most impressive career, and this career started – I am proud to point out -- **here**, here at the University of Vienna.

Muriel Niederle earned the equivalent of a master's degree in Mathematics from the University of Vienna. She then boldly decided to pursue her career not in cozy Vienna but to go out and conquer the world, so to speak. In fact, she moved to Cambridge, Massachusetts, to earn her PhD in Economics at **Harvard** University. It took her about 5 years to complete the PhD in 2002.

At Harvard, she was supervised by a stellar team of economists: Alvin Roth, Drew Fudenberg and David Laibson. Muriel's time in Harvard were her formative years, and the match of her supervisors' world-class expertise with Muriel's curiosity, willingness to work hard, and her vast talents was just *perfect*. Indeed, the

combination of fields of her supervisors – game theory, behavioral economics and experimental economics – set the stage for her later career.

Let me now answer the key question: *Why is Prof. Niederle awarded the Oskar Morgenstern Medal today?*

*With Prof. Niederle, the Faculty of Business, Economics and Statistics honors a scholar who has made ground-breaking contributions to economics. In addition, her research has a high impact. Her research contributes to saving lives, to make people happy in their work and even in romantic relations. Importantly, her research is a contribution to paving the way to a more just world, with more gender equality and diversity.*

Let me now explain why this is so.

I will proceed by **selectively** reviewing and commenting on the substance of Prof. Niederle's *oeuvre*. I have to be selective because the body of her works is vast. For example, her Google scholar page lists 118 items that have appeared over the last 20 years or so. More than a dozen of these works have been published in so-called "top five" journals of economics. I have selected a few contributions that I find particularly illustrative of the citation I just read, and I will present the works in **three groups**.

The first group is concerned with issues of basic science and proper methods in experimentation, the second group with market design, the third with gender.

The **first group** concerns fundamental contributions to behavioral economics. Muriel has done experimental work on the relevance of fairness concerns, on contingent reasoning, and on cognitive abilities, among other topics. But I would like to briefly highlight some of her work on **time preferences** because it also very

nicely serves to illustrate her contribution to improving **methods** of experimentation.

Many economic activities involve choices over time. Obvious examples are investment and saving. Standard economics has developed theories of *rational* intertemporal choice, and an important property of rational choices are that they are *consistent* or more precisely, “time-consistent”. What does that mean? An agent who today prefers A over B should also do so tomorrow (if nothing relevant to the choice has happened in-between, i.e., as long as A and B are the same today and tomorrow).

But various studies have claimed a phenomenon called “dynamic inconsistency” which can be illustrated as follows: when people are asked whether they prefer to get 100 euro in one year from now or to get 105 euros in a year *plus one week*, most people are patient and go for the higher amount, 105 euros. But when the year has elapsed and people are asked again: do you want 100 euros now or 105 euros next week, some go for the immediate reward which means that their preferences between the options have switched. Such a pattern of inconsistent choice is also called *present bias* which might explain why people tend to procrastinate on difficult but important tasks, why they postpone to quit smoking, to start a diet, or to save for retirement.

Experimental tests of dynamically inconsistent time preferences have largely relied on choices over time-dated *monetary* rewards, as in the example I just gave with the 100 vs. 105 euros. However, studies using monetary rewards are prone to “*confounds*”. For example, participants in the experiment may not trust the experimenter to keep his promise to pay in the future. A switch in choices may thus be more related to beliefs about the experimenter’s *reliability* than to time preferences.

In an article published 2015 with Ned Augenblick and Charles Sprenger in the *Quarterly Journal of Economics*, Muriel Niederle found ingenious ways to sidestep such confounds and compare choices over **real effort** tasks – in which the authors find substantial present bias -- rather than money – in which they find little present bias. And they show that the choices made over *real* efforts are more relevant in the sense that they predict well other choices (especially the demand for commitment devices) that are in line with time inconsistency.

Scholarly work that eliminates sources of confounds and thereby improves methodological practice, is part of the epic quest for robust and replicable results in science. But there are of course several routes to promoting the reliability of scientific knowledge. One way to obtain reliable experimental results is replication. **Replication** is a key aspect of experimentation because it makes knowledge *intersubjective*. Anyone doubting the result of an experiment can simply repeat it to check for him or herself whether the result holds.

In psychology, there has recently been a „**replication crisis**“ because many highly-publicized results simply failed to be replicated. Alerted by these findings, economists also engaged in systematic replication exercises, which fortunately turned out to be much more successful. But the episode made clear that while replications are important, researchers have little incentives to replicate other people’s work. They normally prefer to test new hypotheses because the professional rewards for doing so are higher.

In a paper joint with Lucas Coffman and Alistair Wilson, published in the *American Economic Review* in 2017, Muriel makes a proposal to promote replications by, first, strengthening the incentives for replication work and, second, by drawing more attention to the replications that are conducted. In particular, she proposes that top journals publish short “replication reports” which could

summarize novel work replicating an existing high-impact paper, or they could highlight a replication result embedded in a wider-scope published paper. In addition, she suggests incentivizing replications with the currency of our profession: *citations*. Enforcing a norm of citing replication work alongside the original would provide incentives for replications to both authors and journals.

In a related methodological contribution published with Lucas Coffman in the *Journal of Economic Perspectives* in 2015, Muriel agrees that **pre-analysis plans** which describe how data will be collected and analyzed before a project begins, are useful for large-scale “one-of-a-kind field experiments”. But she argues that enthusiasm for pre-analysis plans should be tempered in experimental economics, and that encouraging replications is more promising to clamp down on “*p*-hacking” and other misleading practices.

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Let me now turn to the **second group** of Muriel Niederle’s works which concerns **market design**. Her work in this domain focuses on when decentralized markets work well, why they might fail, and how one might improve them.

As we have seen above, properly conducted experiments can be used to “speak to theorists”, i.e., to promote our understanding of when our theories succeed or fail to explain the behavior of real people. But experiments can also be used to address practical issues, and *to improve our lives*. One could call this the “Engeneering approach” to economics. This type of research has a clear policy orientation – it is “whispering into the ears of Princes”, as Al Roth put it so aptly and poetically.

Muriel has studied a large number of **matching markets**. These are markets in which you cannot just choose what you want (even if you can afford it), you also have to be chosen. College admissions in the US are a case in point, and many labor markets are *two-sided matching markets*, where both sides have preferences.

From her impressive body of work on matching markets, I would like to mention a whole bunch of papers to improve the market for **Gastroenterologists** -- these are medical doctors focusing on disorders of the digestive system. Finding ways to better allocate talented doctors to suitable hospitals improves performance of the doctors, the hospitals, and the overall medical system. Hence, improving the matching of doctors in some sense is a matter of life and death.

Muriel's work on medical matching markets exemplifies the use of laboratory experimentation in conjunction with game-theoretic analysis, discussions with practitioners about institutional detail, and pilot experiments in the field, to solve highly relevant problems. Muriel has published several of these papers together with Alvin Roth, and it is only a slight exaggeration to say that by doing so, she has contributed to the work that earned Al Roth the Nobel Prize in 2012.

Al Roth says the following in his Nobel Prize lecture: "Experiments ... are one of the tools of market design. They would not carry the day alone: we would not convince medical administrators to implement a stable algorithm just because we found it worked well in the lab. But experiments amplify and help us understand what we are seeing in the field data, and they also help us communicate it."

Muriel has not only studied how to better match doctors to hospitals, she has also used her extraordinary analytical skills and her vast experimental talent to study how to match freshly minted PhDs in economics to Universities. And she has also studied "dating markets", i.e. how to better match men and women who are looking for romance or a suitable spouse.

In these markets, she has studied how sending a credible *signal* can improve matches. In a paper published in the journal *Experimental Economics* in 2015 called "propose with a rose", Muriel conducted a field experiment in an online dating market in Korea with her co-author Soohyung Lee. The paper showed that

when participants were endowed “virtual roses” that a participant can use for free to signal special interest when asking for a date, the quality of matches improved. By sending a rose, a person can substantially increase the chance of the offer being accepted, and the possibility of sending roses increased the total number of dates.

Muriel has also helped to improve the “Job market for New Economists”. In a paper published 2010 with a number of co-authors in the *Journal of Economic Perspectives*, she shows that signaling improved market outcomes. Similar to the Koreans looking for romance, applicants in the economics job market could send signals to up to two employers prior to interviews at the January Allied Social Science Associations meetings.

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The **third group** of her work concerns **gender issues**. A key concern in this literature is to identify why we observe different outcomes in the **labor market** for men and women, and how this knowledge can be used to devise well-targeted and evidence-based policies to reduce inequality, to improve gender justice, and labor market fairness.

Muriel’s work on gender has received much attention in academia and in the media. Her work is highly cited by scholars, has informed public policy debates, and has attracted considerable attention in the media. For example, the *Wall Street Journal*, *Forbes Magazine* and *The Atlantic* have reported on her work. Because Muriel is one of the world’s leading experts in using experimental economics to study gender issues, she has been invited to author a chapter on “Gender” in the *Handbook of experimental economics* that appeared in Princeton University Press in 2017.

In principle, gender differences in labor market outcomes can be due to many factors like discrimination, differences in abilities and skills, preferences, or a



combination thereof, and is difficult, if not impossible, to clearly isolate one of these factors when all the other factors also differ and change over time in uncontrolled ways.

One possible explanation of why men and women have different labor market outcomes is that men and women differ with respect to their *psychological* traits. This claim seems to have some intuitive appeal. For example, about 150 years ago, Charles Darwin thought that psychological gender differences are important. He wrote (Charles Darwin, 1874, p. 586): “[w]oman seems to differ from man in mental disposition, chiefly in her greater tenderness and less selfishness ... Man ... delights in competition, and this leads to ambition which passes too easily into selfishness.”

Muriel writes in this survey that “The study of gender differences has almost since its inception been plagued by ideologically guided interpretations”. It is therefore all the more important to provide scientific, robust and replicable evidence and to present it in a balanced way. Accordingly, Muriel reviews studies in her handbook article that have used experiments to elicit *preferences on risk and time, as well as social preferences*. She points out that “these differences, while significant, are sometimes small”, a finding which is in line with surveys in the psychological literature. In contrast, she argues that experimental evidence suggests that ***gender differences in competitiveness*** are often pronounced and robust.

Her own work on gender differences has received much attention and has been highly influential. The main conclusion of her most highly cited paper published in the *Quarterly Journal of Economics* in 2007 with Lise Vesterlund is that “women shy away from competition and men embrace it”. In this paper, she studies entry into a competitive environment (a so-called tournament) in a situation when there are *no* ability differences between men and women. She finds that men are about

twice as likely to enter the competition because they are more confident, in fact they are *overconfident*, that they will win.

In a fascinating study published in the *Quarterly Journal of Economics* in 2014 with Hessel Oosterbeek and Thomas Buser, she demonstrates the **external validity** of laboratory studies in understanding gender differences in *career choices*, i.e., in the field. The paper shows that a measure of competitiveness elicited in the laboratory predicts actual career choices of high school students in the Netherlands very well. Unfortunately, women are, despite similar levels of academic ability, less competitive in the laboratory measure, and also tend to choose less ambitious careers.

She has many more exiting experimental findings on gender, and I hope she will address the *implications* they have for *policy choices* in her lecture later today. Let me just mention two more papers. The first was published in 2012 in *Management Science* with Lise Vesterlund and Carmit Segal. It shows that introducing a **gender quota** can have beneficial consequences if it encourages high-performing women to apply in the first place. The second is an NBER working paper from the current year, 2021. In this paper, she argues with a bunch of co-authors that the *aggressive culture in economics seminars* in the US is a potential reason why talented women leave academia. While the study has not been replicated for Europe, I fear that the situation might be similar in other countries, and it would be worthwhile to carefully observe the situation also here at the University of Vienna in this respect.

Before I close with reading the citation for the medal once more, let me say that Muriel Niederle is an extremely well-rounded and highly accomplished economist. She has broad interests and the necessary talents and methodological skills to address diverse topics. She is sociable as is clear from the large number of her co-authors. Some of these are themselves leaders in the field, but she has also

published with many junior economists, thus promoting their academic careers. I think Muriel is also a great **role model** for our junior economists here at the University of Vienna, and I hope that Muriel's career inspires some of them to get out and conquer the world, so to speak.

*With Prof. Niederle, the Faculty of Business, Economics and Statistics honors a scholar who has made ground-breaking contributions to economics. In addition, her research has high impact. Her research contributes to saving lives, to make people happy in their work and even in their romantic relations. Importantly, her research is a contribution to paving the way to a more just world, with more gender equality and diversity.*

Dear Muriel, my warmest **congratulations** to the award of the Oskar Morgenstern medal 2021!