

“Almost nothing I planned happened . . .
Perhaps what happened was better!”

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Back on the same campus, 37 years later

- 1989: Three years after it admitted its first students, I arrived as a freshman at a brand-new university “with many unknowns.”
- 2026: Same campus; I am the speaker at your first lecture.
- The 37 years in between, in one line:

Almost nothing I planned happened...
Perhaps what happened was better!

- The story of an electrical and electronics engineering graduate who became an **economist** and ended up building systems that save lives.

Plans and outcomes

Plan	Happened? What happened instead?	
Become a scientist	Yes	
Become an electrical engineer	No	Became an economist
Do an MBA at Bilkent	No	Master's in economics
Finish the economics master's, go back to engineering, live in Turkey	No	Ph.D. in economics and the American adventure
Write a thesis in economic theory	No	An experimental and computational thesis
Keep doing applied economics	Partly	Back to theory, plus applied theory and policy: transplant programs, adoption, drug allocation
Stay in Turkey for good	No	Boston; but Istanbul, Ankara, and Malatya always in my life; more impact in an applied field

- Every deviation from a plan turned out better than the plan. Today I will tell you **how** that happened and **Bilkent's share in it**.

My childhood

- Born in 1971 in Ankara; grew up in Ankara.
- Middle and high school: Ankara Atatürk Anadolu High School.
- **Interests:** hobby **electronics** (soldering, circuits); soccer and track; reading.
- **Childhood dream:** I had no clear plan for the future, but I was always drawn to the **basic sciences** and **mathematics**.
- **Economics** was nowhere in this picture; no social science was.

Then again, I have never met a small child who dreamed of becoming an economist.



Ankara Atatürk Anadolu High School

- A selective, ambitious public school; it still is.
- I was a good student.
 - Two passions in high school: **mathematics** and **physics**. Prizes in national math and physics competitions; training for the International Physics Olympiad team.
 - My physics teachers and my love of electronics $\Rightarrow$ the idea that “I will be an engineer.”
 - Top ten in Turkey in both university entrance exams, in different score categories.



Ankara Atatürk Anadolu High School,

1989

Why Electrical and Electronics Engineering?

1. My interest in physics and hobby electronics. It looked like the most natural continuation.
 2. The “safe bet.” In the Turkey of those years, the secure profession that families, teachers, everyone pointed to was electrical and electronics engineering.
 3. The best students went there. That year, the lowest-ranked student admitted to Bilkent EE was 126th in Turkey.
- All three were perfectly sensible reasons at the time.
 - You have a “safe bet” of your own right now. Mine changed completely later; yours may too. That is not a bad thing.

Bilkent, 1989

- Founded in 1984 by **Prof. Dr. İhsan Doğramacı**, the first private (foundation) university in Turkey. When I arrived it had only three years of teaching behind it.
- Young, ambitious, a place with many unknowns. But the classes before us had made a very good start.
- Instruction in English; world-class faculty with Ph.D.s from abroad.
- Its resources were far above what Turkey was used to:
 - Small classes,
 - Easy access to professors,
 - A beautiful library, a small but wonderful campus life,
 - Brand-new buildings and labs,
 - Dorm rooms even for students from Ankara,
 - Scholarships with a monthly stipend for good students.

Bilkent Department of Electrical and Electronics Engineering

- Four years of **rigorous** engineering education.
- My grades were neither very high nor very low, but above average.
- Our department chair, **Prof. Dr. Abdullah Atalar**, and the founding faculty had a line I probably did not pay much attention to at the time — one later used in the department's own publicity:

"Our EE graduates move into different fields and succeed there."

- A department that counts a student's move to another field as a "gain" rather than a "loss": I learned what that means by living it.

What Bilkent gave me (1): Grit and determination

- Perhaps the most important life lesson I learned [here](#): there are many very smart people in this world; what sets you apart is grit and determination in reaching a goal.
- My classmates were the smartest young people in Turkey; from them I learned that **too hard** is not a concept, only a psychological barrier.
- **Your major does not define you; it is only your starting point:** whether you happily stay in it or chart a different path for yourself.



Bilkent, 1993

What Bilkent gave me (2): A view of the world

- I danced in the Bilkent Folk Dance Ensemble.
- With the ensemble we traveled to Belgium and the Soviet Union.
- Early 1990s, the last days of the Cold War: for an engineering student from Ankara, this is how the doors of the world opened.
- The school did not just teach classes; it showed me the world.
- Bilkent was perhaps the university that brought together young people from the most diverse socioeconomic backgrounds in Turkey.
- I made many friends from every group. I learned sides of our society I had never known and could not have learned anywhere else.



Belgium, 1990

Turning point (1): EE, MBA, or Economics?

- 1993: EE graduation. Honest confession: after four years of rigorous engineering, I was **a bit burned out**.
- The original plan: an **MBA**. Seeing the ads aimed at engineers, I applied to both the MBA and the economics master's at Bilkent; the EE master's was already on the table. **I was admitted to all three**. Economics was the one I knew the least about.
- To weigh EE, MBA, and economics, I asked **Haldun Özaktaş**, a professor who had just joined the department and was close to me in age; he **encouraged** me to move to business or economics. My advisor **Ömer Morgül** agreed.
- The preparatory **summer courses** I took after being admitted to the Economics Department **completely put me off** the MBA. One more of my plans gone.
- So the Bilkent Economics Department had some **foresight** back then: bringing engineers into economics. I am still in close touch with the friends who made the same move in those years.

Turning point (2): Falling for economics

- New plan: finish the economics master's and **go back to engineering**.
- That plan failed too. The Economics faculty, above all the mathematical economist **Semih Koray** (also my master's thesis advisor), the econometrician **Asad Zaman**, and the microeconomist **Mehmet Baç**, made me love economics as a whole.
- My master's thesis was on regulation and mechanism design. The math from my undergraduate years had been enough to do work in "very interesting areas" of economics.
- The biggest surprise of my life was discovering how **fundamental, mathematical, and beautiful** a social science economics is.
- I would learn later, though, that mathematics is only a **tool and a language**, and that becoming an economist takes much more.

What Bilkent gave me (3): Two academic visions

- The **mathematics** I learned in engineering, especially **discrete mathematics**, became one of my biggest advantages in economics; it taught me to see problems from different angles.
- But the engineering mindset was about **practical results**: whatever the mathematical impossibilities, you have to **build something that works well**.
- Economics turned out far more **theoretical** than I expected, and than engineering: data analysis matters, but it is mostly a field of “**toy models**” built to explain real life, allowing only **small interventions** in it; **big interventions carried very big responsibility**.
- My current field can be called a **synthesis** of the two: my work is **theory-based**, but unlike most economists I always think first about its **practical applications**.
- **Lesson**: learning the mindsets of two disciplines is a rarer advantage than going deep in one. **I combined the engineer's emphasis on “practicality” with the economist's question “why?”**

Pittsburgh: the Ph.D. (1995–2000)

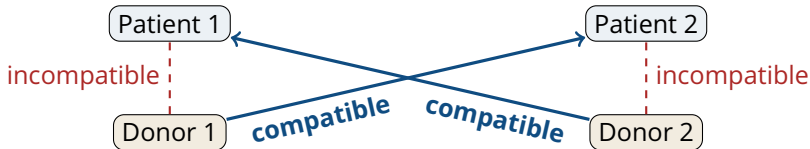
- University of Pittsburgh, Ph.D. in Economics, 2000.
- Advisors: John Duffy and Alvin E. Roth.
- The Bilkent life lesson, continued:
“Economics is not just supply and demand. In this science of how to allocate scarce resources most efficiently, you can even found a new subfield if you want.”
- Three tools together: game theory + experiments + computation
⇒ Applied market design and matching:
— How should the labor markets of young professionals be designed?
- 1999: Society for Computational Economics best graduate student paper award.
- **Lesson:** the math I brought from engineering was a good start; but I realized I could not succeed without learning the new field from the inside.
Your tools come with you, but they are not enough.

Turning point (3): Koç University (2000–2005)

- 2000: Koç University, Assistant Professor.
- 2003: With Tayfun Sönmez (Bilkent EE '90) and Alvin Roth, we started working on living-donor kidney exchange.
- A topic that was not in any plan whatsoever.

Kidney exchange

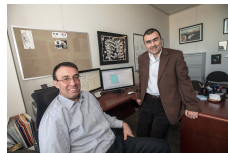
- The best treatment for chronic kidney disease: a transplant. Years of waiting for a deceased-donor organ; dialysis.
- The alternative: a living donation from a relative. But **about half** of the kidneys offered are blood- or tissue-incompatible.
- Organs **cannot be bought or sold**. No prices. But there is **matching**:



- Incompatible pairs swap donors; everyone receives a compatible kidney. Organizing this for **thousands of pairs**, fairly and in a way that cannot be gamed:
market design.

2004: The world's first organized exchange program

- **2004: New England Program for Kidney Exchange**
– the first program run on economic efficiency principles. We wrote and **donated** the models and software. It later grew into the **U.S. national system** (UNOS).
- **2005: Alliance for Paired Donation**, Ohio; three-way exchanges; “never-ending” altruistic donor chains. Today the U.S., U.K., Canada, and others run on these principles.
- **Lesson:** from an office in Istanbul we started something worldwide. Key: the **right partners** (Sönmez, Roth), the **right question** (“how to allocate without prices?”).
- **Plan:** stay in Turkey. Failed again: back to my Ph.D. school as faculty ⇒ better market design work.



With Tayfun Sönmez, 2014

The work that won our coauthor a Nobel Prize



- **2012:** our coauthor (and my former advisor) **Alvin Roth** shared the Nobel Prize.
- Bilkent News, October **2012**: three names with **17 papers** cited in the Nobel Committee's scientific background – **Atila Abdulkadiroğlu** (EE '93), **Tayfun Sönmez** (EE '90), **Utku Ünver** (EE '93).
- **All three are Bilkent EE graduates**, and all three became economists.
- After me, other Bilkent engineers moved into economics too; some into this field.
- **Matching theory** is known among economists as "**the Turks' field of microeconomics**." Truth be told, it is largely **Bilkent Engineering's field of economics**.
- Boston College since **2008** (Professor, **2011**). **2013** TÜBİTAK Special Award; **2014** Science Academy of Turkey; **2014** INFORMS Edelman Award; **2024** İnönü Honorary Doctorate.

TÜBİTAK Special Award, 2013



Source: TÜBİTAK, 48th Award Ceremony, December 3, 2013

From kidneys to livers: Malatya

- Livers are harder: the donor gives a **part** of the organ (*Econometrica* 2017, 2020).
- **İnönü University** (Prof. Sezai Yılmaz), the Banu Bedestenci Sönmez System, since June 2022:
 - **437** exchange transplants; **first in the world by a wide margin**.
 - **40–45%** of all living-donor transplants at the institute.
 - **About twice** what the whole world had done in the previous **20 years**.
 - The world's first **4-, 5-, 6-, 7-, and 8-way** exchanges.
- Next: **India**.



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Honorary Doctorate, İnönü University, 2024



Why am I lucky?

Economics has been defined as the science of **the most efficient use of scarce resources**. Very few economists get to work on a problem that fits this definition so closely and at the same time **directly saves human lives**.

- I can prove my theorems at my desk and, the same day, run a hospital's transplant list.
- This is definitely not the standard situation for an economist.
- Bilkent's education and vision, and my training in two different fields, had a very large part in it.

To those just starting at Bilkent (1)

- **Make plans, but do not fall in love with them.** The surprises that bring the greatest happiness and success may lie in the deviations from your plans.
- **Take risks.** Bilkent taught me to take risks; it was a trait I never had before. Moving from engineering to economics, going to the U.S., telling a hospital “let us build a system for you”: all of them were risks.
- **Grit and determination.** I learned this at Bilkent too. After Bilkent I was shocked to see how **little grit** people have. The pace of work you consider normal here will set you apart outside.
- **You do not have to confine your curiosity to your major.** Use Bilkent’s opportunities; take courses in other departments.
- **Learn tools:** mathematics, programming, writing, English. Tools change fields; they come with you.

Even in the age of **AI** you will not get far without these basics: AI is an assistant all too ready to dull you, and of no real use in work whose foundations you do not understand.

To those just starting at Bilkent (2)

- Join clubs and student groups; go abroad if you can. What folk dance, Belgium, and the USSR were for me, something else will be for you.
- Make friends from every group. Do not get stuck in your own crowd; the others teach you the most about human nature and the sides of your country you do not know.
- Life is a long-distance run. Learn to pace your breath and energy in college. Making **grit and determination** a character trait will keep you in shape for life.
- Sports and physical activity are part of that fitness and variety. It began with folk dance at Bilkent; I still run regularly (**more than twenty half marathons**) and go trekking with my family. It does wonders for my physical and mental health.



Life is a long run, too

To those just starting at Bilkent (3)

- **Look for good mentors and partners.** Nobody has changed the world alone. The “lone genius” is only a romantic fantasy.
- **Do not be afraid of what is new.** Newly founded fields and institutions are often better suited to breakthroughs than some old ones. I learned this at a three- (or five-) year-old Bilkent; I lived it again in market design, a young field.
- **Trust the strength of growing up in Turkey and of Bilkent.** The world stage is closer than you think.
- **And finally: even if you are far from Turkey, do not lose touch.** I am trying to **pay back** to Turkey what I received from **Prof. Dr. İhsan Doğramacı**’s vision, unmatched at the time, and from Bilkent.

Thank you

Almost nothing I planned happened...

Perhaps what happened was better!

- My thanks go to my family, my high school, my teachers, my coauthors, and Bilkent.
- Giving this lecture is a great honor for me.
- One, or many, of you will be on this stage one day.

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