**JTM556: From Laika to Lycra: Science and Technology in the Cold War**

Dr. Rosamund Johnston ([rosamund.johnston@univie.ac.at](mailto:rosamund.johnston@univie.ac.at))

This course examines the centrality of science and technology to everyday life and political rhetoric during the Cold War, exploring the reasons for the faith in and simultaneous fear of science and technology articulated at the time. It asks how science and technology shaped the Cold War and, conversely, how the Cold War shaped scientific research and technological innovation. Importantly, it questions the extent to which research and development undertaken during the period should be understood as “Cold War science,” examining whether other frameworks (such as modernization, industrialization, decolonization, and automatization) better explain the transformations discussed.

While stressing parallels on both sides of the Iron Curtain, this class focuses on thematic case studies from Eastern Europe--an area frequently overlooked by historians of science and technology. *Science and Technology in the Cold War* combines guest lectures and secondary reading with an introduction to primary source analysis.

*Aim of the course*

In this course, students will develop their source analysis skills, and improve their presentation and writing capabilities.

Students will develop their own opinions on:

* The actors and drivers of historical change, including the extent to which material objects can themselves drive historical change
* The extent to which the Cold War can, and cannot, provide an explanatory framework for historical events which took place in the second half of the twentieth century
* Whether the European continent was characterized by a Cold War divide and/or enduring cultural similarities during the period, as well as how the case of Czechoslovakia might shed light on this
* The extent to which science and technology “lost” Eastern Europe the Cold War, alongside the limits to this narrative of failure

*Course completion requirements*

Students are expected to have read the required readings in advance of class and to come to the lesson prepared to discuss them. Their participation grade will be assessed on this basis. In addition, on a module of their choice, students will prepare a 10-15 minute presentation, in which they engage with both the required and optional readings for that topic. Following the presentation, students will submit a 5-page written accompaniment to their talk. At the end of the term, students will submit a ten-page final paper which explores a relevant theme of their choice in more depth. This should include primary source analysis as well as reference to secondary literature. Students will identify the set of primary sources they wish to use in cooperation with the course instructor by the third day of lessons.

*Breakdown of grading*

Participation 20%

Class talk 20%

Written accompaniment (5 pages) 20%

Final paper (10 pages) 40%

*Syllabus*:

**Introduction, the Arms Race, the Space Race**

*October 17*

Module 1: Introduction

Can technologies have politics? And to what extent should we understand scientific research that took place during the Cold War to be “Cold War science”?

Required reading:

David C. Engerman “Social Science in the Cold War” in *Isis* Vol. 101, No. 2 (June 2010), pp. 393-400

Langdon Winner, “Do Artifacts Have Politics?” in *The Whale and the Reactor: A Search for Limits in an Age of High Technology* (Chicago: University of Chicago Press, 1986), pp. 19-39

Optional reading:

Mëhilli, Elidor. “Technology and the Cold War” in Kalinovsky, Artemy & Daigle, Craig (eds.) *The Routledge Handbook of the Cold War* (London: Routledge, 2016) pp. 292-304

Doug Hill, *Not So Fast: Thinking Twice about Technology* (Athens, GA: University of Georgia Press, 2016), pp. 47-78

Naomi Oreskes, “Science in the Origins of the Cold War” in Naomi Oreskes & John Krige, *Science and Technology in the Global Cold War*, pp. 1-11

*October 18*

Module 2: The Arms Race

How did weapons spur hostilities and, on the contrary, foster international friendships during the global Cold War? How much autonomy did non-superpower states have when it came to shaping the Cold War through the development and export of weapons? And how were science and scientists harnessed by states engaged in the arms race?

Required reading:

David Holloway, “Nuclear Weapons and the Escalation of the Cold War, 1945-1962” in Melvyn Leffler & Odd Arne Westad (eds.), *The Cambridge History of the Cold War* Vol. 1 (Cambridge: Cambridge University Press, 2010), pp. 376-397

Daniela Richterova, Mikuláš Pešta, Natalia Telepneva, “Banking on Military Assistance: Czechoslovakia’s Struggle for Influence and Profit in the Third World 1955–1968” in *International History Review*, Vol. 43, No. 1 (2021) pp. 90-108

Optional reading:

Thomas Mahnken, Joseph Maiolo & David Stephenson (eds.), *Arms Races in International Politics: From the Nineteenth to the Twenty-First Century* (Oxford: Oxford University Press, 2016)

Sara Bridger, *Scientists at War: The Ethics of Cold War Weapons Research* (Cambridge, MA: Harvard University Press, 2015)

Philip Muehlenbeck, *Czechoslovakia in Africa, 1945-1968* (New York: Palgrave Macmillan, 2016) pp. 87-123

Harold James, *Krupp: A History* (Princeton, NJ: Princeton University Press, 2012), pp. 226-295

Module 3: The Space Race

What was at stake in the space race? How were the space race and the arms race linked? And how was the space race harnessed to mobilize populations, East and West, behind the Cold War goals of the camps in which they lived?

Required reading:

Gabrielle Cornish, “Music and the Making of the Cosmonaut Everyman” in *Journal of Musicology*, Vol. 36, No. 4 (2019), pp. 464-499

Asif Siddiqi, “Fighting Each Other: The N-1, Soviet Big Science, and the Cold War at Home” in Naomi Oreskes & John Krige, *Science and Technology in the Global Cold War*, pp. 189-227

Optional reading:

Erik M. Conway, “Bringing NASA Back to Earth: A Search for Relevance During the Cold War” in Naomi Oreskes & John Krige, *Science and Technology in the Global Cold War*, pp. 251-273

Volf, Darina, “Evolution of the Apollo-Soyuz Test Project: The Effects of the ‘Third’ on the Interplay Between Cooperation and Competition” (<https://link.springer.com/article/10.1007/s11024-021-09435-8>)

**Energy, the Environment, and Media**

*October 31*

Module 4: Media

How did the Cold War shape media networks and infrastructures? To what extent can belief in Communism and anti-Communism elucidate why and how people engaged with media during the Cold War? To what extent are media responsible for the end of the Cold War?

Field Trip to the TV Tower in Žižkov

Required reading:

Rosamund Johnston, “Listening in on the Neighbors: The Reception of German and Austrian Radio in Cold War Czechoslovakia” in *Central European History*, Vol. 54, no. 4 (December 2021) pp. 603-620

Optional reading:

Melissa Feinberg, *Curtain of Lies: The Battle over Truth in Stalinist Eastern Europe* (New York: Oxford University Press, 2017)

Alice Lovejoy and Mari Pajala (eds.) *Remapping Cold War Media: Institutions, Infrastructures, Translations* (Bloomington, IN: Indiana University Press, 2022)

Kristin Roth-Ey, *Moscow Prime Time: How the Soviet Union Built the Media Empire that Lost the Cultural Cold War* (Ithaca & London: Cornell University Press, 2011)

*November 1*

Module 5: The Environment

How did science and technology come to shape the environment during the Cold War? What were the ambitions of those undertaking such projects? How did Cold War rhetoric serve to justify and dispute such shifts?

Required reading:

Richard Tucker, “Containing Communism by Impounding Rivers: American Strategic Interests and the Global Spread of High Dams in the Early Cold War” in J. R. McNeill & Corinna Unger (eds.), *Environmental Histories of the Cold War*, pp. 139-164

Optional reading:

Matěj Spurný, *Making the Most of Tomorrow: A Laboratory of Socialist Modernity in Czechoslovakia*. Prague: Karolinum Press, 2019, pp. 279-351

Thomas Fleischmann, *Communist Pigs: An Animal History of East Germany’s Rise and Fall* (University of Washington Press, 2020)

Module 6: Energy

What role did energy play in shaping Cold War geopolitics? How did Cold War geopolitics underwrite “ordinary people’s” everyday experiences of traveling, going about their work, and heating their homes?

Required reading:

Frank Bösch, “Energy diplomacy: West Germany, the Soviet Union, and the oil crises of the 1970s” in *Historical Social Research*, Vol. 39, No. 4 (2014), pp. 165-184

David S. Painter. "Oil and Natural Resources" in *Cambridge History of the Cold War, Vol. I* (Cambridge, UK: Cambridge University Press, 2010), pp. 486-507

Optional reading:

Sonja D. Schmid, “Nuclear Colonization?: Soviet Technopolitics in the Second World” in Gabrielle Hecht (ed.) *Entangled Geographies: Empire and Technopolitics in the Global Cold War* (Cambridge, MA: MIT Press, 2011)pp. 125-154

David S. Painter. "From Linkage to Economic Warfare: Energy, Soviet-American Relations, and the End of the Cold War” in *Cold War Energy: A Transnational History of Soviet Oil and Gas*, edited by Jeronim Perovic (London: Palgrave Macmillan, 2017), pp. 283-318.

Matěj Spurný, *Making the Most of Tomorrow: A Laboratory of Socialist Modernity in Czechoslovakia*. Prague: Karolinum Press, 2019, pp.145-189

**The Transformation of Science, Psychology, and Computing**

*November 21*

Module 7: The Transformation of Science

How did the end of the Cold War affect science and knowledge production in Central and Eastern Europe? To what extent can universities be seen as microcosms of broader social transformations taking place at the time?

Guest lecture: Jan Surman (Masaryk Institute, Czech Academy of Sciences)

Required reading:

Jan Surman & Daria Petushkova, “Between Westernization and Traditionalism: Central and Eastern European Academia during the Transformation in the 1990s,” *Studia Historiae Scientiarum*, Vol. 21

*November 22*

Module 8: Cold War Subject Formation

How did human psychology become a terrain on which the Cold War was to be fought? How did the claims that governing elites made on the minds of their citizens differ from those that had preceded the Cold War? What did such claims mean for different specific social groups such as soldiers, scientists, and patients?

Required reading:

Ana Antic, “Raising a true socialist individual: Yugoslav psychoanalysis and the creation of democratic Marxist citizens,” *Social History*, February 2019, pp. 86-115

Optional reading:

Monica Kim, *The Interrogation Rooms of the Korean War* (Princeton, NJ: Princeton University Press, 2019) pp. 1-31

Rebecca Lemov, “’Hypothetical Machines’: The Science Fiction Dreams of Cold War Social Science,” in *Isis*, Vol. 101, No. 2 (2010), pp. 401-411

Module 9: Computing and the Information Society

To what extent do conceptual designations like “the information society”--devised to describe Western Europe and the United States in the last quarter of the twentieth century--apply to Central and Eastern European countries which were, at the period, markedly less computerized? Which groups in these socialist societies did, nevertheless, harness the potential of computer technologies to further their own interests? At the expense, perhaps, of whom?

Required reading:

Jaroslav Švelch, *Gaming the Iron Curtain: How Teenagers and Amateurs in Communist Czechoslovakia Claimed the Medium of Computer Games* (MIT, 2018) excerpts TBC

Elena Aronova, *Scientific History: Experiments in History and Politics from the Bolshevik Revolution to the End of the Cold War* (Chicago: University of Chicago Press, 2021), pp. 132-157

Optional reading:

Marie Hicks, *Programmed Inequality: How Britain Discarded Women Technologists and Lost its Edge in Computing* (Cambridge, MA & London: MIT Press, 2017)

**Health, Consumer Culture, and Backwardness?**

*December 12*

Module 10: Health and Medicine

What impact did the Cold War have on medical research and treatment? Which communities of healthcare professionals were created and/or disrupted by Cold War conflict?

Guest lecture: Dr. Ema Hrešanová (FSV UK)

Required reading:

HREŠANOVÁ, Ema - MICHAELS, Paula. “Socialist Science across Borders: Investigating Pain in Soviet and Czechoslovakian Maternity Care.” *Revue d'Etudes Comparatives Est-Ouest*. 2018, 49(1), 45-69

Dora Vargha (2021). Technical assistance and socialist international health: Hungary, the WHO and the Korean War. *History and Technology*, 36(3-4), 400-417

Optional reading:

Marcos Cueto, *Cold War, Deadly Fever: Malaria Eradication in Mexico, 1955-1975* (Johns Hopkins University Press, 2007)

*December 13*

Module 11: Consumer Culture

How important were consumers and consumer industries to scientists and government ministers in socialist states? How was the scientific-technological revolution, in Susan Reid’s words, “domesticated?” And what can consumer artifacts from this period reveal of the functioning of the socialist societies in which they circulated?

Required reading:

Susan Reid, “The Khrushchev Kitchen: Domesticating the Scientific-Technological Revolution” in *The Journal of Contemporary History*, Vol. 40, No. 2 (2005), pp. 289-316

Optional reading:

Eli Rubin, *Synthetic Socialism: Plastics and Dictatorship in the German Democratic Republic* (Chapel Hill: UNC Press, 2012)

Valentina Fava, *The Socialist People’s Car: Automobiles, Shortages, and Consent in the Czechoslovak Road to Mass Consumption* (Amsterdam: Amsterdam University Press, 2013)

Module 12: Technological Backwardness?

How might science and technology have “lost” Eastern Europe the Cold War? How and why might we challenge this narrative of Eastern bloc technological “failure”?

Required reading:

Ivan T. Berend, *Central and Eastern Europe, 1944-1993* (Cambridge University Press, 2009), pp. 182-221

Optional reading:

Peter Svik, *Civil Aviation and the Globalization of the Cold War* (New York: Palgrave Macmillan, 2020) pp. 119-145

Timothy Mitchell. *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002)