

35. SCIENCE POLICY AND THE CONSTITUTION

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Former Senator Schmitt Cites Strong Constitutional Justification for Selected Federally Funded Research

The Founders understood the importance of science and technology in the long-term future of the United States. Without science and engineering advancement, in the face of advancement by others, America could not compete with our ideological and economic challengers. Imagine our world if Nazi Germany had atomic weapons or the former Soviet Union had developed nuclear submarines or had reached the Moon before America.

The Founders demonstrated their understanding of the critical role of individual creativity in American progress by specifically delegating constitutional power to Congress “To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” (Article I, Section 8, Clause 8). The economic and personal incentives for Americans to invent and publish have grown from this remarkable clairvoyance.

The Founders did not intend for the “Science and useful Arts” Clause alone to give broad constitutional justification for federal funding of scientific and technology research. Clearly, the Founders only meant for this Clause to apply to the fruits of research activities by individuals. Federal pro-

tection of intellectual property by copyright and patent law flows from this constitutional power.

Scientific and technological advancement funded by the Federal Government has a strong constitutional foundation in the Preamble’s mandated promotion of the “common Defence and general Welfare.” Specifically, the Congress has enumerated powers in this regard in Article I, Section 8. Implementation of those powers logically requires federal involvement in science and engineering research, as follows:

- Clause 5 – fixing of “the Standard of Weights and Measures.”
- Clause 6 – detection and prevention “of counterfeiting.”
- Clause 7 – establishment and implied improvement of “post Roads” and, by logical extension, more modern means of delivering communications.
- Clause 8 – evaluation of “Discoveries” in “Science and the useful Arts” for the purpose of “securing...exclusive rights” for “Inventors.”
- Clause 12 and 13 – “support” of “Armies” and maintenance of “a Navy” and, by logical extension, fu-

ture forces necessary to the “common Defence.”

- Clause 15 and 16 – support of the “Militia” and their use to “repel Invasions.”

Clause 18 of Section 8 further gives Congress the power “to make all laws necessary and proper for carrying into Execution the *foregoing* Powers, and *all other Powers vested by this Constitution* in the Government of the United States, or in any Department or Officer thereof.” It should be noted by the added emphasis in bold that this Clause limits Congress to only the execution of the Government’s constitutionally *enumerated* powers.

Relative particularly to national security, clear Article I constitutional support therefore exists for federal sponsorship, directly or indirectly, of science and technology research that applies to the following:

- Weapons of all kinds that can effectively support the functions of the armed forces.
- Natural, agricultural, and other resources required for national security.
- Military logistics technologies and transportation systems, including national highways, waterways, rail systems, and aeronautics and space systems.
- Nationally critical energy systems and the basic sciences that underlie such systems the development of which lies beyond the capabilities of the people acting in their private capacities.
- Potential future military technologies such as space and missile defense, external threat sensing, cyber attack, and so forth.

- National border protection and enforcement.
- Medical research applicable to the maintenance of a healthy population from which soldiers are drawn as required and to the treatment of wounded soldiers and veterans.
- Climate and weather as they impact national security.

Under Article II, the Executive also has enumerated powers that require support from science and engineering research but which require budgetary concurrence by the Congress and, of course, congressional approval of necessary levels of supporting taxation or debt. Article II, Section 2, Presidential powers include:

- Clause 1 – acting as “Commander in Chief of the Army and Navy...and of the Militia...when called into the actual Service of the United States...”
- Clause 2 – negotiating and making “Treaties” on which the Congress must provide “advice and consent.”

Also under Clause 2 of Article II, Section 2, Presidents have the power to appoint “...by and with Advice and Consent of the Senate...all other Officers of the United States...whose Appointments...shall be established by Law...” including individuals responsible for federally supported research in science and technology. Any appointments with significant executive powers not submitted to the Senate for confirmation, such as President Obama’s “czars” are clearly unconstitutional.

Although the Congress, under Article I, Section 8, Clause 18, can legislate both responsibilities and constraints on the execution of the President’s Article II power of Appointments, Article I limits Congress to its own enumerated powers. Constraining

Congress even further, the Founders did *not* provide in Clause 18 for Congress to go beyond enumerated powers in defining the specific responsibilities of Presidential Appointments “established by law”. Science and technology research necessary to support the authorized functions of Departments and Agencies, therefore, must adhere to the limits of the enumerated powers of Congress; that is, it would be unconstitutional for Presidential appointees to be given budgetary authority to undertake activities that Article I does not state as being within the power of Congress to authorize or fund.

How, then, can “Appointments” in the Executive be given clear authority to carry out their constitutional responsibilities? First of all, through the Oath of Office, the President gains significant latitude in directing some such officers to assist him to “preserve, protect and defend the Constitution of the United States.” This constitutional discretion expands further in the Article II, Section 2, Clause 1, designation of the President as “Commander in Chief of the Army and Navy of the United States, and of the Militia of the several States, when called into actual Service of the United States...” Departments such as Defense, Homeland Security, and Justice, as well as the Intelligence Agencies, can be managed directly by the President, but only within the bounds of the Bill of Rights and other Constitutional Amendments. In this, the President only needs Congressional concurrence on overall budgets.

Budget concurrence creates critical balance of power limitations on the President as Commander in Chief but cannot, constitutionally, be used to prevent Presidents or the Congress from providing for the “common Defence” in any significant way. Both entities share this mandated function. For not carrying out that mandate, Presidents can be

impeached and Members of Congress can be removed in their next election cycle.

Article II, Section 2, Clause 1, further expands Presidential Executive power by stating “he may require the Opinion, in writing, of the principal Officer in each of the executive Departments, upon any Subject relating to the Duties of their respective offices...” This language indicates that the Founders expected Presidents to exercise significant control over the activities of all Executive Departments and, by extension, future Agencies that might be created by law.

The fact that the Constitution does not define the functions of any Executive Department, outside those implicit in enumerated powers, indicates an intent that this definition would be left to the interplay between the Congress and the Office of the President. The need for the Executive to deal with national defense and matters of state, treasury, commerce, law enforcement, and postal service derives from Articles I and II. The Founders, on the other hand, intentionally created what they hoped would be a balancing tension between the Executive and the Congress through Presidential executive power being moderated by Congress’ power over the purse and specific enumerated legislative powers.

The President, with funding concurrence by the Congress, therefore has significant discretion in assigning science and technology research duties to federal Departments and Agencies so long as Congress can constitutionally fund their implementation. Development of weapons and intelligence gathering systems and systems that support the armed forces overall are obvious examples of the exercise of this constitutional discretion. Persuasive constitutional arguments also can be made for federal support

of science and technology research in medicine, agriculture, energy, and natural resources based on the specific applicability to national security of research projects in these arenas. An increasingly healthy population and the obvious need for indigenous supplies of food, energy, and raw materials provide adequate justification for most of the research activities of related federal Departments. These arguments find strong support in history and in consideration of possible future national security threats and the need for improved and more diverse means of meeting those threats.

The Constitution, on the other hand, does not empower the Congress to provide funding for, nor can the President direct, research that does not have specific applicability to powers enumerated in Articles I or II. This fact calls into question the constitutionality of research on societal, economic, cultural, demographic, and educational issues that have no direct relationship to national security or constitutionally required congressional redistricting and that could be carried out through privately funded institutions, associations, cooperative State initiatives, and businesses rather than by the federal government. The 10th Amendment relegates decisions on the conduct of such soft research to the people or the States.

Constitutional rationale for “big” science and technology projects that have costs, time commitments, and national security implications and lie beyond those addressable by the private sector alone lies in their tangible contributions to the implementation of the Article I powers of the Congress and the Article II powers of the President. Since the nation’s founding, federally supported or managed big science and engineering efforts have contributed to national defense or to treaty enforcement. Notably, such projects include canals, locks, dams, and levees be-

ginning in the early 1800s; agricultural research through Land Grant academic institutions created in 1860s and 1890s; the Transcontinental Railroad in the late 1860s; construction of the Panama Canal at the turn of the 20th Century; aeronautical research that began early in the 1910s; continuously upgraded defense and reconnaissance systems since the 1940s; the Manhattan Project of the 1940s; development of a Nuclear Navy and related power systems, communication satellites, and the Interstate Highway System in the 1950s; and the Apollo Moon-landing Program of the 1960s.

Even though strong constitutional support exists for significant federal funding of science and engineering research, the justification for such support becomes blurred relative to big and small, pure science projects exploring the edges of our understanding of nature. Although difficult to quantify, their constitutional rationale for selective support of pure scientific research lies primarily in the stimulation of educational initiatives that train the scientists and engineers that ultimately serve more direct constitutional functions, particularly national security.

Unfortunately, the once bright future for both federally and privately funded science and technology research has dimmed in the United States. Mismanagement of federal projects is endemic. A federal attack on private academic and research institutions has commenced through unconstitutional regulatory interference. Further, unless the next Congress and the next President contain and reduce the national debt and the cost and reach of both entitlements and unnecessary regulations, remaining taxpayers will have little money left to fund future research no matter how important and constitutional.

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