Politics and Imagination

Soviet Children's Culture and the Space Age, 1957-1964

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1. Introduction

As the first man-made satellite orbited the Earth in October 1957, radios worldwide transmitted its persistent signal. *Sputnik's* pulsing beep was either the most exhilarating proof to date of man's rapid technological development, or a haunting reminder that, in the bi-polar world, science and technology had become the yardstick by which ideological battles were won or lost. For some the incessant tone represented the triumph of Soviet socialism. For others, it meant a new and harrowing challenge to Western democracy and capitalism. Though these perspectives were, in fact, inseparable, each represented a quantitatively different worldview in the ideologically contentious atmosphere of the Cold War. Regardless of where one stood in this polemic, *Sputnik* represented the first foray into a realm previously explored only in works and dreams of scientific and literary visionaries.

The emergence of the space age in the middle of the twentieth century had an enormous impact on virtually every sphere of international life. *Sputnik* was the 'shot' that set thousands of scientists, millions of rubles (and dollars), and a seemingly endless stream of propaganda in motion, from both East and West. The early years of the Soviet space program offer an interesting and important perspective on Soviet history precisely because of this massive mobilization of resources. No group, from the most exalted party *apparatchik* to the lowest *kolkhoz* worker (and such class distinctions were well entrenched and problematic for the Khrushchev regime, as chapter 3 will discuss) was immune from *Sputnik's* influence. This paper seeks to explore the influence of this epoch-defining event on a group whose members were not defined primarily by class affiliation or profession but rather by age: Soviet children.

A great deal has been written on the political impact of *Sputnik* and the subsequent space race on the Soviet Union, the United States, the Cold War, and the post-war bi-polar international system. The first chapter of this paper is concerned with these issues and seeks to briefly outline the political environment from which *Sputnik* emerged, and upon which it exerted such a significant impact. Chapter 1 considers the Stalinist origin of the Soviet space program, specifically Stalin's transformist obsession and the Soviet quest for Empire, and argues that it was from the convergence of these two trends that the desire to 'storm the cosmos' emerged. The first chapter attempts to place the program in political perspective, and it discusses key themes and ideas that reappear in subsequent chapters.

Following from this overview, the second chapter examines the cultural roots of space in the Soviet Union, examining pre- and post-revolutionary interest in the cosmos and the drive to turn fantasies of space into reality. Neither pre-revolutionary Russia nor the Soviet Union lacked visionaries who were absorbed with thoughts of the heavens. Dostoevsky, Kibal'chich, Tsiolkovsky, and Bogdanov are but four of the best known of these dreamers, and though they each may have invoked space for different reasons, their individual visions evidence the particular relevance of space in Russian cultural history. This second chapter is necessary to link the political and scientific manifestations of the Soviet space program to the broader cultural context which will be examined in Chapter 4. By demonstrating that the idea of space held wide currency in Russia and the Soviet Union long before *Sputnik*'s launch, it will then be possible to describe the particular consequences of that event in Soviet children's culture. This chapter demonstrates that space was indeed a powerful, relevant, and deeply rooted force in Russian cultural history, and its reemergence in the literature for children in the late 1950s can therefore be seen as an important cultural event, rather than an anomaly.

Combined, these two chapters represent the first distinct section of this study, and demonstrate the political and cultural factors which led the Soviet Union to be lauded as the unquestioned leader in space technology at the outset of Khrushchev's reign.

After discussing the cultural nature and political manifestations of the Soviet space program, the subsequent chapters, accounting for approximately two thirds of this study, examine the impact of *Sputnik* and the space race specifically on children's culture in the Khrushchev era. The third chapter investigates the educational reforms (the 'polytechnical' reforms) undertaken by Khrushchev beginning in 1958, and their ultimate failure shortly thereafter. Faced with a looming labor shortage from the 'war dent,' an entrenched white-collar class, and a burgeoning military-industrial complex (of which the space program was part), Khrushchev sought to redefine education in order to remove the stigma from manual labor jobs which desperately needed to be filled. Interest groups in the sciences and the privileged elite put up too strong an opposition, however, and these reforms were stymied before they were ever fully enacted.

Finally, the fourth and longest chapter is a thematic exploration of the images and stories of space, space travel, and more generally, space science, offered to children during the Khrushchev era. This final chapter explores articles and stories about space printed in the Soviet journal for children, *Koster*[1], between 1957 and 1964. In opposition to the stated goals of the 1958 polytechnical reforms, the stories consumed by children during this era represented the cosmonaut-scientist as an archetypical hero and science as a heroic force, thereby confounding attempts to rehabilitate the idea of

[1] In researching this paper, *Murzilka*, a journal with a target audience younger than that of *Koster,* was also considered. Because *Murzilka* was directed at *mladshie shkol'niki* (under-10s), it is consistently less politicized than *Koster* and consequently less relevant for the scope of this paper. Additionally, *Murzilka* contains far fewer stories and articles about space, though it does contain numerous images. Typically, however, these images are cartoons (often involving the small bear for which *Murzilka* is named), and are largely devoid of the political/moral content found in *Koster*. It is for these reasons, and because of space considerations that *Murzilka* is cited only twice, both in reference to Yuri Gagarin in chapter four.

labor among Soviet youth. The contradiction inherent between the regime's need for manual laborers and their glamorization of science and space is further elucidated by a discussion of the related themes of "man and machine," and "space and time" present in the stories of this period.

The four sections of this paper will, it is hoped, demonstrate the impact of the Soviet space program on the lives of young people in the Soviet Union while offering interesting insights into the aspirations of the regime *vis-à-vis* its children. Because the success of *Sputnik* appeared to say so much about Soviet science, technology, education, politics, economics, society and ideology, it offered a truly extraordinary opportunity to propagandize on the superiority of the Soviet model, both within Soviet borders and internationally. Thus, with regard to the Soviet Union's view of itself, and the international community's perception of it, the situation of the regime between *Sputnik*'s launch in 1957 and Khrushchev's ouster in 1964 was certainly unique. The ways in which the regime attempted to use its successes in space and science to influence its children says a great deal about Khrushchev, his ambitions, and about Soviet culture in the years after Stalin. The Khrushchev era was marked by a struggle between the politics of the regime and the imaginations of its children. This paper will consider these aspects of Soviet political and cultural life, and the means by which the state attempted – and failed – to mold and manipulate the imaginations of its children during this era.[2]

[2] Throughout this paper certain primary source materials are cited in translation. For these citations, the translated source is cited first, followed by the original publication information in italics.

2. Politics and Space

The origins of the Soviet space program

The political origins of the Soviet space program emerged from the confluence of two trends which gained widespread currency under Stalin. First, the desire to effect a "transformation of nature" by means as massive in scope as they were in size, and secondly, the quest for Empire. The former trend, though certainly having roots in Leninist programs such as "Electrification plus Soviet power equals Communism," for example, emerged as a singularly Stalinist platform following World War II. The Stalinist plan was officially unveiled in on October 20, 1948 as the appropriately titled "Great Stalinist Plan for the Transformation of Nature," and entailed a colossal restructuring of Soviet agriculture, a complete restructuring of the industrial landscape, as well as a project for the "transformation of the face of the capital." The grandiloquent concept did not end with the transformation of the physical space of the Soviet Union, however. Rather, the idea of transformation was extended to virtually all spheres. At its core, Stalinist "transformative thinking [was] fundamentally opposed to any conception which endows the object which is to be transformed with developmental autonomy; it must not have spontaneous internal forces for growth or change which the transformer has to reckon with and respect, because that would impose unwanted limits upon the extent to which the object could be transformed from without."[3]

At its most menacing, the post-war desire to transform the environment was manifested in party dictates demanding the restructuring of Soviet science along political lines, and as a force opposed to Western, "bourgeois" science. The post-war restructuring of Soviet science was based on the Lamarckian principle of inherited

[3] Robert C. Tucker, "Stalin and the Uses of Psychology," *World Politics* 8 (July, 1956): 457. To maintain consistency "transformism," a term coined by Tucker in this article, is used throughout this study to describe this aspect of Soviet, and specifically Stalinist culture. In the scientific literature the term "transformationism" is typically used to describe this idea, which is derived from Lamarckian biology.

characteristics. The idea that the environment, or "nurture" rather than "nature," was the key factor in the development of organisms offered a structural framework from which science could turn its attention more fully to the creation of the New Soviet Man.[4] This trend towards strict environmental determinism was effectively encapsulated in the controversy surrounding the president of the All-Union Lenin Academy of Agricultural Sciences, Trofim Lysenko, and his plan for the reorganization of Soviet agriculture under the auspices of "Michurinist" scientific theory. Under the influence of Lysenko's theories, the restructuring of Soviet science effectively brought "biology, agronomy, and genetics...to the chopping block, and Soviet agricultural science fell into a decline from which it never recovered."[5] Although Lysenko's agricultural theories were baseless and he began to attract criticism as a policy maker shortly before Stalin's death, the transformist idea that he embodied survived into and beyond the Khrushchev era. In the spring of 1961, Khrushchev reinstated Lysenko as president of the All-Union Lenin Academy of Agricultural Sciences, signifying a "large step backward for the

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[4] The Khrushchev era definition of the New Soviet Man appears as part of the Program of the Communist Party, as adopted by the 22nd Party Congress in 1961. See N. S. Khrushchev, "On the Program of the Communist Party of the Soviet Union - II," *Current Digest of the Soviet Press* XII (1961): 17. *Pravda and Izvestia, Oct. 19, pp. 1-10.* Section IV, The Development of Communist Social Relations and the Molding of the New Man is particularly relevant. For more on the New Soviet Man, see also Raymond Augustine Bauer, *The New Man in Soviet Psychology*, (Cambridge, 1952), Alexander Etkind, "Psychological Culture," in *Russian Culture at the Crossroads*, ed. Dimitri N. Shalin (Boulder, 1996), Klaus Mehnert and M. Rosenbaum, *The Anatomy of Soviet Man*, Revised ed., (London, 1961), William G. Rosenberg, ed., *Bolshevik Visions: First Phase of the Cultural Revolution in Soviet Russia*, (Ann Arbor, Michigan, 1984), Tucker, "Stalin and the Uses of Psychology."

[5] Jeffrey Brooks, *Thank You, Comrade Stalin! : Soviet Public Culture From Revolution to Cold War*, (Princeton, N.J., 2000). 213. For more on the state of science generally during the Stalin era see the following: on the links between the Soviet social environment and science, see Loren R. Graham, *Science in Russia and the Soviet Union*, (Cambridge, 1993). On the theoretical and ideological underpinnings of Soviet science see Loren R. Graham, *Science and Philosophy in the Soviet Union*, (London, 1973). On the links between the reconstruction of Soviet science in the 1920s and 1930s, failures of Soviet science in the 1970s, 1980s and 1990s, and the collapse of the Soviet Union see Loren R. Graham, *The Ghost of the Executed Engineer: Technology and the Fall of the Soviet Union*, (Cambridge, Mass ; London, 1993). Although it suffered less than biology, agronomy and genetics, physics was not immune to the pressures of Stalin's reconstruction of the sciences, though it did retain a modicum on independence during the period. For more on Soviet physicists, their coping methods, and Stalinist attempts at centralization see chapters 5-9 in Paul R. Josephson, *Physics and Politics in Revolutionary Russia*, (Berkeley ; Oxford, 1991). For a specific account of Lysenko's scientific tyranny, see David Joravsky, *The Lysenko Affair*, (Cambridge, Mass, 1970).

international reputation of Soviet science, which only a few months before had a new cause for pride – Yuri Gagarin's first manned space flight in April, 1961."[6] Gagarin himself echoed the sentiments of Stalinist transformism in his address for radio and television, given shortly before his historic launch: "At this instant the whole of my life seems to be condensed into one wonderful moment...To be the first to enter the cosmos, to engage, single-handed, in an unprecedented duel with nature – could one dream of anything more!"[7]

Concurrently, the Soviet predilection for the gigantic, a trend in Soviet life which predated Stalin but reached its apotheosis under that leader, provided the regime with a framework for its massive transformative campaign. Under Stalin, the grandiosity of design and size implied in Lenin's electrification scheme was brought to fruition. Ziegler has argued that, "Soviet official culture, and to a certain extent Soviet popular culture, frequently make a fetish out of the massive."[8] At the First Congress of Soviet Architects in 1934 its president, Aleksei Shchusev, made a case for the Soviet state as the successor to the splendor *in extremis* of the Roman empire: "in this area we alone are the direct heirs of Rome: only in socialist society and with the help of socialist technology is construction possible *on a still greater scale* and of still greater artistic perfection."[9] It is not coincidental, then that these two trends should intersect in one of the crowning achievements of this idea: "the massive Moscow University building of 1953 on the hills overlooking the city – a striking tribute to the priority accorded to science and education in the Communist outlook."[10]

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[6] Zhores A. Medvedev, *Soviet Science*, (Oxford, 1979). 87.
[7] *Yuri Gagarin: The First Cosmonaut*, (Moscow, 1977). 7.
[8] Charles E. Ziegler, "Soviet Images of the Environment," *British Journal of Political Science* 15 (Jul., 1985): 366.
[9] Cited in Geoffrey A. Hosking, *Russia and the Russians : A History*, (London, 2001). 478. Italics added.
[10] Ibid. 479.

The Stalinist conception of Empire was premised on a number of mutually reinforcing ideas. First, as a corollary to the Stalinist conception of science described above, the Stalinist idea of Empire was based on the idea of man as master of nature. This was certainly one of the principal motivating ideas behind Stalin's Great Plan, and it relied on Michurin-Lysenkoist science for its structure. Michurin neatly summed up the Stalinist view of man and nature: "We cannot expect charity from nature. Our task is to take our bounty from her."[11] This attitude towards nature is underpinned by the philosophical objectivity of Marxism, such that, "Once the laws of natural development are mastered, society can conduct its activities in accordance with these laws."[12] Under the auspices of this idea, the land and resources of the massive Soviet state existed for the exploitation of those who properly understood these laws, namely Stalin and the imperial center. In accordance with this doctrine, the drive to maximize the center's usage of the periphery (seen as 'uncivilized' wasteland ripe for transformation) would be pushed to its logical extreme, culminating in a process of Sovietization undertaken during the Stalin era, perceived as Russification by the peoples of the periphery. Language, culture, politics, and the economy were increasingly subjected to control and manipulation by Moscow. A popular joke of the of the post war era, following the Empire's expansion into Eastern Europe, portrays the subject's view of Soviet imperialism, and combines it with a (perhaps unintentional) sub textual comment on the nature of Soviet science: "In Eastern Europe, the most important post-war Soviet invention is thought to be the cross-breeding of a giraffe with a cow. The new animal eats in the fraternal countries and is milked in the Soviet Union."[13]

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[11] Cited in James Von Geldern and Richard Stites, *Mass Culture in Soviet Russia: Tales, Poems, Songs, Movies, Plays, and Folklore, 1917-1953*, (Bloomington, 1995). 455.
[12] Ziegler, "Soviet Images of the Environment," 374.
[13] Von Geldern and Stites, *Mass Culture in Soviet Russia: Tales, Poems, Songs, Movies, Plays, and Folklore, 1917-1953*. 488.

In spite of Khrushchev's refutation of Stalinist policy in his secret speech at the 20th Party Congress, the nature of the system he inherited, a system he had helped create, meant that trends such as those outlined above persisted. In spite of the failure of Lysenko's agricultural theories and his brief fall from official favor, his ideas remained as one of many "research" trends within Soviet science.[14] He personally continued to work as a researcher until his death, at which time "his coffin was displayed for mourners in the main hall of the presidium of the Academy of Science of the USSR [where] some of his old friends and followers...extolled the great contribution of the deceased to the development of Soviet and world science."[15] The Stalinist near-obsession with transformism certainly found an advocate in Khrushchev. His years in power were marked by a transformist agenda as grand in scope as Stalin's, and of which the emerging space program was but one manifestation.[16] His continuation of these trends was made explicit at the 21st Party Congress, held in January 1959. Khrushchev described *Sputnik*'s launch as "a vivid demonstration of the high industrial and technical development of the Soviet Union. The whole world admiringly hailed this triumph as the opening of a new era in the history of man's *subjugation of nature*."[17]

"The Storming of the Cosmos"

During the post-Stalin interregnum, Soviet science became intimately linked with the struggle for succession. In the waning years of Stalin's life,

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[14] Medvedev, *Soviet Science*. 55.
[15] Ibid. 56.
[16] The Virgin Lands program, for example, was as ambitious and resource intensive as the space program. On this topic, see Frank A. Durgin, Jr., "The Virgin Lands Programme 1954-1960," *Soviet Studies* 13 (Jan., 1962), Jerzy F. Karcz, "The New Soviet Agricultural Programme," *Soviet Studies* 17 (Oct., 1965), Richard M. Mills, "The Formation of the Virgin Lands Policy," *Slavic Review* 29 (Mar., 1970), Lazar Volin, "Soviet Agriculture under Khrushchev," *The American Economic Review* 49 (May, 1959). For a discussion of the gigantism and transformism inherent in the Virgin Lands program as well as other massive Soviet projects, see also Ziegler, "Soviet Images of the Environment."
[17] N. S. Khrushchev, "On Control Figures For Development of the USSR National Economy in 1959-1965," *Current Digest of the Soviet Press* XI (1958): Vol 2, 15. *Pravda, Jan. 28, pp. 2-10.* Italics added.

> an extraordinary confluence of events was beginning. Soviet leaders were confronted with a number of propositions connected by a common thread: the world's scientists wanted to harness contemporary rocket power for eighteen months of international, geophysical soundings[18]; the Soviet military wanted an intercontinental ballistic rocket; Soviet military planners foresaw the potential value of an orbiting satellite as a moving platform for scooping up intelligence information or launching bombs; Soviet scientists realized that satellites could be used for a variety of purposes as well as a stepping stone into space.[19]

As a result, in the years between 1953 and 1956 science became one of the many battlegrounds for power in the Soviet regime. To many of the combatants, and especially to Nikita Khrushchev, it represented the apex of Soviet achievement, and one of the logical platforms from which the USSR might launch its campaign to finally "surpass the most advanced capitalist countries"[20] in the West. Following Khrushchev's denunciation of Stalinism in 1956, his platform for the long-awaited attainment of communism relied heavily on science – especially in the fields of atomic energy, rocket science (the two programs from whence the space program emerged), and agriculture – for its definition.

During this period, the politico-cultural maxims that drove science under Stalin remained in place. As late as 1959 Lysenko was publishing articles in *Izvestia* celebrating the triumph of Michurinist science, the influence of which had led Soviet science to prove "experimentally and practically that external environmental conditions

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[18] The IGY, or International Geophysical Year. See below.

[19] Nicholas Daniloff, *The Kremlin and the Cosmos*, (New York, 1972). 55. For other general works about the advent of the space age, see also David Baker, *The History of Manned Space Flight*, (London, 1981), Rip Bulkeley, *The Sputniks Crisis and Early United States Space Policy: A Critique of the Historiography of Space*, (Basingstoke, 1991), Wilfred G. Burchett and Anthony Purdy, *Cosmonaut Yuri Gagarin: First Man in Space*, (London, 1961), Valentin Petrovich Glushko, *Development of Rocketry and Space Technology in the USSR*, (Moscow, 1973), T. A. Heppenheimer, *Countdown: A History of Space Flight*, (New York; Chichester, 1997), Jay Holmes, *The Race for the Moon*, (London, 1962), Claus Jensen, *Contest for the Heavens: The Road to the Challenger Disaster*, (London, 1996), Roger D. Launius and Howard E. McCurdy, *Spaceflight and the Myth of Presidential Leadership*, (Urbana, 1997), Villen Lyustiberg, *Man and Space: The Soviet View*, ([S.l.], 1981), Clint Twist, *Gagarin and Armstrong: The First Steps in Space*, (London, 1995), Matthew J. Von Bencke, *The Politics of Space: A History of U.S.-Soviet/Russian Competition and Cooperation in Space*, (Boulder, Colo., 1997).

[20] Khrushchev, "On Control Figures For Development of the USSR National Economy in 1959-1965," Vol. 4, 17.

were, are and will be the leading factor in the development of the organic world."[21] Gigantism also continued to flourish during the Khrushchev era. *Literaturnaya Gazeta* reported in October 1959 of a plan, created by engineer P.M. Borosov "to erect a gigantic dam in the Bering Strait and in this way to transform the Artic, to alter the climate of the territory beyond the Artic Circle and to convert the enormous expanses of permafrost in the USSR, the USA, and Canada into fertile farmland."[22] Following Khrushchev's ascension to power in 1956, the political will, the theoretical framework, and his indissoluble faith in the hyperbole of the Soviet system made the "storming of the cosmos" appear both reasonable and inevitable.

The launch of *Sputnik* on 4 October 1957 stands as one of the truly momentous events in the history of the Cold War, and, for that matter, one of the most important in the 20th century. Though the "storming of the cosmos" as an official slogan is typically hyperbolic, it is almost fitting in light of the early successes of the Soviet space program. *Sputnik* I was followed closely by *Sputnik* II ("manned" by the canine cosmonaut, Laika) launched less than two months later, after which the Soviet space program continued to amass a rapid succession of astronautical firsts: the first human in orbit in 1961, the first woman in space in 1963, the first three man crew in 1963, the first space walk in 1965, the first mission to recover lunar samples with automatic devices in 1970, and the first space station in 1971.[23] The shockwaves from these successes sent waves of panic, uncertainty, and fear crashing all over the Western world. The reaction was nothing short of hysterical in the United States, where Cold War sentiment had been steadily mounting since the end of the Second World War.

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[21] T. D. Lysenko, "Darwinism Lives and is Developing," *Current Digest of the Soviet Press* 11 (1959). *Izvestia, November 22, 1959, p.3.*
[22] Boris Lyubimov, "The Bering Strait Dam," *Current Digest of the Soviet Press* XI (1959). *Literaturnaya Gazeta, Oct. 24, 1959, pp. 1-2.*
[23] Daniloff, *The Kremlin and the Cosmos.*

The successful launch of *Sputnik* has been described as an historical catalyst[24], and similarly if less dramatically, as a saltation in world history and science.[25] Whichever way, it can certainly be said that as a result of *Sputnik* "virtually every field of natural science has leapt forward or been transformed on the strength of space-based experimentation and data."[26] More important for the scope of this paper, however, is the way in which *Sputnik* redefined the nature of the world political system, and specifically the Cold War. The International Geophysical Year (IGY), an idea inaugurated by Western scientists and set to begin on 1 July 1956, was intended to exploit the worldwide interest in emerging space technologies for the benefit of sciences such as meteorology and astronomy. The Soviet Union was initially reluctant, but finally announced its participation in October 1954, five months later than the May deadline originally set.

As a result of the channels of communication established under the auspices of the IGY coupled with intelligence from the CIA, the Eisenhower administration was aware in 1955 and 1956 that the Soviet Union was "well on its way to accomplishing the feat [of a successful satellite launch]."[27] When *Sputnik* was launched, however, the shock waves that spread across the United States and, to a lesser extent, Western Europe can hardly be overemphasized. Suddenly, it appeared as though the Soviet Union had caught up with the West, surpassing it in science and technology, and was suddenly able to make real Khrushchev's infamous threat: "Whether you like it or not, history is on our side. We will bury you."[28] The post-war Soviet belief that held the United States as

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[24] Robert Lapidus, "Sputnik and Its Repercussions: A Historical Catalyst," *Aerospace Historian* 17 (1970): 88-93.
[25] Walter A. McDougall, "Technocracy and Statecraft in the Space Age--Toward the History of a Saltation," *The American Historical Review* 87 (1982): 1010-1040.
[26] Ibid.: 1010.
[27] Daniloff, *The Kremlin and the Cosmos*. 135.
[28] "Ambassadors Walk Out: Protest at Speech by Mr. Khrushchev," *The Times*, 19 November 1956.

a volatile military threat had now returned full circle. In the ensuing press frenzy, the American media, campaigning politicians, and opportunistic 'space-boosters' all proved themselves willing to tolerate public disquiet if it meant increased government funding for an American space program. *Time*, *Life*, and other popular American magazines regularly featured propagandistic tales of Soviet nuclear weapons raining from the skies, decimating the nation without a Soviet soldier in sight.[29] Lyndon Johnson famously proclaimed, "I don't want to go to sleep by a Communist moon."[30] Against this backdrop, and in spite of Eisenhower's concern regarding the burgeoning 'military-industrial complex,' it became increasingly obvious that the United States would be forced to alter its position on space exploration. Fear, panic, and insecurity had led to the widely held belief that "Control of space means control of the world."[31]

Though Khrushchev could hardly have anticipated the reaction to *Sputnik*'s launch, once the frenzy began "it must have seemed so ideal a conjuncture as to validate the premier's reading of the material laws at work in the history of his time."[32] *Sputnik*'s success and its worldwide resonance established the basis for propaganda during the remaining years of Khrushchev's rule:

> First, *Sputniks* verified the Soviet claim to an ICBM, hence the new vulnerability of the United States to nuclear assaults. Second, the space achievement irrefutably demonstrated the scientific, and ultimately economic, superiority of the USSR. Third, the Soviet space program was dedicated solely to peaceful conquest of the cosmos in the interest of all mankind. Fourth, the leading inspiration and guide of the Soviet space effort was none other than Premier Khrushchev himself, and it illustrated his dynamic leadership.[33]

The November 1957 issue of *International Affairs*, "In the Skies – A Red Star" showed that the USSR was planned to capitalize on their temporary advantage:

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[29] See Howard E. McCurdy, *Space and the American Imagination*, (Washington, D.C. ; London, 1997)., especially Chapter 3.
[30] Jensen, *Contest for the Heavens: The Road to the Challenger Disaster*. 43.
[31] Lyndon Johnson, quoted in McCurdy, *Space and the American Imagination*. 53.
[32] Walter A. McDougall, *...The Heavens and the Earth: A Political History of the Space Age*, (New York, 1985). 237.
[33] Ibid.

> But the laughter gets caught in our throats at the thought that the man in his lofty seat above our heads and borders may not only muse philosophically over the unimportance of all earthly things and the insignificance of our earthly scale, but may direct missiles from there to turn territories into deserts and erase cities with millions of inhabitants. The Soviet ICBM, which some Western experts say is certainly not as yet very accurate, may be steered to its target from a space ship of that kind. In peace it may be a flying laboratory and weather station, but in war it becomes a cosmic observation point. That is what *sputnik* is![34]

The post-war space race was also explicitly premised on the fact that superiority in space was not only about one-upmanship of one superpower *vis-à-vis* another. The massive supply of state resources which drove the space race and space age forward was directed at the rapidly emerging bi-polar battle between the Soviet Union and the United States for the "hearts and minds" of the post-colonial third world, and as importantly, for hegemony in the reconstruction of Western Europe. The former is clearly demonstrated by the 1961 Soviet cartoon depicting Gagarin aboard *Vostok* speeding over Africa, which is straddled by an African man with broken shackles on his wrists. Entitled "С наступающим днем, Африка!" ("Good morning, Africa!"),[35] the image serves to refute the oft-repeated criticism that the superpowers should be focusing their wealth on addressing issues of more "real world" pertinence. Rather, the Soviet space program was a symbol that, along with formerly colonized peoples, the USSR was engaged in an active battle against imperialist power. As a result of the propaganda campaign, post-*Sputnik* opinion polls in the developing world evidenced a new trend toward neutrality, as Soviet successes in space threatened to make redundant "all kinds of pacts and military bases [and would therefore] make countries think twice before tying themselves to the imperialist policy led by the United States."[36]

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[34] Gosta Uexkull, "In The Skies - A Red Star," *International Affairs (Moscow)* (November, 1957): 130.
[35] McDougall, "Technocracy and Statecraft in the Space Age--Toward the History of a Saltation," 1012.
[36] From Cairo Radio, as quoted in Jensen, *Contest for the Heavens: The Road to the Challenger Disaster.* 46.

As for the latter, in Western Europe, "the single most important audience for Soviet chest-thumping,"[37] Soviet missile propaganda, as well as implicit and explicit threats against the United States' NATO allies brought the Soviet ICBM threat particularly close to home. The result was a drastic redefinition of Soviet and American power in reconstructing Western Europe: by the time of a 1960 poll, the British judged the Soviet Union the superior force 59% to 15%, the French by 37% to 16%, Norwegians 45% to 15%, and West Germans 47% to 22%.[38]

The Soviet missile threat would soon turn out to be largely fraudulent. The 'missile gap' that *Sputnik*, with its potential for long range weapons delivery, seemed to confirm was quickly shown to be more Khrushchevian bluster than Soviet success. The nature of *Sputnik* and the rockets that propelled it into space were, ironically, a symbol of Soviet scientific inferiority. "Gigantism in Soviet rocketry was a sign of primitivism," but Khrushchev could hardly have been expected to "throw a wet blanket on the otherwise delightful chorus of panic and praise by admitting that the USSR was years away from an operational missile."[39] From Khrushchev's perspective the propagandistic value of the space program was evident in every sphere of competition with the West. Between 1957-1964 Khrushchev seized the opportunity to exploit the initially real, then perceived Soviet dominance in space to display the superiority of the Soviet economy, political structure, ideology, sciences, and, not least, education. This program was feasible because both the real (i.e. scientific) and fantastical ideas of space had wide currency in Russia and the Soviet Union well before the *Sputnik*'s launch. In the propaganda campaign which followed *Sputnik*'s successful launch, both versions of this idea were exploited in a way that redefined a great deal of Soviet life, especially for

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[37] McDougall, ... *The Heavens and the Earth: A Political History of the Space Age*. 240.
[38] Ibid.
[39] Ibid. 250.

that segment of the population believed to be the most ideologically malleable; Soviet children.

3. Space and Culture

Finding the Future in the Past

Though the Soviet space program, emanating as it did from post-Stalinist politics and manias, was a political phenomenon, the fascination with space itself had deep cultural roots in Russia. Both before and after the 1917 Bolshevik seizure of power the idea of space and space travel exerted a strong influence on popular and radical culture. In this light, the reemergence of space as a political ideology may be viewed as a cultural phenomenon. As Paperny notes,

> We assume that it was not the work of individual architects, critics, bureaucrats, and leaders, who, through their efforts, made a radical turn in the direction of architecture (literature, cinema), but, on the contrary, that this movement existed prior to the efforts of certain individuals, that there exists something that causes such movements, drawing people along with it, 'playing,' as Arnold Hauser put it, 'with their motivations and interests and giving them a sense of freedom.' We shall call this 'something' culture.[40]

In the case of the Soviet space program, a long tradition of Russian and Soviet fascination with space existed as the "something" which drove bureaucrats and scientists to pursue the storming of the cosmos.[41] When space as a cultural theme gained new relevance during the Khrushchev era, its portrayal was imbued with the heroic, technocratic, and utopian characteristics by which it had been defined since its earliest appearance in Russia. Establishing the historical and cultural basis for this idea is

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[40] Vladimir Paperny, *Architecture in the Age of Stalin: Culture Two*, John Hill and Roann Barris trans., (Cambridge, 2002). xxii.

[41] Paperny cites architecture, literature, and cinema as three forms beholden to his formulation of culture. Science, however, should also be included as part of this list. Mention of Tsiolkovsky and Bogdanov, both figures who engaged simultaneously in scientific and cultural work (and indeed, probably did not see any real distinction between the two) should suffice to demonstrate the interconnectedness of these two forces in Russia and the Soviet Union. Sociologists, however, have explored the nature of this relationship in more detail. See, for example: Gerald Holton, "Einstein and the Cultural Roots of Modern Science," in *Science in Culture*, ed. Peter Galison, Stephen R. Graubard, and Everett Mendelsohn (New Brunswick, 2001), Everett Mendelsohn, "The Social Construction of Scientific Knowledge," in *The Social Production of Scientific Knowledge*, ed. Everett Mendelsohn, Peter Weingart, and Richard Whitley, Sociology of the Sciences, A Yearbook (Boston, 1977), Helga Nowotny, Peter Scott, and Michael Gibbons, *Re-Thinking Science: Knowledge and the Public in an Age of Uncertainty*, (Oxford, 2001). chapter 3, Richard Whitley, ed., *Social Processes of Scientific Development*, (Boston, 1974). While there is no work which focuses specifically on the influence of culture on Soviet science, for a work exploring the influence of Soviet science on society, see Loren R. Graham, *Science and the Soviet Social Order*, (Cambridge, 1990).

necessary for understanding the themes presented in the literature for children examined in the fourth chapter. This chapter will therefore explore the "something" that was at work long before the first blips were emitted by *Sputnik*, the cultural roots of the Soviet quest for space.

Unlike many of the ideas that were to transform Russia in the 20th century, the scientific idea of space exploration was, for all intents and purposes, native to Russia. As would be the case with many who would become interested in space exploration around the world, the fictional works of Jules Verne and H.G Wells initially inspired early Russian scientists. Wells was a more popular in Russia than in any other country in the world, and these early 'space writings' had special resonance here.[42] Verne's fiction, especially *From The Earth To The Moon* (1865) and its sequel *Round The Moon* (1870)[43], was a critical point in the emergence of a real science of space, and one of the first to heed the call was a Russian; Konstantin Tsiolkovsky. Tsiolkovsky was "a half-deaf, self-taught Russian school teacher, who [would] come to be known as the first great theoretician of interplanetary flight" and who later "credited Verne's adventure stories with setting his own scientific thoughts in motion."[44] As Tsiolkovsky struggled to discover a method to bring reality to Verne's fantasy, he established himself, along with Robert Goddard in the United States and Hermann Oberth in Germany, as one of the three fathers of modern rocketry.[45] Tsiolkovsky's first treatise on the subject of space travel was his 1883 diary on the *Systematic Description of the Motion of Bodies in Cosmic Space*, though this particular work would not be published until 1954, just three years before *Sputnik*'s launch. More important to the development of the science of

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[42] Orlando Figes, *Natasha's Dance: A Cultural History of Russia*, (London, 2002). 513.
[43] Both stories were published in Russian in 1875 according to McCurdy, *Space and the American Imagination.* 14.
[44] Daniloff, *The Kremlin and the Cosmos.* 13.
[45] McCurdy, *Space and the American Imagination.* 13.

space was his 1911 work *Investigation of Universal Space by Means of Reactive Devices.* This pioneering work of theoretical science was also "a serious work of imagination" that introduced readers "to orbiting space stations and methods for colonizing the cosmos."[46] From the inception of the space idea in Russia, fact and fantasy, science and fiction, were inseparable.

Tsiolkovsky was not a revolutionary. Following the Bolshevik seizure of power, however, he became a "convenient symbol of Soviet progress."[47] His books were freely published in the Soviet Union, he was elected a member of the Academy of Sciences in 1919, and in 1921 Lenin awarded him a lifelong pension. He was appropriated into a tradition of Soviet and pre-Soviet radical science along with other visionaries and dreamers who pursued the idea of space. Among these, perhaps the most famous, and most often cited, is the pre-revolutionary radical Nikolai Kibal'chich. Kibal'chich drafted plans for a flying platform while awaiting execution for constructing the bomb that had killed Alexander II in 1881. The combination of a visionary scientist and martyred revolutionary was perfectly suited to the Soviet idea of progress and technology, and Kibal'chich was posthumously lauded as a hero. His design called for a platform that fired powder and air at the ground, creating an explosion which would propel the platform into the heavens. Kibal'chich's myth was literally and metaphorically one in which revolution and science were inseparable, if not indistinguishable. The destructive force that had killed the tsar was simultaneously the constructive force that would propel man in to space. Tsiolkovsky's accomplishments were later frequently to be the subject of the more academic and technical articles offered to children. Kibal'chich, however, also became the subject of a myth presented to children in which he and the Soviet state feature as the protagonists. Though

[46] Ibid. 14.
[47] Daniloff, *The Kremlin and the Cosmos*. 19.

Kibal'chich was long dead by the time of the Bolshevik seizure of power, his myth celebrated his prescient vision, a vision that lay unexploited and unappreciated in the vaults of the tsarist secret police until October 1917.[48]

A compelling interest in space also existed within the Bolshevik party prior to its accession to power in 1917. The most famous Bolshevik proponent of space is undoubtedly Alexander Bogdanov, author of *Red Star* (1908) and *Engineer Menni* (1913). A devout revolutionary and founder of the Proletkult movement, Bogdanov was enamored with the concept of space travel and colonization. Inspired by the failed uprising of 1905, he began work on *Red Star*, his futuristic novel about space colonization, utopia, and a peaceful Martian society. Like many Russian radicals, Bogdanov personified the close ties between science and revolution. He trained as a doctor and never abandoned his scientific background. However, unlike many of his scientifically oriented comrades who abandoned science for revolution, "he deepened and extended his study of physiology, technology, and natural science and combined them with his own version of Marxian sociology"[49] and became "the first in Russian fiction to combine a technical utopia, grounded in the latest scientific theories of the time, with the ideas of revolutionary Marxism."[50]

Space and Utopia

Bogdanov's *Red Star* is unabashedly utopian; Leonid, the story's protagonist, is described as the human embodiment of revolutionary idealism. Menni, the Martian who selects him to make the journey to Mars, discovers in Leonid the attributes of the New

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[48] I. Grigor'ev and R. Iu. Danilova, "Put' k zvezdam," *Koster* (May, 1959).
[49] Richard Stites, "Fantasy and Revolution: Alexander Bogdanov and the Origins of Bolshevik Science Fiction," in *Red Star: The First Bolshevik Utopia*, ed. Loren R. Graham, Charles Rougle, and Richard Stites (Bloomington, Ind, 1984), 2.
[50] Ibid., 1.

Soviet Man: "an ideal combination of sound physical health, flexibility, a capacity of intellectual labor, few or no personal attachments on Earth, and as little individualism as possible."[51] In *Red Star*, Earth is plagued by backwardness, maliciousness, cruelty, violence, greed, and exploitation. When Leonid arrives on Mars, however, he discovers a society where relationships between adults, between parents and children, between work and leisure, between science and nature, and between self-interest and the collective good have been redefined in accordance with a celestial, utopian socialism more perfect that Earthbound revolutionaries could ever conceive. *Engineer Menni* also transports Marxist teleology to Mars, arguing for the historical inevitability of socialist revolution regardless of time or place. Additionally, *Engineer Menni* introduces Bogdanov's faith in technocracy to the utopianism and materialism already present in *Red Star*. The importance of the Martian technocratic class is made clear from the very beginning of *Engineer Menni*, as Leonid, *Red Star*'s protagonist, writes, "Only a small part of the present network of canals [on Mars] was completed in Menni's lifetime, but almost all of it was envisaged in the projects drawn up by him and his successor, an engineer by the name of Netti. These two men are the chief protagonists of the novel."[52] In fact, space and utopia were inextricably intertwined from the very beginning of Russia's fascination with the subject. Tsiolkovsky's fourteen-point program for the conquest of space offered the following plan:

> 1. development of a rocket plane with wings; 2. aircraft further developed with shorter wings; 3. developed to attain altitude of 12 kilometers; 4. wingless vehicles developed; 5. rocket developed that is capable of speed of eight kilometers per second; 6. first flights into the cosmos; 7. development of regenerative processes in the cabin; 8. spacesuits developed; 9. plants carried into space to aid regenerative systems; 10. space stations set up around earth; 11. solar energy harnessed for space locomotion; 12.

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[51] A. Bogdanov, "Red Star," in *Red Star: The First Bolshevik Utopia*, ed. Loren R. Graham, Charles Rougle, and Richard Stites (Bloomington, Ind, 1984), 42.
[52] A. Bogdanov, "Engineer Menni: A Martian Stranded on Earth," in *Red Star: The First Bolshevik Utopia*, ed. Loren R. Graham, Charles Rougle, and Richard Stites (Bloomington, Ind, 1984), 151.

> colonies established on asteroid; 13. colonies developed further; *14. 'Human society and its individual members become perfect.*[53]

Although he had begun writing it in 1896, Tsiolkovsky's *Beyond the Planet Earth*, a science fiction tale that outlined his theories of rocket propulsion, was finally published in 1920. His first foray into the realm of scientific fantasy contributed significantly to the explosion of post-revolution science fiction in the Soviet Union, and his work during this period earned him a circle of young devotees eager to carry on his work.[54] In this story six scientists, a Russian, a Frenchman, an Englishman, a German, an Italian, and an American, debate and develop the practical and theoretical basis for a trip to the moon in the year 2017. The names of the scientists, Ivanov, Laplace, Newton, Helmholtz, Galileo, and Franklin, all correspond to a great historical scientist from each country, and each practices the same specialty as their namesake. After successfully launching their creation into the heavens and making the first space walk, they begin to plan for life in space:

> 'The houses will be as standardized as the clothes; they will be built for millions of people,' Newton replied. 'They too will be perfected. Moreover, the environment here will be so uniform that it will be just as easy to build perfect homes as to make perfect space-suits...And then, there will be such a vast number of people here, so wise and so aware of their common interests, we shall have such wonderful tools and equipment, that it will always be possible to find a way for coping with any danger or misfortune...Maybe even Man himself will change so much that he will need neither space-suits nor dwelling houses in space,' said Franklin.[55]

To sustain his space community, Tsiolkovsky envisions floating greenhouses that make use of solar energy to produce an abundance of agricultural products. Like many of Tsiolkovsky's ideas, this particularly fantastical plan persisted into the actual space age. In January 1956, just months before *Sputnik*'s launch, *Komsomol'skaya Pravda* reported: "A metal structure of tremendous size, built on Earth, will be launched

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[53] Daniloff, *The Kremlin and the Cosmos*. 20. Italics added.
[54] B.N. Vorobyev, "Konstantin Tsiolkovsky and his Work on Interplanetary Travel," in *Beyond the Planet Earth* (Oxford, 1960).
[55] K. Tsiolkovsky, *Beyond the Planet Earth*, (Oxford ; New York, 1960). 94.

in sections and with the help of freight rockets to give height, where the astronauts will assemble it...Huge streams of sunlight will be caught and utilized for fuel and light, for growing various vegetables, fruit and other plans in special greenhouses and for other purposes."[56] *Beyond the Planet Earth* is rife with scientific minutiae interspersed throughout the story, including a series of detailed charts in the final chapter on the planets' distance from the sun and temperatures.[57] The scientific and the utopian are inseparable throughout, and space offers man an environment in which he might continue to develop himself and his technology for the betterment of all people.

Bogdanov and Tsiolkovsky were hardly alone in their utopian aspirations for space. Between 1890 and 1917, "at least twenty Russian tales of utopian societies, fantastic voyages, and interstellar space travel appeared."[58] During the pre-revolutionary years, the idea of space travel, especially among radicals, took on new significance as they confronted the desolate, defeated confines of the tsarist prison system. As Stites notes, "failed revolutions and even enforced isolation, as in a counterrevolutionary prison cell, have often produced free flights of fancy."[59] During this period, works by Chernyshevsky, Kibal'chich, Morozov, and others explored terrestrial and extraterrestrial utopia from the crippling isolation of their prison cells. In the previously cited story about Kibal'chich the connection between the solitude of prison and space is implicitly acknowledged. In the drawing of Kibal'chich that accompanies the text, his back is turned to the viewer, and his eyes are set upon a dark window in the upper left corner of the page. His hand is placed on his drawing table,

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[56] "On the Eve of Space Flight," *Current Digest of the Soviet Press* VIII (1956): 24. *Komsomol'skaya Pravda, Jan. 1, 1956, p. 2.*
[57] Tsiolkovsky, *Beyond the Planet Earth.* 181-182. Also, see note 118 below.
[58] Stites, "Fantasy and Revolution: Alexander Bogdanov and the Origins of Bolshevik Science Fiction," 4.
[59] Ibid., 6.

and although his face cannot be seen, the reader is left with the clear impression of a man torn between dreams of space and the reality of his imprisonment.[60]

Pre-revolutionary interest in space was not limited only to radicals, however, and Russian authors not actively involved in active resistance to the Tsarist regime also heeded the call of space. In *The Dream of the Ridiculous Man*, for example, Dostoevsky's suicidal protagonist falls asleep and is transported in his dream into the darkness of space. From this vantage point he sees a world free from sin, vice, and cruelty, and, at least temporarily, his humanity is restored: "A sweet, seductive emotion struck chords of ecstasy within my soul: my heart responded to the dear familiar power of the light which had begot me, and revived. I felt a sense of life, my former life, for the first time since my interment."[61]

The utopianism inherent in early Russian interest in space and space exploration is not, however, out of the ordinary in an international context. Whether approaching space from a scientific perspective like Tsiolkovsky, or from a propagandistic and literary perspective like Bogdanov, Russian's fascination with space followed clearly in the traditions established by their predecessors. In Verne's writing, for example, utopia is a recurring motif. In his work "Rockets, submarines, hot-air balloons, desert islands are the isolated, protected, self-contained *loci propitious* for the formation of a utopian social organization [in which] there is a pervading sense of the timelessness of existence within (or on) them. Spatially they are either in ceaseless motion or in a no-man's land – '*un monde à part.*'"[62] The American vision of space also drew on a romantic, often utopian vision of space. The American popular idea of space held that "space-age technologies would transform life back on Earth, bringing wealth and power to the

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[60] Grigor'ev and Danilova, "Put' k zvezdam," 23.
[61] Fyodor Dostoevsky, "The Dream of a Ridiculous Man," in *A Gentle Creature and Other Stories* (Oxford, 1999), 117.
[62] Edmund J. Smyth, ed., *Jules Verne: Narratives of Modernity*, (Liverpool, 2000). 66.

nations that controlled the next frontier, and space-age explorers would solve the mysteries of the universe and reveal the mind of God."[63]

What makes the Russian example unique, and the idea of space so culturally powerful, however, is the way in which it satisfied a number of particularly Russian cultural requirements. Utopianism exploded in the years prior to the revolution, and its grip extended across class and political boundaries. Russian utopianism during these years "was extraordinarily rich and variegated, expressing itself in literature, political thought, religious fantasy and practice, revolutionary idealism, personal experimentation, mystical visions, legend and folk wisdom."[64] Further, the rapid and brutal arrival of industrialization forced Russians of all social backgrounds to consider the importance of technology in their lives, many for the first time. Those who found themselves pondering these ideas were experiencing personal and political dislocation and dissatisfaction at the hands of an increasingly unpopular and unresponsive regime. Thus, the Russian idea of utopian space was not typically one of thinly veiled imperialism as was the American version cited above, but rather of escape. The idea of the cosmos allowed Russians to escape their confining personal spaces, whether languishing in the depths of a prison cell or simply wistfully fantasizing about political stability. The cultural relevance of space stemmed from its location at the intersection of utopia and technology, and its description of a world free from the "cursed questions" plaguing Russia.

During the Soviet period, although a sense of space-as-utopia persisted, its relevance as a cultural and political symbol took on additional meanings. The cosmogony of the Soviet state was premised on the idea of science, technology, of

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[63] McCurdy, *Space and the American Imagination.* 1.
[64] Richard Stites, *Revolutionary Dreams: Utopian Vision and Experimental Life in the Russian Revolution*, (Oxford, 1989). 14.

borderlessness and of integration of the utopian and the real. The rapid development of Soviet technocracy evidenced the burdens that would be placed on engineers and scientists charged with transforming the physical and political nature of man and his environment. The widespread appeal of space among radicals and non-radicals alike made the eventual 'storming of the cosmos' a logical task to assign to this burgeoning technocracy in the Soviet struggle against nature. The grand designs of Soviet science and technology could, for example, have undertaken a mission to the center of the Earth or the deepest depths of the ocean instead (both subjects of Verne's writing in *Journey to the Center of the Earth* and *20,000 Leagues Under the Sea*, respectively). However, it was space, an idea culturally linked with peace, progress, utopia, and scientific accomplishment since its first appearance in Russia that helped to legitimize the Soviet regime.

Consequently, the pre-revolutionary idea of space continued to resonate in the official culture of the Soviet era. In the 1920s science fiction again exploded with novels by Platonov, and A. Tolstoy, among others. During the pre-revolutionary years space symbolized a utopian future, bereft of the political and personal crises that were plaguing Russia. In the Soviet era, the importance of space still represented the future, symbolizing a sort of hyper-modernity. Though science fiction in the sense of the pre- and early-revolutionary periods largely ceased during the Stalinist period, other means of exploring 'space' persisted as a part of official state culture. "The March of the Happy-Go-Lucky Guys" (1934) implored its audience to "stride forward, clan of Young Communists/Sing and joke and make smiles bloom/We are taming space and time/We are the young masters of the Earth."[65] "Even Higher" (1934) was more explicit in its relation to the exploration of the heavens: "We were born to make fairy tales come

[65] Von Geldern and Stites, *Mass Culture in Soviet Russia: Tales, Poems, Songs, Movies, Plays, and Folklore, 1917-1953*. 234.

true/To conquer the distances and space/Our minds made steel wings for our hands/And throbbing engines take the places of our hearts."[66] "The March of the Enthusiasts" (1940) carried the idea further again, adding, "We fear not icebergs, not the clouds/The flame of our heart, the flag of our country/We carry across other worlds and ages."[67]

The Stalin era literary cult of the machine, so apparent in the line from "Even Higher" describing human organs replaced by mechanical devices, added the second key cultural ingredient necessary to turn dreams of space into reality during the Khrushchev era. Under Stalin "the machine became the dominant cultural symbol for Soviet society. Society was a 'train,' rushing forth into space to shorten the distances in that vast land, to collapse time and advance Soviet society rapidly over the hundred years it lagged behind the West."[68] Substituting 'rocket' or 'space ship' for 'train' in this passage offers an accurate summation of the Khrushchev era idea that eventually propelled *Sputnik* skyward. However, the pursuit of space under Khrushchev also derived its significance from a general pursuit of the pre-Stalinist past. It symbolized a return to Lenin, Marx, and the struggle to attain communism as defined in the early days of the revolution, at least as that period was portrayed in the mythology of the Khrushchev era. The role of space in this program was inextricably linked to its earlier portrayal as a social and political *tabula rasa* upon which the perfectibility of man and society could be etched.

These two cultural strains of space, optimism for the future and assertion of the legitimacy of the past, find their meeting point in Lenin himself. In the early years of the Soviet Union, Lenin symbolized the introduction of modernity while acting as the source of legitimacy for the future state. In the post-Stalin era, Lenin again became,

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[66] Ibid. 257.
[67] Ibid. 328.
[68] Katerina Clark, *The Soviet Novel: History as Ritual*, 3rd ed., (Bloomington, 2000). 94.

logically, a symbol of the legitimacy that Stalin had abused. Khrushchev promised to abandon the harmful effects of Stalin's personality cult, and claimed to have "exposed shortcomings in various spheres of economic, state and Party activities, smashed obsolete ideas and resolutely swept aside everything that had outlived its time and was hindering our progress"[69] as a result of the Stalinist era. The 20th Party Congress reinstated the maxim that "Faithfulness to Leninism is the source of all the successes of our party."[70] With regards to the quest for space, Lenin occupied a similar place. In the history of the Soviet space program, Lenin represents a quasi-Janus figure, simultaneously looking backwards to the Russian and Bolshevik tradition of utopian dreaming about space, while laying the technological and ideological groundwork that eventually brought *Sputnik* to fruition. As the first head of the Soviet state, Lenin's musings are the point at which the dreams and fantasies about space during the pre-revolutionary era become the reality of technocracy, of engineer-heroes, and of scientific and technological progress as one of the guiding missions of the state.

This chapter has attempted to show that the origins of the Soviet space program were both deeper and wider than their political manifestations would suggest. Culturally, the idea of space, space exploration, the cosmos, the heavens, and otherworldly inhabitants predated the Bolshevik revolution, and continued to resonate long after it. Interest in space seized the collective imagination of Russians from its first emergence as a pop-cultural theme in the 19th century, and it inspired scientific accomplishments among men of science like Tsiolkovsky as well as utopian dreaming among revolutionaries like Bogdanov. The political trends mentioned in part one, namely transformism, gigantism, and imperialism could have manifested themselves in

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[69] N. S. Khrushchev, "Report of the Central Committee of the Communist Party of the Soviet Union to the 20th Party Congress - I," *Current Digest of the Soviet Press* VIII (March 7, 1956): 3. *Pravda, Feb. 15, 1956, pp. 1-11.*

[70] Ibid.

a multitude of ways. The "storming of the cosmos" came to fruition, and indeed existed within the range of possibilities open to Khrushchev, because it found special resonance in Russian culture.

4. Soviet Children and Education in the Space Age

Soviet Science and Education

The emergence of the space race had its most tangible impact on the lives of children in the realm of education. *Sputnik*'s launch set off a worldwide panic about the successes of Soviet education, and the failure of educational systems in the Western democracies to create graduates capable of equaling Soviet triumphs. In 1964 Herman Rudman wrote in a study published by the U.S. Dept. of Health, Education, and Welfare: "During the 1950's there was an increasing awareness of Soviet education, as evidenced by the work of British and American scholars such as Counts, DeWitt, Johnson and Grant. It did not become a topic for extensive study, however, until October 1957, when the Soviet Union launched its first *Sputnik.* Since then, inevitably, the question most often asked has been, 'How did the Russians do it?'"[71] Additionally, books such as Arthur Tread's *What Ivan Knows That Johnny Doesn't* (1961) stemmed from the "growing realization that intellectual strength is one of the chief means by which the free world will check and defeat communism or by which communism will check and defeat the free world."[72] A Soviet educator responded to such works after visiting a number of schools in the US with an article entitled *Why Does Ivan Know More Than Johnny?* published in *Uchitel'skaia Gazeta* in 1963. The article notes, "American schoolchildren are weak in the mastery of a foreign language...many American schoolchildren cannot read well in their own language after six to eight years of schooling," and, most importantly, "school courses in physics, biology, and chemistry are primitive."[73] The author cites a question from "a young American woman in Chicago whose daughter was in the 3rd grade," who asked "Really, is it normal for

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[71] Herbert C. Rudman, *Structure and Decision-Making in Soviet Education*, (Washington, D.C., 1964). 1.
[72] Arthur S. Trace, *What Ivan Knows That Johnny Doesn't*, (New York, 1961). 5.
[73] V. Strezikozin, "Why Does Ivan Know More Than Johnny?," *Education in the USSR: A Collection of Readings From Soviet Journals* 2 (1963): 207. *Uchitelskaia Gazeta, February 9 and 12, 1963.*

young American men and women to acquire a fund of knowledge after nineteen years of schooling which is no larger than that of [Soviet] 8th-graders?"[74]

Given the nature of the debate regarding education, and the superiority granted to the Soviet system especially in the sciences, it is surprising to find that the Soviet Union undertook a massive restructuring of its educational system under Khrushchev. While Soviet educators and leaders praised the accomplishments of Soviet education at every opportunity, they simultaneously began to radically alter its basic structure and curriculum. The first signs of an impending overhaul of the Soviet system appeared in 1952, and the reform was made official in December 1958. This chapter will explore the nature of these reforms, their relation to science, technology, and the international space race, and their effect on the lives of children in Soviet Union.

Polytechnical Reform, 1958

The educational system inherited by Khrushchev was virtually unchanged since the mid-1930s and in dire need of restructuring in the post-20th Party Congress atmosphere.[75] The curriculum, dominated by the dictates of the previous era of World War and the Stalinist *Short Course*, was stratified, strictly hierarchical, committed to perpetuating the values of the entrenched elite, and obviously outmoded in the era of Khrushchevian thaw. Further, by the late 1950s school enrollment had declined significantly as a result of the coming of age of the 'war dent,' or the group of school

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[74] Ibid.

[75] For additional general works on Soviet education during this period, see George Bereday, ed., *The Changing Soviet School*, (Boston, 1960), George Bereday and Jaan Pennar, *The Politics of Soviet Education*, (New York, 1960), George S. Counts, *The Challenge of Soviet Education*, (New York, 1957), Nigel Grant, *Soviet Education*, (London, 1964), George L. Kline, "Soviet Education," (London, 1957), Mervyn Matthews, *Education In The Soviet Union*, (London, 1982), William K. Medlin, *Soviet Education Programs; Foundations, Curriculums, Teacher Preparation*, (Washington, D.C., 1960), Jaan Pennar, Ivan Ivanovich Bakalo, and George Z. F. Bereday, *Modernization and Diversity in Soviet Education : With Special Reference to Nationality Groups*, (New York, 1971), Rudman, *Structure and Decision-Making in Soviet Education*. Also see James Y. Muckle, *Education in Russia Past and Present: An Introductory Study Guide and Select Bibliography*, (Nottingham, 1993).

age children whose numbers were altered drastically by a decreased wartime birth, and by high mortality among children in the occupied regions of the Soviet Union. This decrease in enrollment created a particularly favorable environment for the type of centralized reforms that would allow Khrushchev to exert control over the system, and eliminate another remnant of Stalinism.

Beginning in 1957, architects of the reforms set forth a plan that linked science, soviet successes in space, and educational reform, both explicitly and implicitly. In Khrushchev's *Memorandum on School Reorganization*, printed in *Izvestia* and *Pravda* in September 1958, Khrushchev noted, "the role of education is particularly great in our time, when it is impossible to develop the country's national economy successfully without making the broadest possible use of the latest achievements of science and modern technology."[76] He went on to claim, "our successes in all branches of the national economy and the outstanding achievements of Soviet scientists, engineers and technicians, whose work has enriched the Soviet homeland and all mankind with discoveries of world significance, are largely due to the fact that the Soviet higher schools have been able to train skilled personnel capable of tackling the most complex and responsible tasks."[77] Khrushchev's claims made clear that educational reforms were intended to reinforce Soviet technological pre-eminence, and reinvigorate the Soviet educational system after the devastation of the Second World War.

In a series of sweeping reforms heavily indebted to the polytechnical model espoused in the 1920s by Krupskaya and Lenin, Khrushchev's 1958 reforms sought to change the structure of the educational system and the national curriculum simultaneously. The basic question of the 1958 reforms was one of "strengthening ties

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[76] N. S. Khrushchev, "On Strengthening Ties Between School and Life and on Further Developing System of Public Education in the Country," *Current Digest of the Soviet Press* X (1958): 3. *Pravda, Izvestia, Sept. 21, 1958, pp. 2-3.*

[77] Ibid.

between school and life"[78] in which "every young man and woman must realize that in studying he or she must prepare for work, for creating values useful to man and society. There should be only one road for everyone, regardless of his parents' position – to go to school and, when studies are completed, to work."[79] The reforms attempted to reorganize the existing system of four, seven, and ten year schools, substituting in their stead an eight-year program of basic polytechnical education, followed by four alternative tracks leading to various specializations. The eight-year combination of elementary and incomplete secondary school[80] was to be made universal, and in regions (typically rural) where the four year school predominated, students would transfer to a seven or eight year school upon completion of the shorter program.

Following the completion of their eight-year incomplete secondary education, students' first option was short-term vocational school, or direct entrance into 'apprenticeship brigades' in factories and farms. For those interested in continuing their complete secondary education, evening (or 'shift') and correspondence schools were made available. The second available track directed students into experimental three-year programs during which they would continue their general education while devoting a substantial portion of their time to 'socially useful labor' and training. These programs required that fully 2/3 of students' time be spent working, while the remainder of their time would be spent completing their secondary education. The third option directed students into technical schools, which offered "a full secondary education, a

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[78] This was the formal title of Khrushchev's thesis on educational reforms in the form adopted as a resolution of the Central Committee on 12 November 1958, published "for nationwide discussion," and submitted to the Supreme Soviet. See Ibid, N. S. Khrushchev, "On Strengthening Ties Between School and Life and on Further Developing the Country's System of Public Education," *Current Digest of the Soviet Press* X (1958). *Pravda, Izvestia, Nov. 16, 1958, pp. 1-3.*

[79] Khrushchev, "On Strengthening Ties Between School and Life and on Further Developing the Country's System of Public Education," 1.

[80] The structure of schools in the Soviet system following the 1958 reform was as such: incomplete secondary schools consisted of forms one through eight, inclusive of elementary school, forms one through four. Complete secondary school was comprised of forms nine through eleven, which would be followed in some instances by higher education.

work specialty, and the title of specialist, middle grade."[81] Lastly, the resolution suggests "it would be advisable to retain [complete secondary] schools for children with superior aptitudes in music, choreography and the fine arts."[82]

This final option appears to lie well outside of both the spirit and the letter of the draft resolution. This clause, drawn from Article 17 of the draft resolution, is the only exception from universal 'socially useful labor' granted by the document. At the end of this particular clause, the intention of this conspicuous exception appeared: "Serious thought should be given to establishing special schools for young people with a particular propensity and aptitude for mathematics, physics, chemistry, and biology."[83] The possibility of special schools, exempt from the otherwise universal requirement for 'socially useful labor,' was left open due, in large part, to the efforts of scientists such as Andrei Sakharov. He, along with others in the Soviet scientific community actively dissented from the proposal in its original form. The education of Soviet scientists was one of the first issues over which Sakharov came to oppose Khrushchev, believing that "an interruption of the educations of promising students [by a period of mandated labor] would be damaging to their development."[84] Sakharov co-authored an article which appeared in *Pravda* in November 1958 arguing that the proposal for special shorter schools for students talented in mathematics and the natural sciences was "of great importance to the state; it is essential for the development of the exact sciences," noting additionally that, "mistrust of science is profoundly alien to the socialist society."[85]

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[81] Khrushchev, "On Strengthening Ties Between School and Life and on Further Developing the Country's System of Public Education," 6.
[82] Ibid.: 3.
[83] Ibid.: 7.
[84] Graham, *Science in Russia and the Soviet Union.* 169.
[85] A. Sakharov and Ya. Zeldovich, "Schools for Natural Sciences and Mathematics Needed," *Current Digest of the Soviet Press* X (1958): 14. *Pravda, Nov. 19, 1958, p. 3.*

In addition to arousing the ire of high profile Soviet scientists, the 1958 reforms also threatened the privileges of the non-scientific Soviet elite. The hierarchical nature of the Stalinist regime in Soviet Union had, by the Khrushchev era, created a significant and vocal class of privileged white-collar workers. This class sought to do "their best to keep their children clear of manual work by pushing them through the schools in the direction of college diplomas and white collars of their own, the whiter the better."[86] This factor clearly motivated Khrushchev's attempts to remove the stigma of manual labor, and to increase the number of graduates willing to pursue such work:

> Some young men and women, moreover, after graduating from secondary school, go to work in factories, plants and collective and state farms unwillingly; they look upon this as though it were an insult to them. This haughty, contemptuous, incorrect attitude toward manual labor is also manifested in some families. If a child is doing badly in school, some parents will tell him, 'If you don't do well in school you won't be able to enter a higher educational institution and will end up at a factory as an everyday worker...' All work, whether in a factory or on a collective farm, whether in an industrial enterprise, on a state farm or in an office – honest work, useful to society – is sacred and is a need of every person who lives in society and enjoys its blessings.[87]

The proposal to establish special schools for those students gifted in mathematics and the natural sciences was, in fact, a departure in the spirit of compromise from Khrushchev's initial position on the matter. The initial structure of the 1958 reforms as described in Khrushchev's first article on the subject, "On Strengthening the Ties of School With Life,"[88] called for entirely separate incomplete secondary schools for those gifted in the sciences, effectively separating those students from the bulk of the population very early on. Although Khrushchev demanded that "all students without exception should be drawn into socially useful work at enterprises, collective farms, etc., after completing the seventh or eighth grade," he added, "the new system of public education should provide, as an exception, appropriate secondary

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[86] Grant, *Soviet Education*. 99.
[87] N. S. Khrushchev, "Train Active and Conscious Builders of Communist Society," *Current Digest of the Soviet Press* X (1958): 17. *Pravda, April 19, 1958, pp. 1-3.*
[88] Khrushchev, "On Strengthening Ties Between School and Life and on Further Developing System of Public Education in the Country," 3.

schools for particularly gifted children who at an early age clearly show an ability in, say, mathematics, music or the graphic arts."[89] As a result of popular outcry and an effective campaign of publications on the subject[90], this suggestion was rejected out of hand as leading to 'streaming' (from the Soviet perspective, one of the cardinal sins of the American educational system), and as a result of widespread "suspicion that the setting up of new categories of special schools might provide an easy open door for the children of influential parents."[91] One commentator, a graduate student in the Mathematics Department of Moscow State University, went so far as to claim that because advanced studies in mathematics and science often fostered individualism, "the full-time graduate system should be eliminated. Although large sums are spent on this system every year, the country owes its outstanding scientific achievement entirely to workers, engineers and collective farmers in the sphere of production and to the collectives of research institutes and design bureaus."[92]

The establishment of separate provisions for "gifted" children was also at odds with Khrushchev's desire to address the growing class disparity within the Soviet Union. He noted, "in our country there is still an essential difference between manual and mental labor, and out of the heritage of the past there remains a situation in which preference is given to that part of the youth that must be enrolled in higher educational institutions and not go into the factories or collective farms...This is fundamentally

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[89] Ibid.: 3, 6.
[90] On articles calling for universal incomplete secondary education with a polytechnical curriculum, followed by specialized complete secondary education see, for example, A. Barkalov, "Changes are Necessary," *Current Digest of the Soviet Press* X (1958). *Izvestia, Aug. 23, 1958, p. 2,* N. Belenev, "Get Closer to Life, to Production," *Current Digest of the Soviet Press* X (1958). *Pravda, Sept. 24, 1958, p. 2,* N. N. Semenov, "Looking Into the Future," *Current Digest of the Soviet Press* X (1958). *Pravda, Oct. 17, 1958, pp. 2-3,* G. Zelenko, "Prepare Young People for Life and Labor," *Current Digest of the Soviet Press* X (1958). *Pravda, Aug. 26, 1958, p. 2.*
[91] Grant, *Soviet Education.* 92.
[92] L. Rvachev, "Is Full-Time Graduate Work Necessary?," *Current Digest of the Soviet Press* X (1958). *Pravda, Dec. 3, 1958, p. 4.*

wrong and runs counter to our doctrine and our aspirations."[93] In his speech to the 13th Komsomol Congress in April 1958 he added, "Certain people turn physical labor into a kind of bogey for children. I shall not even talk about the fact that such reasoning is insulting to the toilers of socialist society."[94] The conflict over granting exceptions to future scientists thus ebbed and flowed between the concerns of the public and the demands of Soviet science. Ultimately, the need to segregate future scientists *and* simultaneously reduce social stratification was impossible to rectify. The compromise, reached as a result of protest mounted by scientists like Sakharov, was still opposed by some as contrary to the egalitarian spirit of polytechnical education, and ceded only the bare minimum required by the protesting members of the Soviet scientific community.

The 1958 reforms also addressed the national curriculum and made sweeping changes to virtually every subject, as well as how they should be taught. The most dramatic alteration to the curriculum was the restructuring of polytechnic education. Prior to the reforms polytechnic education existed as part of the curriculum, but represented only 848 school hours, or 8% of the yearly total for grades one through ten combined, and a slightly higher 10.5% if grades five through ten are assessed separately.[95] The projected total for the 1959-1960 school year showed an increase in polytechnic instruction of 232% (2,820 total hours yearly) for grades one through eleven combined, and 222% for grades six though eleven (2,220 total hours yearly).[96] Instruction began in the first form with lessons in such basic skills as sewing, modeling, and paper-cutting. Over the course of a student's incomplete secondary education carpentry, woodworking, metalworking, agronomy, animal husbandry, and direct

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[93] Khrushchev, "On Strengthening Ties Between School and Life and on Further Developing System of Public Education in the Country," 4.
[94] Khrushchev, "Train Active and Conscious Builders of Communist Society," 17.
[95] Medlin, *Soviet Education Programs; Foundations, Curriculums, Teacher Preparation.* 37.
[96] Ibid.

industrial experience were all included in the curriculum in hopes that direct experience in a variety of manual occupations would increase respect for manual tasks, as well as assist students in deciding what job they would pursue.[97]

Classroom hours spent studying mathematics and the natural sciences also increased as a result of the 1958 reforms. This subject grouping, which included arithmetic, algebra, geometry, trigonometry, biology, chemistry, and physics, was to be increased by 400 hours between 1956 and1960, representing an increase of 12% of total classroom hours over the 1956 curriculum.[98] The revised and intensified math-science curriculum called for "*all* pupils in the regular 10-year school to complete mathematics through solid geometry and trigonometry, physics up to topics in atomic physics, and chemistry up to topics in organic substances."[99] Additionally, the polytechnical element of the revised curriculum incorporated a significant amount of hands-on math-science training and application. The attempt to link the Soviet educational system with the industries it supported actively encouraged student to utilize their math-science training while on polytechnical assignments. Students were required to apply their "theoretical, academic instruction" in math and science while participating in "productive labor exercises in school shops and at industrial and agricultural enterprises."[100]

As noted earlier, the Soviet educational system was experiencing a significant drop in enrollments in the late 1950s. The 'war dent' offered an opportunity to institute widespread centralized changes in the system, but it also caused serious concern among Soviet leadership over a looming labor crisis. The mandate calling for graduates of eight-year incomplete secondary schools to enter directly into the workforce was an attempt to alleviate some of this strain. This facet of the reforms was also linked

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[97] Grant, *Soviet Education.* 82.
[98] Medlin, *Soviet Education Programs; Foundations, Curriculums, Teacher Preparation.* 37.
[99] Ibid. 41.
[100] Ibid. 32.

directly to the emerging space program and its scientific infrastructure. During the 1950s Soviet economic planning was "geared to large-scale defense and research expenditure,"[101] of which the space program and the military defense sector were a significant part. Facing a potential labor shortage that could cripple the single most useful propaganda tool in the Soviet arsenal, Soviet leadership pursued the 1958 reforms to hasten school leavers' entrance into these industries. The 1958 reforms was "avowedly 'system centered,' organized around two goals: meeting the manpower needs of the society, and developing loyal, reliable citizens."[102]

The problem encountered in the late 1950s was one in which, from the state's standpoint, the educational system was not producing the skills or attitudes necessary to fuel key sectors of the economy. From the students' and parents' standpoint, education was grooming young people to take their place in the burgeoning elite, particularly in the area of scientific research. Sociological studies done in the Soviet Union over the course of the 1960s support this assessment:

> Boys favored professions with a high component of physics and mathematics, while girls preferred arts and biology...Leningrad school leavers set their targets high – they wished to join the scientific staffs of research institutes, and apparently often succeeded...If one were to construct a graph showing the needs of the economy, it would have the shape of a pyramid with a large base of agricultural and industrial workers as well as service personnel, narrowing toward an apex of highly qualified scientists and astronauts, while the wishes of young people would be represented by a reverse pyramid with a tiny base of those who are prepared to accept heavy manual work, broadening to a vast summit of specialists.[103]

The competing needs of the 'producers' and 'consumers' of Soviet education – an influx of manual labor for the former, and the prestige of membership in the intelligentsia for the latter – significantly undermined the practicality of the 1958 reforms. The study cited above was conducted beginning in 1961 and spanned the decade. That the

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[101] Grant, *Soviet Education.* 98.
[102] Alex Inkeles and Raymond Augustine Bauer, *The Soviet Citizen: Daily Life in a Totalitarian Society*, (Oxford, 1959). 129.
[103] Elisabeth Koutaissoff, "Young People's Choice of Careers and Manpower Planning in the Soviet Union," in *Education and the Mass Media in the Soviet Union and Eastern Europe*, ed. Bohdan Harasymiw (New York, 1976), 17.

graduates of the Soviet eight-year schools maintained their overwhelming preference for prestigious jobs in the sciences throughout the decade clearly displays the state's lack of influence over students' attitudes. Klaus Mehnert succinctly summarized this dilemma as such: "The majority [of students], I think, are enthralled at the prospects in science and research, and work with enthusiasm and devotion – enthusiasm, however, for science and research, not for politics and the doctrines of Marx and Lenin. The apolitical attitude is nowhere more apparent than among Russian students."[104]

The Failure of Reform

The rumbling of discontent over the polytechnical reforms began almost immediately after their implementation. The attitudes of specialists who feared a decline in the quality of Soviet science have already been mentioned, as have the attitudes of graduates and parents unwilling to reject their own preconceptions about manual labor. Further, Khrushchev's aims were often in conflict, which called the legitimacy of the reforms into question and further aggravated key segments of the population. Additional problems quickly became apparent. First, in a system which distributed rewards based on centralized quota systems, industries were uninterested in jeopardizing output while skilled workers trained students. Inexperienced and uninterested students also represented a risk to equipment and safety in many industries. Workers were typically uninterested in mentoring their trainees who were "either not given work or [were] put in the most neglected and dirty spots with antediluvian and broken-down equipment, and no care [was] taken to organize their labor. What, in such circumstances, [could] they, the children, get out of it?"[105] Second, the issue of remuneration for working students strained the Soviet budget, and was not offset by the

[104] Mehnert and Rosenbaum, *The Anatomy of Soviet Man.* 132.
[105] Matthews, *Education In The Soviet Union.* 32.

added production value of the student workers. Students, typically uninterested in the manual labor offered them, were inefficient learners and "the economic gain from teaching manual skills to schoolchildren was more apparent than real."[106] The cost in raw materials, new textbooks, teachers, and facilities served as an additional burden on the system. Perhaps most importantly, the training students did receive under the polytechnical reforms was largely abandoned. Very few students actually utilized the training they received in their future employment, and admittance to higher education continued to be the preferred path for secondary school graduates.[107]

Soviet success in space, and in the spheres of science and technology more generally, was a key factor in the initiation as well as in the ultimate failure of the polytechnical reform of 1958. Reform was undertaken from behind a veil of superiority, allowing the regime to operate from a fictitious position of power. The situation in this regard is not unlike the 'missile bluff' discussed in the first section of this paper. The West was panic stricken by the success of *Sputnik*, and assumed superiority for the Soviet educational system as a result. Khrushchev was therefore able to initiate the reform of his ailing system without conceding anything to the West. The irony of the reforms is that they simultaneously attempted to restrain the flood of interest in Soviet science and technology while succumbing to the demands of the scientific and political elite. The egalitarian nature of the reforms failed completely, and the sciences continued to represent one of the few paths by which Soviet youth could escape from the drudgery of *kolkhoz* and factory work. In spite of Khrushchev's best efforts to alter popular perceptions of manual labor to ease the labor strain from the 'war dent,' his conspicuous failure in this regard was the greatest impediment to successful implementation of the 1958 reform. The following chapter will show, however, that the

[106] Ibid. 33.
[107] Ibid. 31.

state's inability to dissuade school leavers from pursuing a place among the educated scientific elite is not surprising. In spite of Party mandates regarding the noble and necessary manual laborer, irresistible images of space and science as heroic, exciting, adventurous, and epoch defining continued to be offered to Soviet children throughout the Khrushchev era.

5. Space, Socialization, and Soviet Children

Texts, Images, and Identity

Before examining the images and stories of space offered by the Soviet regime during the Khrushchev era, it will be useful to briefly discuss the political socialization of children as it relates to children's literature in a more general sense. Establishing a link between the ideas presented by the state, artists, parents, and teachers (while remaining cognizant of the fact that, in the Soviet case, the lines were often blurred between these groups) and the attitudes of children is a necessary step in the argument being developed in this paper, and in understanding the political development of children.

The political development of the young was of the utmost importance to the Soviet state, and significant state resources were directed to this goal. As seen in the excerpts from Khrushchev's speeches in the preceding chapter, education certainly played a major, and perhaps the primary role in the Soviet concept of socialization. In the years after Stalin's death, one historian of education has written, "the Soviet rulers [aspired] to transform the educational system into the primary agency of political socialization for Soviet youth."[108] As part of this undertaking, children's leisure time represented an additional opportunity for the state to reinforce lessons from school, or to prepare an ideological foundation for pre-school children. The task is in any culture a necessary and fruitful one for the state "because a child's mind, like that of a grown-up, seizes symbols, craves a general explanation for a particular set of experiences; a nation's name, its flag, its music, its currency, its slogans, its history, [and] its political

[108] Jeremy R. Azrael, "Soviet Union," in *Education and Political Development*, ed. James S. Coleman (Princeton, 1965), 233.

life all give boys and girls everywhere a handle as they shape and assert their personalities."[109]

As a phenomenon of childhood, socialization is a task undertaken by adults to "make [children] behave in ways that are generally acceptable to adults – in ways that will fit the children to take their proper place in society, as adults perceive it."[110] Adults in positions of authority may employ a multitude of strategies for socializing the children under their care. Adults maintain physical dominance over children for most of their childhood, and possess the essential materials for survival – food, housing, and clothes, for example – which children would typically be unable to provide for themselves. Thus, the socialization of children can occur in a blunt and heavy-handed fashion resulting from adult physical and material dominance.

In addition to the physical and material means by which adults may mold children, a further sphere of influence is apparent. The cultural life of a society is an essential way in which a society may transmit its norms and needs to children. Knowles and Malmkjaer argue that adults "also inevitably influence children more subtly, often subconsciously, and, many would argue, most effectively, through language. The language of social texts – including those texts which we read to our children or give them to read for themselves – is therefore a particularly effective agent in promoting the acceptance by the child of these customs, institutions, and hierarchies."[111] The 'language' given to children by a society transmits the ideas it deems necessary for the acculturation of the child, and for the longevity of its cultural identity. Within the language and text of children's literature, cultural ideas compete for space, and simultaneously for the attention of the young reader: "children's books worldwide

[109] Robert Coles, *The Political Life of Children*, (Boston, 1986). 61.
[110] Murray Knowles and Kirsten Malmkjaer, *Language and Control in Children's Literature*, (London, 1996). 43.
[111] Ibid. 44.

demonstrate tensions between educational, religious and political exercises on the one hand, and various concepts of associated with 'freedom' (notably fantasy and the imagination) on the other. The literatures that result demonstrate very clearly those societies' concepts of childhood and its power-relationship to adults."[112] In short, the texts and images presented to children must be inspiring enough to keep the child's attention, while simultaneously fulfilling their *raison d'être*; that is, to inculcate children with the ideas and attitudes deemed acceptable by the society. Most importantly, in the context of the 'hyper-political' atmosphere of the Soviet system, "political socialization focuse[d] on the process of induction into the political culture."[113]

In the Soviet Union, the connection between texts for children and the socialization process was particularly explicit and important. The regime openly controlled the creation and distribution of these materials, and continuously updated its directives in order to keep pace with the ideological needs of the state. Yet the process of communicating with young audiences was necessarily imperfect, and as has already been suggested, the messages transmitted to children and the needs of the state were occasionally at odds. Further, finding a correlation between texts and images consumed by children and their attitudes is a difficult undertaking when conducted in the present; it is exceptionally difficult when the texts and images are decades old. When texts are successful in inculcating children with the norms and values of a given society, those ideas stop being of the text and become the child's own. When they fail, the ideas themselves maybe forgotten, the sources that attempted to transmit the messages maybe forgotten, or the message may be distorted by time or feelings of resentment. Asking an

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[112] Peter Hunt, ed., *Understanding Children's Literature*, (London, 1999). 6.
[113] Robert W. Clawson, "Political Socialization of Children in the USSR," *Political Science Quarterly* 88 (December, 1973): 685.

adult, therefore, whether or not the stories of their childhood were successful as socializing materials is a difficult proposition.

Further, childhood stories are certainly not the only means by which such ideas proliferate. Succinctly stated, "political behavior cannot be viewed simply as a product of political socialization unless political socialization is treated in a purely reductionist fashion – i.e., unless all other variables are reduced to the single variable 'political socialization.'"[114] Rather, a child's acceptance or rejection of a socializing message is a multi-tiered process:

> In looking at Soviet character-education through children's literature we are dealing with the overt process, but it must be remembered that there are covert influences as well which will affect the impact of overt character-education. The child reads that vodka is harmful but he sees his parents enjoying it. Inconsistency between textbook values and practised behaviours can only detract from the successful inculcation of the overt values.[115]

However, the ideas given to children, in this case directly by the state, do matter. If one accepts the assumption that a text can influence its audience, the words and images offered to children are an important component in understanding how children see themselves, their society, and their future. When combined with supporting evidence in other spheres, the lingering effect of socializing texts and images can clearly be seen. Children's books "are overtly important educationally and commercially – with consequences across the culture, from language to politics: most adults, and almost certainly the vast majority in positions of power and influence, read children's books as children, and it is inconceivable that the ideologies permeating those books had no influence on their development."[116] Additionally, because the texts and images under discussion in this paper were controlled by the state, they also offer interesting and

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[114] Azrael, "Soviet Union," 234.
[115] Felicity Ann O'Dell, *Socialisation Through Children's Literature: The Soviet Example*, (Cambridge, 1978). 21.
[116] Peter Hunt, "Introduction: The World of Children's Literature Studies," in *Understanding Children's Literature*, ed. Peter Hunt (London, 1999), 1.

constructive insights into the ambitions and phobias of the bureaucracy that created them.

In the most general sense, the Soviet system sought to instill the tripartite values of *narodnost'*, *partinost'*, and *kulturnost'*, the holy trinity of Soviet socialist faith. In doing so, a strictly dichotomous model was established which juxtaposed Soviet society with that of the West. The stark contrast between the socialism of the Soviet Union and the "hunger, unemployment, and eternal fear of tomorrow" in the capitalist world encouraged young people to feel "in debt before their own society and...obliged to repay its beneficence with endless and unstinting service."[117] One of the longest space-related stories featured in *Koster* during the Khrushchev era focused on exactly this idea.

Beginning in May 1964 the three-part story "Plennik kratera Arzakhelia"[118] ("Prisoner of Crater Arzachel") recounts, in the style of a personal journal, the disaster that befell the American space ship Atlanta and its sole surviving passenger, John Smith. Atlanta's attempted moon landing would have been the first, Smith writes, but it was disrupted by a moonquake, or possibly by something colliding with his ship. Smith is in shock following the crash, and as he surveys the damage, he notices the lifeless bodies of his two fellow crewmembers. He thinks to himself, "General Pershing obviously exaggerated when he spoke to the Senate Committee about the 100% safety of the ship."[119] Beginning with this thought, Smith's enmity towards Pershing in particular, and the US government in general, begins to develop rapidly. The flight, he discloses,

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[117] Azrael, "Soviet Union," 240.

[118] Though many of the articles under review in this section are fictional, nearly all of them incorporate actual scientific information into their fantastical narratives. In this instance, Crater Arzachel is actually a crater on the Moon. In subsequent stories, the star Ross 154, Saturn's moon Titan, and Alpha Centuri are all incorporated into the narratives. In this way, these stories are also serving an educational purpose by familiarizing children with the names and locations of celestial bodies and the scientific demands of space travel, while also entertaining them. As noted in Chapter 2, the interspersing of scientific information with fantasy was earlier a hallmark of both Tsiolkovsky and Bogdanov.

[119] A. Shalimov, "Plennik kratera Arzakhelia," *Koster* (May, 1964): 11.

was secret, so Americans will not know of his crash. In the case of an emergency Pershing promised to send a second flight within 24 hours. Smith doubts that Pershing will follow through on his promise, but believes that he might be saved by a Russian expedition that was scheduled to launch shortly after his.

Nearly six weeks after Smith's journal entries begin, he thinks he hears a crew of cosmonauts on the barely functioning radio in the ship's cabin. He hopes that Pershing has alerted the Russians to Atlanta's crash, but as they pass for a third time without stopping, it is clear that he has not. Echoing Soviet propaganda on the uses of space, he notes that while the Russian crew was carrying out scientific observations, his journey is doomed to remain secret because of American military aspirations. He and his crew would be "sacrificed for the prestige of [their] motherland."[120] An earthquake finally destroys the ship and Smith's oxygen supply, and he writes his last entry just under two months from his first. Many years later a Russian craft (resembling a "red arrow") is exploring uncharted areas of the moon when they discover a piece of basalt. Recognizing that it must have been brought from Earth, the Russian crew calls for assistance, and they finally discover the remains of Smith's ill-fated expedition. It is revealed that Pershing had sent a second ship, the *Antei*. It too ended in tragedy, however, and the attempts to conceal the second disaster eventually lead to the resignation of the American government.[121] The story clearly establishes the US as "the other": a nation willing to sacrifice its citizens for prestige, to keep secrets from its people, and to pursue its military objectives at any cost.

The attempt to instill a "love of labor, and in general, the 'protestant' economic virtues so central to industrial development"[122] acted as a corollary to the demand for

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[120] A. Shalimov, "Plennik kratera Arzakhelia, II," *Koster* (June, 1964): 44.
[121] A. Shalimov, "Plennik kratera Arzakhelia, III," *Koster* (July, 1964): 42.
[122] Azrael, "Soviet Union," 240.

unswerving loyalty to the Soviet Union and opposition to the 'other.' The jobs children would eventually hold were for the good of the party and the *narod*, and would guarantee the continuity of Russian and Soviet culture in spite of capitalist encroachment. The attitude toward science was similar, and its use was for the betterment of 'mankind,' understood to mean the ultimate victory of the Soviet system over that of its Western adversaries. Thus, as the previously cited story demonstrates, science was at the center of socialization efforts in the USSR in an attempt to differentiate itself from the 'other.' In doing so the state utilized attitudes that were not unique to Soviet culture. In fact, the devices employed were,

> commonly if not universally used [in literature for children] - the homeland as a place where one gets one's bearings; where one takes in a part of the world, keeps another part at a distance, and learns how to use one's given attributes with some sense of achievement and satisfaction. The homeland as a 'security blanket,' as a source of nourishment, as a place that gives sanction to some of one's urges and striving - while enabling one to discard others as foreign, as belonging to one 'them' or another.[123]

In the presentation of space and science, however, these messages were often contradictory with regard to other spheres of socialization, such as formal education.

The following sections will analyze several space and science related themes prevalent in the literature. In order to shed some light on the ideas which shaped children's attitudes, they will consider the portrayal of science/technology as a heroic force, and the scientist-cosmonaut as a hero.

Science, a Heroic and Productive Force

Throughout the Khrushchev era, *Koster* presented images and stories of scientists and cosmonauts as heroes, struggling nobly and tirelessly for the betterment of mankind. Science is represented as the key towards the ultimate creation of communism and as the leading edge of the Soviet advance against the West. The journal *Kommunist* asserted in 1959, "The latest major achievements of Soviet science

[123] Coles, *The Political Life of Children.* 63.

reflect in concentrated form the superiority of our socialist system, our economy, our culture and our Marxist-Leninist ideology over the capitalist system and its economy, culture, and ideology."[124] Science was the only force capable of 'creating' communism, of defeating the West, and of exposing the fraudulence of religion. In light of this portrayal, the state's inability to alter the aspirations of graduates is more easily understandable. Although the economy desperately needed the vast majority of school leavers to pursue manual and agricultural work, official children's literature consistently glamorized the lives and contributions of scientists and engineers. The 1958 educational reforms were an attempt to rectify the labor shortage by redefining manual, industrial, and agricultural work for young people. Simultaneously, however, the images being consumed by children offered a picture of Soviet life and work that contrasted starkly with the vision that inspired the 1958 reforms. This conflict between the needs of the state and the desires of its children will serve as an entry point for reviewing and analyzing the content of Soviet children's stories about space, and to a lesser extent, about science generally.

The idea of science as a heroic force for peace, prosperity, and security pervades the official pedagogical literature of the Khrushchev era. Numerous articles by Soviet pedagogues and academicians lauded science as a "productive force"[125] in the Soviet Union, and prescribed new ways in which to teach it to children. S. Vonsovskii, science teacher and member of the USSR Academy of Sciences, claimed that an understanding of the properties of atoms, light emissions, and electromagnetic fields "contains great

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[124] D. Panov, "A Comparison With U.S.A. in Science and Education," *Current Digest of the Soviet Press* X (1959). *Kommunist, No. 1, pp. 11-25.*

[125] Science was officially declared a "productive force" in the Party Program as adopted by the 22nd Party Congress, the first new Party Program since 1919. For specific mention of science taking its place as a productive force, see "The Program of the Communist Party of the Soviet Union - II," *Current Digest of the Soviet Press* XIII (1961): 6. *Pravda and Izvestia, Nov. 2, pp. 1-9.* For a discussion of this aspect of science and education, see S. Vonsovskii, "The Atom Knocks at the Classroom Door," *Education in the USSR: A Collection of Readings From Soviet Journals* 2 (1962): 110-111. *Uchitel'skaia Gazeta, May 22, 1962.*

possibilities for forming the dialectic-materialist world outlook in pupils."[126] In the journal *Fizika v Shkole*, M.S. Khushinskii looked to the sciences as a means by which students could be imbued with the ideas of scientific atheism: "The launching of the Earth satellites, the space rockets and the space ships has dealt a serious blow to the residue of religious belief in the consciousness of man."[127] Nevertheless, a great deal of work remained, and "in explaining the history of the development of physics, the teacher should demonstrate how the knowledge accumulated by man becomes systematized. Random data are generalized and converted into a rigorous and logical science of nature – physics, which in turn exercises an enormous influence upon the entire activity of man in the transformation and conquest of nature."[128]

In the same year, *Koster* presented a story on precisely this theme. Entitled "Zabluzhdenie Val'tera Nigga" ("The Error of Walter Nigg"), the story describes a Catholic theologian in the city of Zurich ruminating on the incompatibility of science and religion. Nigg is presented as a self-righteous man obsessed with the propagation of his own ideas, chief amongst which was a denial of science. Nigg's book, *Christian Fool,* called for Catholics to remain ignorant of science, to keep it distant and remain satisfied with the 'brainless sanctity' (*bezmozglaia sviatost'*) of the Catholic Church. The pope contacts Nigg and calls him to Rome for a conference with top church authorities on the matter. A debate between Nigg and the Pope's advisors ensues, with the latter insisting that science and God are in fact compatible. Nigg becomes steadily convinced of the Pope's position, and the debate ends with Nigg in tears, kissing the Pope's hand and declaring that his interlocutors were the true Christian fools. Another debate begins to rage amongst the Pope's men on this point. They reply, "We are not

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[126] Vonsovskii, "The Atom Knocks at the Classroom Door," 111.
[127] M.S. Khushinskii, "Education in Scientific Atheism in Physics Lessons," *Education in the USSR: A Collection of Readings From Soviet Journals* 2 (1961): 112. *Fizika v Shkole, 1961, No. 1.*
[128] Ibid.

fools. We are able to accommodate ourselves."[129] The story closes as the men argue whether they are fools or swindlers (*zhuliki*), and they eventually come to a compromise – they decide that they are both. The reader is shown that any attempt to reconcile science and religion is foolish, and that in the end, those who makes such accommodations are as irrational as the religious believers who reject science altogether.

The sentiment that religion and science are wholly incompatible, and that those who attempt to reconcile them are deluded swindlers, is present in a nearly identical form in the aforementioned article "Education in Scientific Atheism in Physics Lessons." Khushinskii argues, "It is necessary to demonstrate to the students that religion arose as a consequence of man's helplessness in the face of nature."[130] Science, however, became the heroic force that allowed students to understand,

> The entire world consists of matter in motion, that natural phenomena are interrelated and interdependent, that the laws of nature are objective and knowable, and that consequently the world has no room for God, and that 'miracles' are impossible in nature...In our century – a century of the unprecedented flourishing of science and technology – the churchmen find it very difficult to defend their views solely by reference to holy writ. Therefore they attempt to give their preachings a seemingly scientific character, and even make use of the latest scientific discoveries toward this end. Most frequently these are unconfirmed discoveries or hypotheses which are presented, with the aid of various interpretations of the Bible, as proofs of the existence of God, spirits, etc. Therefore it is important to demonstrate to the pupils wherever possible that the churchmen employ scientific data for their own purposes, and to expose this...[131]

International Affairs (Moscow) echoed this view, noting, "The appearance of man-made satellites in space also proved the stupidity of attempts to combine science with clericalism, with religious theories regarding the divine origin of the world."[132] The story of Walter Nigg is accompanied by an image of a monk, presumably Nigg himself, smiling widely and pointing to a picture of *Sputnik* surrounded by a halo typical of

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[129] I. Grigor'ev, "Zablyzhdenie Val'tera Nigga," *Koster* (March, 1961): 111.
[130] Khushinskii, "Education in Scientific Atheism in Physics Lessons," 112.
[131] Ibid.: 113.
[132] I. Ilyichov, "The Sputniks and International Relations," *International Affairs (Moscow)* (March, 1958, 1958): 11.

religious icons. To the left of *Sputnik*, two additional icons hang on the wall, suggesting the duplicitous nature of the religious stance on science. Here again, science represents the force legitimizing the teachings of the Soviet state, and debunking the myths of the old world.

The 1960 article "K Lune" ("To the Moon") adds a noteworthy sense of nostalgia to this description of science as a heroic force. The author describes how he, presumably speaking on behalf of Soviet society, has watched the idea of space develop as a social and scientific phenomenon in the Soviet Union. He describes the inescapable pull of the moon in its nightly appearance, the power it exerted on those who watched and wondered, "What is it for? What is it made of? Why does it move?"[133] The story describes the early fairy tales about the moon and the development of a literature celebrating its mystery. As science progressed, the article notes, the moon became less mysterious and "although the moon stayed the same, it changed for us every year. We now knew the moon was a planet and the patches were seas and mountains."[134] The stories of Verne and Wells related fantastic tales about the mysterious celestial body, but as science continued to answer previously unanswerable questions about space, they abandoned Western fictional accounts and turned instead to Tsiolkovsky. Russians, the story claims, "our country men – writers and scientists – said that we will definitely conquer space."[135] Tsiolkovsky "was science. For children and young people, it was science without being patronizing to our age."[136] In "K Lune," the inexplicable mystery of space is slowly unraveled by the progress of science. The story describes science as a heroic force capable of redefining man's relationship with the cosmos and himself, inevitably progressing to surpass even the most fantastic fictional accounts of space.

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[133] V. Liubitskaia, "K lune," *Koster* (January, 1960).
[134] Ibid.
[135] Ibid.
[136] Ibid.

The best representation of the Soviet view of science as a heroic force appears in the 1961 story "Golos iz t'my" ("Voice From the Darkness"). The story is a rather long fictional account about a manned expedition to space, in which a three-person crew encounters aliens in distress. The crew is returning to Earth from a journey to the star Ross 154, each member dreaming about being back on their home planet, seeing their children, and participating in the life they left behind years ago. When they are four years from Earth they receive a signal from the region of the star of Bernard. Using a piece of machinery they refer to as the 'electric brain,' the crew attempts to decode the message, at first unsuccessfully. Two months pass before they can interpret the sounds, and after some debate, they agree that it is a distress call from a planet located nearby. They alter their course and head for the planet, landing on its surface several days later. After seeing signs of life, they notice several figures emerging from a nearby cave. The crew approaches as the aliens remove their helmets revealing strange features; elongated bodies, long legs, fur clothes, blue faces, large mouths, and scales on their heads. Though frightened, the crew continues on and sees three more aliens lying on the ground, apparently dead. High tech gadgets are strewn across the ground, and most appear broken. After unpacking supplies, the sick and starving aliens begin to gorge themselves on the food the crew has brought. The crew realizes that the three aliens they believed to be dead are alive, but extremely ill. Crewmember Eisenberg invites one of the aliens to speak with him using the electronic brain as an interpreter, and he discovers that the aliens' planet is in disarray. Through the electronic interpreter he hears "Fourth planet...ukumi...our motherland...our way was...not very far...it was dangerous...we could not turn back."[137] Eisenberg wonders what might have happened, thinking that perhaps their troubles resulted from the class struggle on their home planet.

[137] L. Podocinovskaia, "Golos iz t'my," *Koster* (April, 1961): 55.

Eisenberg and Olga, the crew doctor, begin to discuss Earth with the alien. Olga reassures him that life will be better in the future. "On our planet," Olga tells the alien, "before it was very bad, and there were many horrors. You will return to see your family. Don't have such [negative] thoughts."[138] Eisenberg says, "On Earth there are no borders between people and no division between countries, as there were before,"[139] and, showing the clear link between science and peace, he immediately begins to describe the photon engine and the benefits of thermonuclear energy. After some deliberation, it is decided that Olga will attempt to operate on the sick aliens using Earth medicine. The operations are successful, and she saves the aliens, including their leader, Chinzagi.

The denouement of the story comes amidst a quarrel between Olga and another crewmember. All of the crewmembers are troubled; they traveled to space to meet strange peoples, and to learn from them. Instead, it was they who were required to help others, and they who did the teaching. In "Golos iz t'my," the science of the Soviet Union has brought peace and well being to the world, and proves equally capable of bringing it to distant planets. The heroic crewmembers abandon their dreams of home, of their friends and families, and risk everything to rescue strangers in distress. Individually, each member of the crew is a hero for putting the welfare of others first and for having the courage to face uncertainty encouraged only by the belief that what they are doing is right. It is the idea of science, however, that is the story's true hero. It is a borderless, faceless, unprejudiced force that represents peace, progress, health, and humanity. In "Golos iz t'my" science does not recognize the difference between the human healer and the alien patient, although Olga and her fellow crewmembers do, and are frightened by the unfamiliarity. The story insists that science is the force by which

[138] Ibid.
[139] Ibid.: 56.

man can overcome such irrational fears, act selflessly and collectively, and bring the high-minded goals of the Soviet Union to fruition.

Engineers, Physicists, and Cosmonauts; Heroes of Soviet Labor

The previous section has argued that children's literature presented science as a force capable of bringing the promise of communism to fruition. The individual scientist or cosmonaut is portrayed as a bearer of progress, helping to control and direct its beneficence. As one would expect, the most striking example of the cosmonaut-as-hero theme is found in articles and stories about Yuri Gagarin. After becoming the first man to orbit the Earth on 12 April 1961, Gagarin became a worldwide celebrity and the face of Soviet scientific achievement. The first reference to Gagarin in *Koster* appears on the title page of the May 1961 issue of *Koster*, and depicts Gagarin peering through the porthole of *Vostok* at the Earth, which is positioned such that Africa is the only continent visible to him.[140] A poem appears next to the image:

Friends
Fellow citizens
People of Earth
Everyone
Who is nearby
Everyone
Who is far away
It has come to pass!
Into the starry ocean
He sailed by
The first son of Earth![141]

The following two pages are also dedicated to Gagarin: the first contains a full-page photo of the cosmonaut in his military regalia. The second contains an excerpt from Gagarin's communications with Earth, and his message to the Khrushchev and the party upon his return: "I would like to report to the party, government, and personally to Nikita Sergeevich Khrushchev that the journey was successful, I feel well, and I have no

[140] H. Kustova, *Koster* (May, 1961): 1. The image echoes the same theme described in the illustration "С наступающим днем, Африка!," cited in Chapter One of this paper.
[141] "Untitled," *Koster* (May, 1961): 1.

injuries or damage." The journey, it is noted, "opened grand perspectives for the conquest of the cosmos by man."[142] The two-page feature on Gagarin is conspicuous primarily because such attention is rarely, if ever, devoted to any single figure in *Koster*, with the exception of Lenin. Such grandiose treatment of an individual is certainly the exception, and lends credence to O'Dell's assertion that "After Lenin, Gagarin is...the most frequently presented major real-life hero."[143] Though O'Dell's survey focuses primarily on the 1970s, even a cursory glance through the pages of *Koster* and *Murzilka* in the 1960s will confirm that her assessment is equally applicable in the period under consideration here.

In August 1961, *Murzilka* published a poem dedicated to Gagarin entitled "Pervym iz kosmosa zemliu uvidel kommunist" ("The First to See the Earth From Space Was a Communist"), accompanied by a photo of him amongst a pioneer group.[144] On the preceding page it is noted, "Communists are the best sons of the people, those who most closely resemble Lenin. Communists are Nikita Khrushchev and Yuri Gagarin, Valentina Gaganova and Evgeniia Doliniuk, your teachers and those closest to you, workers and tractor drivers, doctors and scholars."[145] Gagarin's life was deemed suitable to be presented as a complete biography, with special attention paid to his exceptional grades, his wide ranging interests – including science, sport, music, art, theatre, and agriculture – his love for his family, and his dedication to the Soviet Union.[146] Even the words he purportedly uttered upon take off were converted into an acronym to display the advances of Soviet science. "Nu, poekhali" ("Let's Go") traces the development of the space program from *Sputnik – Nachalo shturma* (the beginning

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[142] "Slushai, zemlia!," *Koster* (May, 1961).
[143] O'Dell, *Socialisation Through Children's Literature: The Soviet Example*. 107.
[144] Ia. Akim, "Pervym iz kosmosa zemliu uvidel kommunist," *Murzilka* (September, 1961): 5.
[145] "Malen'kii grazhdanii strany sovetov," *Murzilka* (September, 1961): 4.
[146] B. Kislenko, "Obyknovennyi," *Koster* (June, 1961).

of the storm) – though his launch – *I vot on letit* (and…there he goes). The article concludes by noting,

> He took with him into the cosmos the will and experience of mankind. He took the Earth's songs, dreams, and hopes. He took the flag of his motherland - the hammer and sickle, crossed in the sun's rays. He thought of you, opened the interplanetary path for you. Tomorrow you will follow. And what is more, before launch you will say, with every right, simply and in a homely way (*po-domashnemu*): '*nu, poekhali*!'[147]

The myth of Yuri Gagarin presented him as the archetypical Soviet hero and a New Soviet Man to be respected and emulated in the same way as those at the highest levels of the Soviet leadership. This was in many ways not too misleading. Following his successful return from space Gagarin became a Soviet official and served as a representative to the Supreme Soviet of the USSR for the Smolensk region.[148] The accolades awarded to him were numerous: the Order of Lenin and the Gold Star Hero of the Soviet Union. The town in which he grew up was renamed Gagarin, as was a square in Zvyozdny Gorodok (Star Town). Every cosmonaut who followed Gagarin's path into the heavens began their journey by leaving flowers beneath the statue of him in the square.[149]

The myth of Nikolai Kibal'chich played a foundational role for the creation of the Gagarin myth. The May 1959 article "Put' i zvezdam" describes the incarceration of Nikolai Kibal'chich and his blueprint for space travel. Also cited earlier, the story of N. Kibal'chich is equally important in this new context for the way in which it blends scientific and moral concerns, and locates them simultaneously in an individual *and* in the collective. Imprisoned for the assassination of the tsar, Kibal'chich devises a blueprint for a flying apparatus capable of transporting man into space. After his execution, the plans remain under guard as a state secret until they are discovered

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[147] "Nu, poekhali," *Koster* (June, 1961): 4-8.
[148] *Yuri Gagarin: The First Cosmonaut*. 31.
[149] Ibid.

following the October Revolution. The article quotes testimony from Kibal'chich in which he notes, "I believe in the feasibility (*osushchestvimost'*) of my idea, and this belief supports me in my terrible situation. If my idea, after thorough discussion by educated specialists, is recognized as feasible, than I will be happy that I have rendered a great service to the motherland and people."[150] Kibal'chich is lauded as an individual hero working on behalf of, and as a result of the contribution of the collective. However, Kibal'chich's genius would have been wasted if not for the Bolshevik revolution and the Soviet state's ability to recognize it. Several articles discussing the accomplishments of individual scientists display a similar theme.[151] The Kibal'chich myth should be seen as foundational to the myth of Gagarin however, for the way in which it clearly links the subject with the core values of courage, intelligence, and dedication to Russia and her people, but finds them meaningless without the collective will to unlock them.

Though the hyperbole used to describe Gagarin is unequalled in any other *Koster* article or story, the scientist/cosmonaut-as-hero theme is prevalent throughout this literature. Already in November 1958, in one of the first articles to appear in *Koster* following *Sputnik*'s launch, a short propaganda piece describes *Sputnik*, its worldwide social and scientific significance, and the heroic potential which existed for sending Soviet scientist-heroes into the heavens. The article concludes by noting, "In the near future, it will not only be instruments, but also live creatures (*sushchestva*) setting off on reconnaissance to the cosmic environs of the stars. This is why progressive people of all countries rejoice in the idea of Soviet science, engineering and construction."[152] The article celebrates the achievements of Soviet science, but notes that it is an impending

[150]Grigor'ev and Danilova, "Put' k zvezdam," 25.
[151] See A. Antryshin, "Na shturm mirovogo prostranstva," *Koster* (September, 1957), A. Tomilin, "Udarnaia volna sveta," *Koster* (February, 1959).
[152] "Sdelan V SSSR," *Koster* (1957).

manned mission that holds the greatest potential for mankind. However, in spite of a few initial attempts such as this to capitalize on *Sputnik*'s domestic propaganda value, there was a relative paucity of material made available to children within the pages of *Koster* and *Murzilka* immediately following *Sputnik*'s launch. The few articles that did appear in the months just before and just after *Sputnik* share a similar style to the article cited above. Unlike later articles that would capitalize on the fantastic side of space travel, these article tend to be dry, often technical in nature. They hardly seem appropriate for the age groups to which they were directed.[153] As discussed in the first chapter, *Sputnik* sparked a worldwide propaganda storm that was carefully manipulated by the center for maximum value. The frenzy did not begin immediately, however. On the day of *Sputnik*'s launch Khrushchev was vacationing in the Crimea, and Western journalists who interviewed him soon after found his attitude "almost casual."[154] If, as Daniloff argues, "the Soviet leaders did not seem to have foreseen the full political impact of the launching of *Sputnik*,"[155] then the scarcity of material for children on the subject is easier to understand. As the propaganda value of *Sputnik* on the world stage became increasingly clear, the amount of domestic material made available for children in the pages of *Koster* steadily began to increase.

The earliest portrayals of *Sputnik* certainly displayed a clear message of the scientist and scientific-as-heroic, and beginning in late 1958 children's articles began to add an element of moral education to these tales. In October 1958 "Na kryl'iakh vremeni" ("On the Wings of Time") recounted the story of three Komsomol members and their journey through space and time. The three travelers (called "commander of

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[153] See, for example, Antryshin, "Na shturm mirovogo prostranstva.", A. Antryshin, "Zaatmosferstroi," *Koster* (March, 1958), B. Liapunov, "Lunnyi reis," *Koster* (November, 1958), I. Metter, "Kosmicheskie luchi," *Koster* (March, 1957).
[154] Daniloff, *The Kremlin and the Cosmos*. 66.
[155] Ibid.

the expedition," "girl-historian," and "youth in glasses - technical specialist") are returning to the year 2258 aboard the Komsomol time machine (*komsomol'skii khronolet*) after a visit to the year 1958. In the year 1958 the crew visited a young man studying geometry late into the night in a worker's dormitory. The travelers provide the dedicated student with a device that speaks answers to the challenging problems he is working on, but the student is more interested in dismantling it to discover how it works. When asked what he plans to be doing in ten or twenty years, the student answers, "Engineer, of course."[156] The story then turns to a series of vignettes in which the student is receiving exam scores, attending an avionics institute, drawing blue-prints for a rocket ship, making calculations, playing sports, watching the construction of an interplanetary spaceship, entering the control room in his space suit, and finally, blasting off to explore distant planets in 1969. The commander thinks he recognizes the young man, and upon returning to the year 2258, he researches the young man's life. The story ends as the commander is looking at a picture of three people in space suits dated 1969. The student, now an "engineer-astronaut," stands in the center, heralded as a "conqueror of the cosmos" (*pobeditel' kosmosa*).[157]

Given the nature of the 1958 educational reforms, the location of the student in a worker's dormitory is significant. The text portrays a student dedicated to his work, to his science, and to the future of the Soviet state, all neatly and succinctly symbolized in his housing arrangements. Further, the vignettes present the student as a multi-faceted Soviet man: sportsman, scientist, worker, and idealist. The story extols the virtues of hard work and dedication, the success of the Soviet space program, and predicts Soviet interplanetary space travel within 11 years. Most importantly, the story traces the young

[156] "Na Kryl'iakh Vremeni," *Koster* (October, 1958): 47.
[157] Ibid.

worker's path to heroism. From the worker's dormitory to the cosmos, the young man is the dedicated, multi-talented hero of Soviet myth.

"Lunnyi siurpriz" ("Lunar Surprise"), featured in the August 1963 issue of *Koster*, recounts the story of two cosmonauts deployed to the moon to construct a telescope to monitor the sun. While on the moon, the two men begin losing their ability to stand, walk, and eventually even to speak. As their faculties are deserting them, one notes, "Someone has written that a cosmonaut has a special character, and they never know the feeling of fear. Such nonsense!"[158] A second ship is expected within 24 hours, but the two men quickly recognize that they have only enough oxygen to last six hours. In spite of his state, the captain, Savin, begins to calculate whether or not they can survive on the oxygen they have remaining. After acknowledging that they will not survive much longer, Savin becomes despondent and begins to prepare the tape recorder so that the two can leave a full record of their situation for the crewmembers of the next ship. Sasha, the junior cosmonaut, does not accept the inevitability of their deaths, and suddenly proposes that their incapacitation is being caused by the lack of a magnetic field. He struggles to reach one of the magnetic generators they brought with them from Earth, and upon activating it, their ability to speak and move about slowly returns. Savin is amazed by his charge's ability to think so clearly under such debilitating circumstances. As they recover their physical and mental abilities, they walk to the telescope and look down at earth, "Somewhere there is Leningrad, and our close friends..."[159] "Lunnyi siurpriz" is a tale about the heroism of cosmonauts, and the ability to react to exceptional circumstances with equally exceptional bravery. It is also, however, about the relationship between man and machines. The cosmonauts are surrounded by and dependant on technology, but it is only through the bravery,

[158] A. Khlebnikov, "Lunnyi siurpriz," *Koster* (August, 1963): 54.
[159] Ibid.: 56.

intelligence, training, and lucidity of the junior crewmember that the machines are deployed to assist them in their moment of need. Though technology is the means by which man can explore space, it is the heroism of the explorer himself, his cunning, ingenuity, courage, and his ability to *utilize* and, more importantly, to *dominate* the machines at his disposal which remain the most important factors in his survival, and in the success of the mission.

Man & Machine

One of the first purely fictional accounts of space travel in *Koster* appeared in the July 1959 issue. Entitled "Shestoi ekipazh" ("The Sixth Crew"), the story is an early example of the "man and machine" theme outlined in "Lunnyi siurpriz." The article describes the crew of a space station on Titan, a satellite planet of Saturn.[160] From their base the crew controls the flight of *Orel*, a satellite in the 83rd year of a 92-year flight to the star Alpha Centauri. In the opening scene, three people in space suits approach and enter a luminescent structure that serves as their control center. Two of the three are newly arrived to Titan; the third has been on the planet for some time controlling *Orel*. Because the trip to Alpha Centauri is so long, the article explains, no human crew could survive the journey. As a result, the space station was established to house the human crew necessary to monitor the progress of the satellite and repair any malfunctioning control equipment. In this story the newly arrived, untrained engineers are confronted with a meteor shower that threatens the satellite. Disaster is averted through quick reactions and bold decision-making in the captain's absence. The story closes with the captain, whom the young recruits thought was unreachable during the crisis, appearing in the doorway. It is revealed that the 'crisis' was merely a test orchestrated by the

[160] V. Zhyravleva, "Shestoi ekipazh," *Koster* (July, 1959).

veteran captain, and the young recruits had been successful in making the correct decisions. In two senses, "Shestoi ekipazh" is another clear representation of the engineer-as-hero theme. First, even though the new recruits had no experience, and had only read about such emergencies from textbooks, their training prepared them to make difficult decisions with confidence, and to prove themselves to their superiors. Second, in spite of the advanced equipment used to control *Orel*, the engineers from Earth are again the most essential part of the mission. They are required to constantly monitor the equipment as a boss might monitor an employee, in turn clarifying the relationship between man and his machines.

The relationship between man and machine is one of the keys to understanding how the Soviet Union presented technology to its children, and is an important facet of the scientist-as-hero theme running throughout virtually all of this literature. The Soviet conception of technology insisted man must and would remain in control, technology would serve as an empowering and liberating factor for the workers and masses, and that advances in technology would never render the talents and aspirations of man irrelevant. In "A Comparison With U.S.A in Science and Education," Panov states, "In capitalist society...any theory is approached not from the standpoint of whether it is right or wrong, but from the standpoint of whether it is useful or harmful to the capitalist."[161] By contrast, in the Soviet Union "the development of science under socialism is the vital concern of all the people. After all, every new scientific or technological achievement is used for the benefit of the people, and any success of science in our country is regarded by every Soviet citizen as his own personal

[161] Panov, "A Comparison With U.S.A. in Science and Education," 3.

success."[162] Discussing Yuri Gagarin's successful return to Earth, A. Sovietov makes the point even more explicitly in the pages of *International Affairs*:

> Can man be the master of the machines that he creates? Many reactionary bourgeois and Social-Democratic ideologists roundly deny this...It is not man, they say, who dominates machines, but machines that dominate man. It is a very convenient point of view for the imperialists, for it 'relieves' them of the responsibility for using machines. In other words, as the aphorism has it, man is the plaything of fate.[163]

In the Soviet formulation the scientists and engineers dedicated to the advancement of technology were the true builders of communism, heroes developing the means which would free man from the burden of work to pursue other goals and interests. For Marx, the point at which communism has been "built" is reached when the political and social stratification of society, both between and within society's individual members, no longer exists.[164] So, whereas in capitalist societies, "owing to the extensive use of machinery and to division of labor, the work of the proletarians has lost all individual character, and consequently, all charm for the workman" (Marx),[165] technology in Soviet society "opened up prospects for the flourishing of all the talents and all the creative potentialities of the broadest masses of the people" (Panov).[166] Sovietov echoes this view stating, "This is why the supreme triumph of Soviet science, which has blazed the trail into space, is also a triumph for our social system. This is why the break-through into space demonstrates that a revolutionary renovation of human society, the final collapse of the old, and the complete victory of the new world are inevitable."[167] In short, technology represented man's greatest opportunity to realize

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[162] Ibid.
[163] A. Sovietov, "Break-through Into Space and the Destiny of Man," *International Affairs (Moscow)* (May, 1961, 1961): 4.
[164] See "On The Jewish Question" in Karl Marx and Friedrich Engels, *Karl Marx, Frederick Engels: Collected Works*, (London, 1975). Vol. 3, pp. 146-174.
[165] Karl Marx and Friedrich. Engels, *The Communist Manifesto*, (Harmondsworth, 1967). 87.
[166] Panov, "A Comparison With U.S.A. in Science and Education," 3.
[167] Sovietov, "Break-through Into Space and the Destiny of Man," 7.

the reintegration of the political and social spheres of life on which Marx based so much of his work.[168]

While "Shestoi ekipazh" clearly demonstrates the Soviet line on the relationship between man and machine, virtually all space and science stories contain this motif, if not always as explicitly. In "Na kryl'iakh vremeni," also cited above, the worker-student's attempt to disassemble the futuristic geometry machine shows the studious Soviet youth dominating technology. The piece of equipment is unfamiliar, far more advanced than anything he has seen (we presume), and represents a tempting opportunity to shirk his school responsibilities. Rather than stand in awe of the alien technology, however, he deconstructs it. The reader is left with no question about the instrumental nature of the man-machine relationship; at least as far as Soviet citizens are concerned. "Korabl'-Sputnik," a purely technical piece, describes the launch of the second *Sputnik* on 19 August 1960, the first Soviet launch successfully brought back into Earth's atmosphere. It explains a number of advances made since the previous launch, including a new braking system, and discusses the animals – *Laika*, *Snezhinka*, and now *Strelka* and *Belka* – which served as passengers aboard these unmanned flights. In describing the flight the article notes that the ship, which circled the Earth 18 times, could have circled 30 or 40 times. Although it is the "first among equals" (*pervyi sredi sobrat'ev*) in the Soviet space program and represents a major step forward for Soviet science, the ship eagerly answered to its earthbound controllers as it "received the historic order: 'Stop! Begin your descent!'"[169] Although the technology is awe-inspiring, this command demonstrates a clear relationship of control and hierarchy between the ship and its handlers. In fact, the ship's controllers are not demanding that

[168] See Leszek Kolakowski, "The Myth of Human Self-Identity: Unity of Civil and Political Society in Socialist Thought," in *The Socialist Idea: A Reappraisal*, ed. Leszek Kolakowski and Stuart Hampshire (London, 1977).
[169] F. Iakovlev, "Korabl'-Sputnik," *Koster* (December, 1960): 12.

the ship stop. Rather, after circling in Earth's orbit 18 times, they are actually commanding the ship to 'go,' to reengage its rockets and to return to Earth. It is the command to "Stop!" that evokes a relationship of dominance, and changes the nature of the article from one of merely technical information to one which reinforces the Soviet view on man-machine relations.

Space & Time

The theme of 'space and time' adds an additional dimension to the scientist-as-hero motif. Archetypical in this sense is the 1961 story "Vozvrashchenie" ("The Return"), which recounts the journey of an international crew of space explorers. The story tracks the mission of five astronauts: two Russians (including the author), a Frenchman, an American, and a German. As the story begins, only the Russian narrator and the German, Marta Eprecht (the only female crew member), are still onboard; the rest of the crew has either died or stayed behind on distant planets. Their journey began in December 1972, and on 6 November 1975 Marta and the Russian captain had a son, who they named Volt. Shortly after Volt's birth, Marta was killed in a meteor shower, leaving only the Russian narrator and his son to return to Earth. The story, narrated ten years after Volt's birth, relates their journey home and focuses on the difficulties that Volt will have adjusting to life on Earth.

Representing the mythical New Soviet Man, Volt is, at only ten years old, a skilled mathematician and physicist already superior to his father at even the most difficult calculations. Further, he is a child without a motherland. A borderless person in the truest sense, Volt has known nothing but the freedom and emptiness of space his entire life. As they pass the planets, Volt asks his father why they have such strange names. He replies that Mars was once the name for the Roman god of war. Volt is

perplexed by the answer because he has never heard of the Romans, war, or God. As Earth comes into view Volt asks, "Is that your motherland? Mine and yours! You are a human being – a son of Earth!" his father replies.[170] Volt does not understand his father's answer, but his confusion goes unnoticed.

As they come nearer to Earth, they enter its orbit and begin to search for a human voice to assist them in their landing. After several attempts and no responses, Volt's father asks himself, "What if there are no people left on Earth, only machines?" Echoing the theme addressed in the previous section, he continues: "What if machines make new machines and do everything humans did?"[171] Without the help of an Earth-bound crew, Volt and his father land the ship in the exact spot from which they departed years before. Earth is an unfamiliar sensation for Volt and upon exiting the ship he falls to the ground, unable to stand. Nevertheless, immediately he spreads his arms "as though he were hugging this strange blue planet."[172] A man finally appears to greet Volt and his father, and the three stand before a statue that was erected in the crew's honor years ago at the location of their take-off. The man who has come to meet the returning travelers appears dumbstruck as Volt's father greets him in Russian, German, and English. Finally the man replies to the greeting, and "a warm wave of pride flooded Volt's father. The Earthman spoke perfectly of his homeland – Russian."[173] Communism, collectivism, and egalitarianism are victorious worldwide, and Volt quickly learns to love the Earth. Although the themes of the New Soviet Man, man and machine, and the ultimate and inevitable victory of Communism are prevalent throughout the story, the relationship between space, time, and progress serves as the primary focus.

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[170] A. Tomilin, "Vozvrashchenie," *Koster* (November, 1961): 15.
[171] Ibid.: 18.
[172] Ibid.
[173] Ibid.: 20.

From the beginning of the story, Volt's father is constantly concerned with time, and how it may have left them behind. He considers the "paradox" of time, and wonders if it is true that as a rocket approaches light speed, time becomes different from that on Earth. He wonders to himself, "day in and day out I have written in my journal for thirteen years. Thirteen years – this is our rocket time. But on Earth?..."[174] Although Volt is only ten years old as the story is being recounted, his father notes that he appears to be more like 16. In space, time functions differently than on Earth, and it is a subject which preoccupies Volt's father throughout the story. As Volt and his father are approaching Earth Volt asks, "Will someone meet us?" but his father cannot answer his question. He believes several millennia may have passed, and if this is the case, he wonders whether he will recognize the world to which he is returning.[175] However, as the story concludes, time has shown itself to be particularly friendly to the travelers, and the world to which they return is far better than the world the crew left so many years ago. Communism has been built and the people of Russia live in communal harmony. Volt's father's fears of a world dominated by machines are completely unfounded. The city is bustling, noisy and alive, and the returning travelers are readily accepted as members of the new society. The story describes a peaceful, property-less utopia: "In the city there were no museums. Everything worthy of attention belonged to everyone. Works of art were displayed along the street, decorating walls and arches, roadways and squares."[176]

The man who meets the two travelers is told that the remainder of the crew has died or stayed behind. Volt's father tells the man that he has kept Marta's body in order to give her a proper burial on Earth. The man refuses to allow this, replying that just

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[174] Ibid.: 11.
[175] Ibid.: 17.
[176] Ibid.: 22.

one man cannot determine such a question, and asks that Marta's body be given to him. Thinking that the man plans to use Marta's remains for scientific purposes, Volt's father is outraged and disappointed by the reaction. He begins to feel as though the world has in fact changed beyond his recognition. The Earthman replies to Volt's father, "everyone has the right to life. Therefore, first it is necessary to attempt to return to her what she has lost."[177] In space even death, a concept that intimately informs the human sense of time becomes mutable. During the journey, the passage of time has rendered the finality of biology obsolete, and the relationship between time and space becomes a metaphor for progress in every sphere of life: social, cultural, political, and scientific.

The theme of space and time is also prevalent in the stories "Na kryl'iakh vremeni" and "Golos iz t'my." In the former, the Komsomol crew is able to journey 300 years into the past to discover the student working on geometry problems late into the night. In the latter, the crew is returning to Earth after a long journey through space. As they get closer to home, crewmember Eisenberg, an astrophysicist, begins to contemplate his age. He is not quite 80 years old, but the journey has prematurely aged him. More than the other crewmembers he is eager to return to Earth. There the aging process, which has begun to take hold, can be stopped with modern science.

The 1960 story "Skazka o golubom kamne" [178] ("A Tale About a Pale Blue Stone") is primarily a morality tale about honesty, but it contains a strong space and time component, as well. At the beginning of the story it is revealed that plans exist to send a twelve-year-old boy into space for 138 years. In Granite City (*Granitnyi gorod*) the authorities have found the ideal candidate, Gelii Timokhin.[179] The narrator of the

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[177] Ibid.: 21.
[178] P. Arkhipov, "Skazka o golubom kamne," *Koster* (January, 1960).
[179] *Gelii* is the Russian word for helium. Like Volt in "Vozvrashchenie," Gelii is made to embody science and progress in every aspect, including his name. This is a tradition that dates from the revolutionary period. For more on the importance of first names in the early Soviet period see B.I. Kolonitskii,

story, Gelii's neighbor Vas'ka Volchkov, is jealous of Gelii and feels that he would have been a more suitable candidate for the trip. As Vas'ka is walking along the street a car approaches and the driver asks Vas'ka if he is Gelii. Vas'ka knows that he and Gelii bear enough resemblance that he can pass for his friend, and he gets in the car. The officials in the car inform Vas'ka that the trip has been moved forward, and that he will be launching in just one hour. As Vas'ka takes off aboard the rocket, he is paralyzed with guilt for his transgression, but hopes that the rocket will not be called back to Earth. He believes that it is wrong to lie, but worse to be caught as a liar and imposter.

138 years pass and Vas'ka returns to Earth. As he prepares to depart from the rocket, he is told, "The world is certainly different. Here, behind this door, is everything about which people dreamed. Enter and you will see life under communism."[180] Upon Vas'ka's return he discovers that the Soviet Union is the only country in the world and communism has triumphed across the globe. However, before allowing him to exit the rocket, the man who meets Vas'ka insists that he listen to a story. It begins in the style of a Russian folk tale, "Когда-то давно жил-был мальчишка..."[181] (Once upon a time long ago, there was a young boy...), and tells of a boy who was dishonest and conniving in pursuing his own selfish interest. As Vas'ka listens to the story of his childhood, he is taken on a tour and shown the triumphs of communism. He is shown a construction site where engineers are using an artificial earthquake to change the direction of a river, and an impressive dam that has taken workers and engineers only one hour to build. Gelii, still a healthy man after 138 years, is in charge of this construction site, and his eyes fill with pride as he displays his accomplishments to Vas'ka. Gelii looks warmly at

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"'Revolutionary Names': Russian Personal Names and Political Consciousness in the 1920s and 1930s.," *Revolutionary Russia* 6 (December, 1993). Kolonitskii points out that in the 1920s and 1930s, first names such as Industrii, Metallina, Technika, Traktor, Elektrina, Energii, and many more reflected the Soviet cult of technocracy, a cult that enjoyed newfound prominence as a result of Soviet successes in space.

[180] Arkhipov, "Skazka o golubom kamne," 6.

[181] Ibid.: 8.

his boyhood friend, but in a way that suggests that Vas'ka does not belong. He had not helped to create this new world, and a sense of grief floods Vaska's heart as he thinks about what he has done. Vas'ka demands to be returned to space, but Gelii has another plan. He presses a button, picks up a "rocket of time" (*raketu vremeni*) with the aid of a crane-like machine, and places it on the launch pad. Then he hands Vas'ka a package containing a pale-blue stone, and tells him that he will be home – back to his childhood – in ten minutes. Gelii instructs him to watch how his comrades live and to learn from their example. Vas'ka returns to his past and begins to take note of the camaraderie and dedication shown by the boys in his neighborhood. The story ends as young Vas'ka and Gelii sit in the branches of a tree staring towards the heavens, scouring the sky for the recently launched *Sputnik*. Vas'ka wonders to himself, then asks Gelii aloud, "What is it like to be a suitable (*podkhodiashchii*) person?" In this story space offers a means by which the transgressing character, Vas'ka, is offered a second chance, a rebirth, and an opportunity to correct the faults that have prevented him from becoming a New Soviet Man. Neither time nor space are restrictive forces for the characters, and they are able to cross these thresholds in both directions to learn, teach, and alter their course in accordance with the Soviet idea of a child's development.

The intertwined concepts of time and space are of critical import in the history of Russian and the Soviet Union. According to official ideology, both Lenin and Engels theorized about the interrelatedness of the two concepts, and on the importance of understanding their relationship.[182] *Komsomol'skaya Pravda* suggested, "Both concepts involve definite physical meaning...Though we know less about the physical nature of time than about the physical nature of space, this does not imply that such will always be the case...in principle it is possible to master time's energy, to harness its flow for

[182] V. Lvov, "The Revolution in Physics Continues," *Current Digest of the Soviet Press* XI (1959): 22, 23. *Literaturnaya Gazeta, Sept. 24, p. 2.*

work and to make it serve man."[183] Using the concepts of time and space, Vladimir Paperny has argued that the early history of the Soviet Union, defined as the Lenin and Stalin eras, can be divided into two distinct epochs, or cultures: Culture One during the Lenin era, and Culture Two during the Stalin era. In Paperny's formulation, the two cultures of the Soviet Union represent quantitatively different perspectives on the past, present, and future, and consequently, time and space. According to Paperny, Culture One of the Lenin era was "oriented toward the future...Culture One broke off its ties to the past and denied the legacy of that past...Culture One generated itself anew, as if in a vacuum."[184] Culture One sought only to forge headlong into the future: "Thus Culture One wanted to burn its limbs, wash memory form its soul, kill its old, and eat its children – all this in an attempt to free itself from the ballast that was interfering with its surge into the future."[185] In spatial terms, Culture One is horizontal, moving outward from the center into the periphery, away from the old and stagnant, and towards the new and creative.

Conversely, Culture Two, the dominant force during the Stalin era, was dominated spatially by the vertical, which "is characterized by the transfer of values to the center. Society ossifies and crystallizes."[186] Within Culture Two, "the gradually emerging hierarchy of people was grafted to the gradually emerging hierarchy of space."[187] In the broadest sense, the end of Culture One and the emergence of Culture Two "appeared, above all, in the increased significance of the state's borders, that is, in the process of verticalization: Anything inside is now significantly more valuable than anything outside. On the national scale this quality showed up in the setting apart of the

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[183] D. Bilenkin, "The Secret of Time," *Current Digest of the Soviet Press* XI (1959): 28, 29. *Komsomol'skaya Pravda, Sept. 4, p. 4.*
[184] Paperny, *Architecture in the Age of Stalin: Culture Two*. 13.
[185] Ibid. 15.
[186] Ibid. xxiv.
[187] Ibid. 78.

central republic, Russia, in comparison with all others as in the marking off of this republic's center after it had taken on the function of the center of the world."[188]

Though Paperny notes that his categorization of Russian history and culture in this strictly binary fashion is necessarily imperfect, his conceptual framework is useful in analyzing the cultural content of a particular regime. Paperny writes relatively little about the Khrushchev era, though he does note that in his estimation Khrushchev represented a clear return to Culture One. For Paperny, the primary symbolic act in this regard was the abandonment of the Palace of Soviets. He writes:

> The fullest embodiment of the verticality of Culture Two was the Palace of the Soviets building which, although it was not built before the culture had run its course (and, as we shall see later, it could not have been built before the end), nevertheless was continuously being designed and constructed. The disintegration of verticality can be seen in the way that the tallest building in the world, the highest point of the highest perfection, in the 1960s was turned into a pit of the swimming pool.[189]

In *Beyond the Limits: The Concept of Space in Russian History and Culture*, Sergei Medvedev makes a similar case for the spatial culture of the Khrushchev era, pointing specifically to the horizontal nature of the "millions going to the virgin lands of Kazakhstan, or the Komsomol construction sites and joining in the subculture of mass tourism."[190]

For the purposes of this study, the use of spatial metaphors and symbols is helpful for understanding the nature of the regime that was creating the texts and images consumed by children. Certainly, the space program of the Khrushchev era was rife with references to Culture One. The idea of space travel itself is imbued with the horizontal. Science and technology constitute progress both in a metaphorical and literal sense, and they undermine hierarchy and tradition wherever they take root. Like the Virgin Lands program cited by Medvedev, space exploration represented a literal

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[188] Ibid. 79.
[189] Ibid. 64.
[190] Jeremy Smith, ed., *Beyond the Limits: The Concept of Space in Russian History and Culture*, (Helsinki, 1999). 32.

movement away from the center, toward the longstanding cultural dream of colonizing the extreme periphery, and toward the horizontal expansion of the Soviet idea. In several of the stories cited above the travelers return to Earth to find that communism has been built. In space, time actually accelerates, the day-to-day rigor of "building" communism is not applicable to the explorer-heroes, and by virtue of their journey they are welcomed back into a fully formed socialist society.

The vestiges of Culture One are also present in the relationship between education and technology during the Khrushchev era. As was noted in the third chapter, the attempted return to polytechnical education drew heavily on the pedagogical theory of Culture One and the ideas of Lunacharskii, Krupskaya, and Lenin. Khrushchev's attempt to undermine the increasingly entrenched white-collar class by subjecting all children to the same polytechnical requirements also echoed Culture One in its struggle for egalitarianism and its hatred of stasis. The poem "Pervoputok" ("The Trip Across The Snow"), printed in the February 1958 issue of *Koster*, neatly encapsulates the horizontal orientation of the Khrushchev era. Using a journey across freshly fallen show as a metaphor for travel across the heavens, it asserts,

> But here there is no stopping.
> Where is the limit?
> There is no limit![191]

At the same time, however, the remnants of Culture Two inherent in the Soviet space program are too strong to ignore. In keeping with Paperny's formulation of verticality as a metaphor for hierarchy and power, the noted philosopher of space Henri Lefebvre has argued that,

> the arrogant verticality of skyscrapers, and especially of public and state buildings, introduces a phallic or more precisely a phallocratic element into the visual realm: the purpose of this display, of this need to impress, is to convey an impression of authority

[191] C. Pogorelovskii, "Pervoputok," *Koster* (February, 1958).

> to each spectator. Verticality and great height have ever been the spatial expression of potentially violent power.[192]

Culture Two embodied this idea of vertical power precisely. The Palace of Soviets, mentioned above, was designed to be the largest building in the world and the symbolic and actual seat of Soviet power, and its construction spanned the entirety of Culture Two's existence. Further, as Paperny points out, "the seven skyscrapers - built after the war, when the 'struggle for peace' was at its peak - seven buildings with different functions (university, ministry, and apartment building), joined in still one more general function: In their spires, as every Muscovite knew, were air-defense radar systems. These were bases, not for figures of leaders, like the Palace of the Soviets, but for the all-seeing eye of defense."[193] In these buildings, the *symbolism* of verticality as power and authority became *actual* power and authority.

As was argued in the first chapter of this paper, the space program was necessarily an outgrowth of pre-Khrushchevian politics and culture. Unsurprisingly, the components which brought it to fruition were as often as not Stalinist in nature. In this sense, the drive to 'storm the cosmos' is symbolically and actually the ultimate manifestation of verticality. *Sputnik* represented pure height to an extent previously unimaginable, and though the Culture One idea of progress was critical to its eventual launch, the Culture Two idea of verticality was the necessary ingredient in turning Soviet eyes skyward.

That *Sputnik* represented the apex of verticality – and therefore authority and power – is made even more apparent by the treatment it received among Soviet scholars on international relations and law. Immediately following *Sputnik*'s launch, questions of international air space began to attract attention within the Soviet Union as well as in

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[192] Henri Lefebvre, *The Production of Space*, Donald Nicholson-Smith trans., (Oxford, 1991). 98.
[193] Paperny, *Architecture in the Age of Stalin: Culture Two*. 250.

the West. The question arose as to whether or not an orbiting satellite violated the sovereignty of a nation's air space. Soviet theorists answered emphatically that it did not. In their initial formulation, *Sputnik* was itself not moving. Rather, the satellite was a stationary object under which the Earth rotated. The picture which emerges from these initial ideas regarding space is one in which *Sputnik* is a fixed object, dwarfing conventional earthbound structures in height, and therefore immune from laws that governed the "vertical sovereignty" of conventional air space.[194] In 1958 F. H. Kovalev stated the Soviet position on the issue of orbiting satellites following the launch of *Sputnik*:

> As a consequence of the daily and annual motion of our planet, the imaginary cone formed by drawing a straight line from the center of the Earth at a tangent to the border of the given state would envelop different areas of space at different times. Recognition of the claim of the states to the entire outer space, contained within this cone would signify that the Sun, the Moon, and the 'Milky Way' would be regarded as being within range of sovereignty of one country today and of another tomorrow. Moreover, the spaceship launched from the territory of any country into outer space, even in a strictly vertical direction to the surface of the Earth, would be bound to appear quite soon above the territory of another state.[195]

Taking the Stalinist idea of all-seeing skyscrapers to its logical conclusion, the space program threatened to extend the range of the state's vision to the cosmos. Khrushchevian bluster regarding the military capabilities of *Sputnik* clearly demonstrates the link to the seven skyscrapers Paperny cites as archetypical of Culture Two. In the wake of *Sputnik*'s launch, *International Affairs* (Moscow) claimed with an unmistakable air of hubris, "now we can only hope that the Soviet policy of strength does not celebrate its triumphs and that the West comes to realize that 'co-existence' is

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[194] See McDougall, ...*The Heavens and the Earth: A Political History of the Space Age*. 258. See also "Conquest of Outer Space and Some Problems of International Law," *International Affairs (Moscow)* (November, 1959), Y. Korovin, "On the Neutralization and Demilitarization of Outer Space," *International Affairs (Moscow)* (December, 1959).

[195] F.H. Kovalev and I. I. Chepov, "Iskusstvennye sputniki zemli i mezhdunarodnoe pravo," *Sovetskii ezhegodnik mezhdunarodhogo prava* (1958): 138 for the original in Russian, p. 148 for the English translation used above.

not the worst that can happen to it...Is this red star a sinister thing then, and a menace to the West? Naturally it is!"[196]

The multi-directional mutability of time, which appears in several of the stories cited above, provides further evidence of the lingering presence of Culture Two in the post-Stalin years. During the Khrushchev era, the horizontal drive forward also contained a significant element of the past. In its pure form, Culture One places an impenetrable wall between the present and the past. If thresholds are to be crossed, literally or metaphorically, the only direction is forward to the future. Children's stories of space, however, show that there is value in the past, and the threshold that separates it from the present may be crossed with the aid of science and technology, and specifically by the use of space. In these stories, space is a porthole through which travelers can surge forwards and backwards through time, finding value in both.

In "Kakim budet chelovek XXX veka?" ("What Will Man be Doing in the 30th Century?"), the author of "Vozvrashchenie"[197] answers questions ostensibly sent in by young *Koster* readers. The letter asks if someday students in the first class will be learning quantum mechanics and the theory of relativity, what possible value could the basic concepts of Archimedes have? Referencing the story "Vozvrashchenie," the letter continues, "Volt's father says that after thousands of years people will not be able to read or understand works or art, they will all become obsolete. I love history very much. I read *The Legends and Myths of Ancient Greece* and understood everything. My sister read *The Odyssey* and *The Iliad* and they are also thousands of years old."[198] The author replies that learning the foundations of math, science, and geography will always be important. He asserts that by understanding history, children will "better

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[196] Uexkull, "In The Skies - A Red Star," 130.
[197] The story "Vozvrashchenie" is discussed in more detail at the beginning of this section.
[198] A. Tomilin, "Kakim budet chelovek XXX veka?," *Koster* (April, 1962): 15.

understand the events, customs, actions, and character of [their] heroes...True art will never become obsolete. So long as there are people on Earth, they will always be excited and made happy by still life paintings, sculptures, literature, music, whether it was created in the fifth or the thirty-fifth century of the modern era."[199] The past is treated as a valuable source for understanding the present and as a heritage for the future, not something to be abandoned and constantly replaced.

The previous section has argued that, if viewed through Paperny's Culture One/Culture Two framework, the Khrushchev era is marked not by either in particular, but rather by tensions and contradictions between them. As a result, an uncomfortable, and maybe untenable situation was established. The state needed more laborers, but encouraged more engineers; attempted to foster collectivism, but could not escape the trappings of individualism; claimed space on behalf of peace and progress, but threatened to use it for war; believed passionately in science, but continued to allow pseudo-scientists such as Lysenko to flourish. In short, the regime sought a return to Lenin, but could not escape from the social and political legacy of Stalin. In the literature for children reviewed above, the contradictory messages created by the state with respect to childhood, labor, and space are apparent.

The celebration of science as a heroic force and the scientist-cosmonaut as a true Soviet hero elucidates the regime's failure to offer ideological continuity to its children. In comparing the themes present in this literature with the labor-oriented, egalitarian goals of the educational reforms, it is apparent that the Khrushchev era lacked the kind of unified cultural directives that maintained Soviet society under Lenin and Stalin. Rather, Khrushchev was faced with a conflict between the competing legacies of Culture One and Culture Two. The regime's failure to create continuity between its

[199] Ibid.

needs and the messages it presented may have stemmed from its inability to rectify the two. In the Khrushchev era debate over what was best for Soviet children and what was best for the state, neither pedagogical theories nor political polemics could eliminate the pull of space and science. In the struggle between the political will of the regime and the cultural imagination of its young citizens, the latter, aided by support from influential interest groups, proved an insurmountable force.

This fact is further elucidated by *Risunki nashikh detei,*[200] a 1962 volume consisting of Soviet children's drawings grouped into two sections; 3-8 year olds, and 9-14 year olds. The volume is slim, containing only 62 drawings from the latter age group, and is therefore not a representative sample. Nevertheless, even such a small and officially curated collection can offer interesting insights. Focusing on the drawings of the older age group – who would have been within the targeted age range of *Koster* – the popularity of space becomes even clearer. Of the 62 drawings, 14 are space related. Only cityscapes rival space in popularity as subject matter with 14 submissions; no other subject approaches this number. Among these 14 drawings, however, the absence of Soviet insignia is particularly conspicuous. Of the fourteen, only five contain any Soviet symbology at all, while the remaining nine show nothing that would reveal their Soviet origins. It would be reasonable to assume that the editors of this volume would have preferred more Soviet symbology to less, especially in the space related drawings. It was only a year earlier after all, that Gagarin had completed the first manned space flight. Therefore, the absence of specifically Soviet imagery suggests that among the drawings from which the editors chose, very few space related drawings contained such symbols. If this is the case, than this volume explicitly demonstrates a corollary challenge to the regime's socializing efforts; it has been shown that, in spite of the

[200] *Risunki nashikh detei*, (Moscow, 1962).

regime's efforts children could not be dissuaded from their interest in space and science. More troubling for the regime, perhaps, was the fact that even as children internalized the images and stories of space, they separated the subject from the political content with which it was presented. Thus, science became and remained an immensely popular subject among children, but divorced from the socializing content, it was science for science's sake, not for the Soviet Union's sake. This would be consistent with the previously cited assertion that students "are enthralled at the prospects in science and research, and work with enthusiasm and devotion – enthusiasm, however, for science and research, not for politics and the doctrines of Marx and Lenin. The apolitical attitude is nowhere more apparent than among Russian students."[201] In light of the drawings contained in this volume, it appears that the regime was failing in its socializing effort at all levels.

[201] Mehnert and Rosenbaum, *The Anatomy of Soviet Man.* 132.

6. Conclusion

During the Khrushchev era the regime failed to fully socialize its children because the culture knew neither what it needed from them, nor how to get it. In spite of Khrushchev's attempts to redirect children's culture in the post-Stalin era by reforming education, the elite interest groups ("bureaucratic attitudes" in Khrushchevian parlance[202]) that were so central to Stalin's legitimacy successfully undermined his wishes. Well before Khrushchev's ouster in 1964 it was apparent that the state lacked the ability to halt increasing social stratification, prevent the entrenchment of a privileged white-collar class, or to convince young people of the value of manual and agricultural labor over higher (and specifically scientific) education.

This paper has discussed one manifestation of the state's failure in this regard by examining the images and texts about space that were presented to Soviet children. A massive rift existed between what the state believed it needed from its children and the messages it provided them through officially sponsored children's culture. Over the course of the Khrushchev era, this rift appears to have widened. From the early technical articles about space which appeared in the pages of *Koster* in 1957, official children's culture progressed to lengthy and detailed fictional accounts that portrayed heroic Soviet scientist-cosmonauts (and heroic Soviet science) as the means by which Communism could be built, and as the only anecdote to the sinister imperialism, warmongering, and economic exploitation that existed in the non-Communist world. As demonstrated by Koutaissoff's sociological survey about job preferences of school leavers in the 1960s[203], by the Khrushchev era the worker-cosmonaut/scientist/engineer

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[202] N. S. Khrushchev, "Report of the Central Committee of the Communist Party of the Soviet Union to the 22nd Party Congress - III," *Current Digest of the Soviet Press* XIII (1961): 9. *Pravda, Izvestia, Oct 18, 1961, pp. 2-11.*

[203] Koutaissoff, "Young People's Choice of Careers and Manpower Planning in the Soviet Union." This study was previously referenced in Chapter 3.

had become an irresistible cultural archetype for children. Further, members of the Soviet elite, anxious to spare their children a lifetime of factory or *kolkhoz* labor, reinforced this archetype by encouraging their children to pursue higher education and openly opposing Khrushchev's attempts at reforms.

Thus, Khrushchev's attempts at reform were successfully opposed and undermined both from within and without. From outside, Khrushchev faced significant, and ultimately insurmountable opposition from his own top scientists. Soviet elites, benefactors of Stalin-era social stratification, joined the chorus of discontent on behalf of their children and class. Within the regime, central directives regarding the images and texts presented to children reinforced the views espoused by the Soviet scientific and social elite; science was heroic, scientific work was superior (and therefore preferable) to manual or agricultural labor, and scientific education at institutes of higher learning was the way to better one's own life and the lives of other Soviet – and non-Soviet, for that matter – citizens. Widespread opposition and inconsistency in centrally directed ideology created an environment in which the reforms of 1958 were unlikely to succeed. Khrushchev's failure to accomplish his cultural and political goals meant that a new social contract was necessary under Brezhnev, and not surprisingly, it was directly related to labor. A popular Soviet maxim of the Brezhnev era summarized the plight of workers burdened with undesirable jobs as such: "We pretend to work, and they pretend to pay us."[204] The division between the state and its children outlined in this paper is one early manifestation of this labor conflict between the state and its citizens, a conflict which plagued all subsequent regimes until the collapse of the Soviet Union in 1991.

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[204] Christopher Read, *The Making and Breaking of the Soviet System*, (Basingstoke, 2001). 165.

Works Cited

Akim, Ia. "Pervym iz kosmosa zemliu uvidel kommunist." *Murzilka*, 9 (1961): 5.

"Ambassadors Walk Out: Protest at Speech by Mr. Khrushchev." *The Times*, 19 November 1956, 8.

Antryshin, A. "Na shturm mirovogo prostranstva." *Koster*, 9 (1957): 28-29.

———. "Zaatmosferstroi." *Koster*, 3 (1958): 36-38.

Arkhipov, P. "Skazka o golubom kamne." *Koster*, 1 (1960): 6-11.

Azrael, Jeremy R. "Soviet Union." In *Education and Political Development*, edited by James S. Coleman. Princeton: Princeton University Press, 1965.

Baker, David. *The History of Manned Space Flight*. London: New Cavendish Books, 1981.

Barkalov, A. "Changes are Necessary." *Current Digest of the Soviet Press* Vol. X, 34 (1958): 29-30. *Izvestia, Aug. 23, 1958, p. 2.*

Bauer, Raymond Augustine. *The New Man in Soviet Psychology*. Cambridge: Harvard University Press, 1952.

Belenev, N. "Get Closer to Life, to Production." *Current Digest of the Soviet Press* Vol. X, 38 (1958): 7-8. *Pravda, Sept. 24, 1958, p. 2.*

Bereday, George, ed. *The Changing Soviet School*. Boston: Houghton Mifflin, 1960.

Bereday, George, and Jaan Pennar. *The Politics of Soviet Education*. New York: Praeger, 1960.

Bilenkin, D. "The Secret of Time." *Current Digest of the Soviet Press* Vol. XI, 42 (1959): 28-30. *Komsomol'skaya Pravda, Sept. 4, p. 4.*

Bogdanov, A. "Engineer Menni: A Martian Stranded on Earth." In *Red Star: The First Bolshevik Utopia*, edited by Loren R. Graham, Charles Rougle and Richard Stites, 141-233. Bloomington, Ind: Indiana University Press, 1984.

———. "Red Star." In *Red Star: The First Bolshevik Utopia*, edited by Loren R. Graham, Charles Rougle and Richard Stites, 23-140. Bloomington, Ind: Indiana University Press, 1984.

Brooks, Jeffrey. *Thank You, Comrade Stalin! : Soviet Public Culture From Revolution to Cold War*. Princeton, N.J.: Princeton University Press, 2000.

Bulkeley, Rip. *The Sputniks Crisis and Early United States Space Policy: A Critique of the Historiography of Space*. Basingstoke: Macmillan, 1991.

Burchett, Wilfred G., and Anthony Purdy. *Cosmonaut Yuri Gagarin: First Man in Space*. London: A. Gibbs & Phillips, 1961.

Clark, Katerina. *The Soviet Novel: History as Ritual*. 3rd ed. Bloomington: Indiana University Press, 2000.

Clawson, Robert W. "Political Socialization of Children in the USSR." *Political Science Quarterly* Vol. 88, 4 (1973): 684-712.

Coles, Robert. *The Political Life of Children*. Boston: Atlantic Monthly Press, 1986.

"Conquest of Outer Space and Some Problems of International Law." *International Affairs (Moscow)*, 11 (1959): 88-96.

Counts, George S. *The Challenge of Soviet Education*. New York: McGraw-Hill, 1957.

Daniloff, Nicholas. *The Kremlin and the Cosmos*. New York: Knopf, 1972.

Dostoevsky, Fyodor. "The Dream of a Ridiculous Man." In *A Gentle Creature and Other Stories*, 107-128. Oxford: Oxford University Press, 1999.

Durgin, Frank A., Jr. "The Virgin Lands Programme 1954-1960." *Soviet Studies* Vol. 13, 3 (1962): 255-280.

Etkind, Alexander. "Psychological Culture." In *Russian Culture at the Crossroads*, edited by Dimitri N. Shalin, 99-126. Boulder: Westview Press, 1996.

Figes, Orlando. *Natasha's Dance: A Cultural History of Russia*. London: Allen Lane, The Penguin Press, 2002.

Glushko, Valentin Petrovich. *Development of Rocketry and Space Technology in the USSR*. Moscow: Novosti Press Pub. House, 1973.

Graham, Loren R. *The Ghost of the Executed Engineer: Technology and the Fall of the Soviet Union*. Cambridge, Mass ; London: Harvard University Press, 1993.

———. *Science and Philosophy in the Soviet Union*. London: Allen Lane, 1973.

———. *Science and the Soviet Social Order*. Cambridge: Harvard University Press, 1990.

———. *Science in Russia and the Soviet Union*. Cambridge: Cambridge University Press, 1993.

Grant, Nigel. *Soviet Education*. London: University of London, Ltd., 1964.

Grigor'ev, I. "Zablyzhdenie Val'tera Nigga." *Koster*, 3 (1961): 9-11.

Grigor'ev, I., and R. Iu. Danilova. "Put' k zvezdam." *Koster*, 5 (1959): 23-25.

Heppenheimer, T. A. *Countdown: A History of Space Flight*. New York; Chichester: John Wiley, 1997.

Holmes, Jay. *The Race for the Moon*. London: Gollancz, 1962.

Holton, Gerald. "Einstein and the Cultural Roots of Modern Science." In *Science in Culture*, edited by Peter Galison, Stephen R. Graubard and Everett Mendelsohn, 1-44. New Brunswick: Transaction Publishers, 2001.

Hosking, Geoffrey A. *Russia and the Russians : A History*. London: Allen Lane The Penguin Press, 2001.

Hunt, Peter. "Introduction: The World of Children's Literature Studies." In *Understanding Children's Literature*, edited by Peter Hunt, 1-14. London: Routledge, 1999.

———, ed. *Understanding Children's Literature*. London: Routledge, 1999.

Iakovlev, F. "Korabl'-Sputnik." *Koster*, 12 (1960): 12-15.

Ilyichov, I. "The Sputniks and International Relations." *International Affairs (Moscow)*, 3 (1958): 7-17.

Inkeles, Alex, and Raymond Augustine Bauer. *The Soviet Citizen: Daily Life in a Totalitarian Society*. Oxford: Oxford University Press, 1959.

Jensen, Claus. *Contest for the Heavens: The Road to the Challenger Disaster*. London: Harvill Press, 1996.

Joravsky, David. *The Lysenko Affair*. Cambridge, Mass: Harvard University Press, 1970.

Josephson, Paul R. *Physics and Politics in Revolutionary Russia*. Berkeley ; Oxford: University of California Press, 1991.

Karcz, Jerzy F. "The New Soviet Agricultural Programme." *Soviet Studies* Vol. 17, 2 (1965): 129-161.

Khlebnikov, A. "Lunnyi siurpriz." *Koster*, 8 (1963): 53-57.

Khrushchev, N. S. "On Control Figures For Development of the USSR National Economy in 1959-1965." *Current Digest of the Soviet Press* Vol. XI, 2, 3, 4, 5 (1958). *Pravda, Jan. 28, pp. 2-10.*

———. "On Strengthening Ties Between School and Life and on Further Developing System of Public Education in the Country." *Current Digest of the Soviet Press* Vol. X, 38 (1958): 3-7. *Pravda, Izvestia, Sept. 21, 1958, pp. 2-3.*

———. "On Strengthening Ties Between School and Life and on Further Developing the Country's System of Public Education." *Current Digest of the Soviet Press* Vol. X, 46 (1958): 3-11, 15. *Pravda, Izvestia, Nov. 16, 1958, pp. 1-3.*

———. "On the Program of the Communist Party of the Soviet Union - II." *Current Digest of the Soviet Press* Vol. XII, 46 (1961). *Pravda and Izvestia, Oct. 19, pp. 1-10.*

———. "Report of the Central Committee of the Communist Party of the Soviet Union to the 20th Party Congress - I." *Current Digest of the Soviet Press* Vol. VIII, 4 (1956): 3-15, 29. *Pravda, Feb. 15, 1956, pp. 1-11.*

———. "Report of the Central Committee of the Communist Party of the Soviet Union to the 22nd Party Congress - III." *Current Digest of the Soviet Press* Vol. XIII, 42 (1961): 3-12. *Pravda, Izvestia, Oct 18, 1961, pp. 2-11.*

———. "Train Active and Conscious Builders of Communist Society." *Current Digest of the Soviet Press* Vol. X, 17 (1958): 17-19, 35. *Pravda, April 19, 1958, pp. 1-3.*

Khushinskii, M.S. "Education in Scientific Atheism in Physics Lessons." *Education in the USSR: A Collection of Readings From Soviet Journals* Vol. 2 (1961): 112-113. *Fizika v Shkole, 1961, No. 1.*

Kislenko, B. "Obyknovennyi." *Koster*, June (1961): 3-8.

Kline, George L. "Soviet Education." 192. London: Routledge and Kegan Paul Ltd., 1957.

Knowles, Murray, and Kirsten Malmkjaer. *Language and Control in Children's Literature*. London: Routledge, 1996.

Kolakowski, Leszek. "The Myth of Human Self-Identity: Unity of Civil and Political Society in Socialist Thought." In *The Socialist Idea: A Reappraisal*, edited by Leszek Kolakowski and Stuart Hampshire. London: Quartet Books, 1977.

Kolonitskii, B.I. "'Revolutionary Names': Russian Personal Names and Political Consciousness in the 1920s and 1930s." *Revolutionary Russia* Vol. 6, 2 (1993): 210-228.

Korovin, Y. "On the Neutralization and Demilitarization of Outer Space." *International Affairs (Moscow)*, 12 (1959): 82-83.

Koutaissoff, Elisabeth. "Young People's Choice of Careers and Manpower Planning in the Soviet Union." In *Education and the Mass Media in the Soviet Union and Eastern Europe*, edited by Bohdan Harasymiw. New York: Praeger, 1976.

Kovalev, F.H., and I. I. Chepov. "Iskusstvennye sputniki zemli i mezhdunarodnoe pravo." *Sovetskii ezhegodnik mezhdunarodhogo prava* (1958): 128-145.

Kustova, H. *Koster*, 5 (1961): 1.

Lapidus, Robert. "Sputnik and Its Repercussions: A Historical Catalyst." *Aerospace Historian* Vol. 17 (1970): 88-93.

Launius, Roger D., and Howard E. McCurdy. *Spaceflight and the Myth of Presidential Leadership*. Urbana: University of Illinois Press, 1997.

Lefebvre, Henri. *The Production of Space*. Translated by Donald Nicholson-Smith. Oxford: Blackwell, 1991.

Liapunov, B. "Lunnyi reis." *Koster*, 11 (1958).

Liubitskaia, V. "K lune." *Koster*, 1 (1960).

Lvov, V. "The Revolution in Physics Continues." *Current Digest of the Soviet Press* Vol. XI, 40 (1959): 22-24. *Literaturnaya Gazeta, Sept. 24, p. 2.*

Lysenko, T. D. "Darwinism Lives and is Developing." *Current Digest of the Soviet Press* Vol. 11, 47 (1959): 31-32. *Izvestia, November 22, 1959, p.3.*

Lyubimov, Boris. "The Bering Strait Dam." *Current Digest of the Soviet Press* Vol. XI, 47 (1959): 32-33. *Literaturnaya Gazeta, Oct. 24, 1959, pp. 1-2.*

Lyustiberg, Villen. *Man and Space: The Soviet View*. [S.l.]: Novosti, 1981.

"Malen'kii grazhdanii strany sovetov." *Murzilka*, 9 (1961): 2-4.

Marx, Karl, and Friedrich Engels. *Karl Marx, Frederick Engels: Collected Works*. London: Lawrence & Wishart, 1975.

Marx, Karl, and Friedrich. Engels. *The Communist Manifesto*. Harmondsworth: Penguin, 1967.

Matthews, Mervyn. *Education In The Soviet Union*. London: George Allen & Unwin, 1982.

McCurdy, Howard E. *Space and the American Imagination*. Washington, D.C. ; London: Smithsonian Institution Press, 1997.

McDougall, Walter A. ...*The Heavens and the Earth: A Political History of the Space Age*. New York: Basic Books, 1985.

———. "Technocracy and Statecraft in the Space Age--Toward the History of a Saltation." *The American Historical Review* Vol. 87, 4 (1982): 1010-1040.

Medlin, William K. *Soviet Education Programs; Foundations, Curriculums, Teacher Preparation.* Washington, D.C.: U.S. Dept. of Health, Education, and Welfare, 1960.

Medvedev, Zhores A. *Soviet Science.* Oxford: Oxford University Press, 1979.

Mehnert, Klaus, and M. Rosenbaum. *The Anatomy of Soviet Man.* Revised ed. London, 1961.

Mendelsohn, Everett. "The Social Construction of Scientific Knowledge." In *The Social Production of Scientific Knowledge*, edited by Everett Mendelsohn, Peter Weingart and Richard Whitley, vi, 294. Boston: D. Reidel Publishing Company, 1977.

Metter, I. "Kosmicheskie luchi." *Koster*, 3 (1957): 32-34.

Mills, Richard M. "The Formation of the Virgin Lands Policy." *Slavic Review* Vol. 29, 1 (1970): 58-69.

Muckle, James Y. *Education in Russia Past and Present: An Introductory Study Guide and Select Bibliography.* Nottingham: Bramcote Press, 1993.

"Na Kryl'iakh Vremeni." *Koster*, 10 (1958): 46-48.

Nowotny, Helga, Peter Scott, and Michael Gibbons. *Re-Thinking Science: Knowledge and the Public in an Age of Uncertainty.* Oxford: Blackwell Publishers, 2001.

"Nu, poekhali." *Koster*, 6 (1961): 8.

O'Dell, Felicity Ann. *Socialisation Through Children's Literature: The Soviet Example.* Cambridge: Cambridge University Press, 1978.

"On the Eve of Space Flight." *Current Digest of the Soviet Press* Vol. VIII, 1 (1956): 24-25. *Komsomol'skaya Pravda, Jan. 1, 1956, p. 2.*

Panov, D. "A Comparison With U.S.A. in Science and Education." *Current Digest of the Soviet Press* Vol. X, 8 (1959): 3-6, 34. *Kommunist, No. 1, pp. 11-25.*

Paperny, Vladimir. *Architecture in the Age of Stalin: Culture Two.* Translated by John Hill and Roann Barris. Cambridge: Cambridge University Press, 2002.

Pennar, Jaan, Ivan Ivanovich Bakalo, and George Z. F. Bereday. *Modernization and Diversity in Soviet Education : With Special Reference to Nationality Groups.* New York: Praeger Publishers, 1971.

Podocinovskaia, L. "Golos iz t'my." *Koster*, 4 (1961): 49-58.

Pogorelovskii, C. "Pervoputok." *Koster*, 2 (1958).

———. *Revolutionary Dreams: Utopian Vision and Experimental Life in the Russian Revolution.* Oxford: Oxford University Press, 1989.

Strezikozin, V. "Why Does Ivan Know More Than Johnny?" *Education in the USSR: A Collection of Readings From Soviet Journals* Vol. 2 (1963): 207-210. *Uchitelskaia Gazeta, February 9 and 12, 1963.*

Tomilin, A. "Kakim budet chelovek XXX veka?" *Koster*, 4 (1962): 14-15.

———. "Udarnaia volna sveta." *Koster*, 2 (1959): 36-39.

———. "Vozvrashchenie." *Koster*, 11 (1961): 10-22.

Trace, Arthur S. *What Ivan Knows That Johnny Doesn't.* New York: Random House, 1961.

Tsiolkovsky, K. *Beyond the Planet Earth.* Oxford ; New York: Pergamon Press, 1960.

Tucker, Robert C. "Stalin and the Uses of Psychology." *World Politics* Vol. 8, 4 (1956): 455-483.

Twist, Clint. *Gagarin and Armstrong: The First Steps in Space.* London: Evans Brothers, 1995.

Uexkull, Gosta. "In The Skies - A Red Star." *International Affairs (Moscow)*, 11 (1957): 129-132.

"Untitled." *Koster*, 5 (1961): 1.

Volin, Lazar. "Soviet Agriculture under Khrushchev." *The American Economic Review* Vol. 49, 2, Papers and Proceedings of the Seventy-first Annual Meeting of the American Economic Association (1959): 15-32.

Von Bencke, Matthew J. *The Politics of Space: A History of U.S.-Soviet/Russian Competition and Cooperation in Space.* Boulder, Colo.: Westview, 1997.

Von Geldern, James, and Richard Stites. *Mass Culture in Soviet Russia: Tales, Poems, Songs, Movies, Plays, and Folklore, 1917-1953.* Bloomington: Indiana University Press, 1995.

Vonsovskii, S. "The Atom Knocks at the Classroom Door." *Education in the USSR: A Collection of Readings From Soviet Journals* Vol. 2 (1962): 110-111. *Uchitel'skaia Gazeta, May 22, 1962.*

Vorobyev, B.N. "Konstantin Tsiolkovsky and his Work on Interplanetary Travel." In *Beyond the Planet Earth*, 1-16. Oxford: Pergamon Press, 1960.

Whitley, Richard, ed. *Social Processes of Scientific Development.* Boston: Routledge & Kegan Paul, 1974.

Yuri Gagarin: The First Cosmonaut. Moscow: Novosti Press Agency Pub. House, 1977.

Zelenko, G. "Prepare Young People for Life and Labor." *Current Digest of the Soviet Press* Vol. X, 34 (1958): 30. *Pravda, Aug. 26, 1958, p. 2.*

Zhyravleva, V. "Shestoi ekipazh." *Koster*, 7 (1959): 26-31.

Ziegler, Charles E. "Soviet Images of the Environment." *British Journal of Political Science* Vol. 15, 3 (1985): 365-380.