

# REMEMBERING the **SPACE AGE**

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Office of External Relations  
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Washington, DC

2008

NASA SP-2008-4703

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## CHAPTER 12

# CREATING MEMORIES: MYTH, IDENTITY, AND CULTURE IN THE RUSSIAN SPACE AGE<sup>1</sup>

Slava Gerovitch

The Nobel Prize laureate Orhan Pamuk's novel, *The White Castle*, is a subtle reflection on the power of memory. Living in 17th-century Istanbul, two main protagonists, an Italian scholar and a Turkish noble, share their most intimate memories and gradually adopt each other's memories as their own. Their distinct identities begin to blur until they (and the reader) can no longer recognize who is who. Eventually they switch their original identities as the power of memory overwhelms them. The Turk becomes a scholar and leaves for Italy, while the Italian abandons science to enjoy luxurious life at the sultan's court.<sup>2</sup> Our memories determine who we are, and manipulating these memories affects the very core of our identity.

Key events in the Space Age are especially memorable—this is why it is called “the Space Age” in the first place. The triumphs of Gagarin's first flight and Armstrong's first step, and the tragedies of Apollo 1, Gagarin's death, *Challenger*, and *Columbia* are among recent generations' most vivid and emotional memories. But what do we really remember when we remember the Space Age? In 1986–1988, the cognitive psychologist Ulric Neisser conducted a study of 44 student subjects, who were asked how they first heard the news of the *Challenger* disaster. The first round of questioning took place the next morning after the event, the second round—with the same participants—two and a half years later. It turned out none of the later accounts fully coincided with the original report, and over a third were, as Neisser put it, “wildly inaccurate.” Moreover, even when confronted with their own earlier written reports, the subjects were convinced that the later memory was true. The original memories quite simply disappeared from their minds.<sup>3</sup>

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1. The author wishes to thank Asif Siddiqi for his insightful comments on an early draft of this article. Research for this article has been supported by Fellowship in Aerospace History from the American Historical Association.
  2. Orhan Pamuk, *The White Castle*, trans. Victoria Holbrook (New York, NY: Braziller, 1991).
  3. Ulric Neisser and Nicole Harsh, “Phantom Flashbulbs: False Recollections of Hearing the News about *Challenger*,” in *Affect and Accuracy in Recall: Studies of “Flashbulb” Memories*, ed. Eugene Winograd and Ulric Neisser (New York, NY: Cambridge University Press, 1992), pp. 9–31.

Recent research in cognitive, social, and clinical psychology and in cognitive neuroscience indicates that our memory is a much more dynamic and malleable process than previously thought. Our memories are not stored in a fixed form; we do not pull them out of a permanent storage and then put them back intact. According to the constructivist approach to memory, every act of recollection is re-creation, reconstruction of a memory.<sup>4</sup> Every time we “recall” a memory, we relive the event that caused it, we emotionally relate to it, we remake that memory, and we store a new version, totally overwriting the old one. At the moment of recollection, memory becomes unstable, and it can be modified and even “erased,” or a false memory can be planted.<sup>5</sup> Recalling something is essentially similar to making a new, original memory. In the language of neuroscience, “reconsolidation . . . is qualitatively strikingly similar to consolidation”;<sup>6</sup> in the psychology parlance, “recollection is a kind of perception, . . . and every context will alter the nature of what is recalled.”<sup>7</sup> As a result, we do not really remember the original event; we remember only our last recollection of that event. The more we remember and the more often we recall something, the more we rebuild and change that memory and the farther we get from the original event.

According to the school of “narrative psychology,” linking individual memories into a coherent narrative, which supplies meaning to past events, plays an essential role in the formation of one’s self.<sup>8</sup> As the neurologist Oliver Sacks has put it, “We have, each of us, a life story, an inner narrative—whose continuity, whose sense, *is* our lives. It might be said that each of us constructs and lives a ‘narrative,’ and that this narrative *is* us, our identities.”<sup>9</sup> When our

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4. The idea of memory as a dynamic and constructive process goes back to Frederic C. Bartlett’s book *Remembering* (Cambridge, UK: Cambridge University Press, 1932). For overviews of recent studies, see Daniel L. Schacter et al., “The Cognitive Neuroscience of Constructive Memory,” *Annual Review of Psychology* 49 (1998): 289–318; Daniel L. Schacter, “Memory Distortion: History and Current Status,” in *Memory Distortion: How Minds, Brains, and Societies Reconstruct the Past*, ed. Daniel L. Schacter (Cambridge, MA: Harvard University Press, 1995), pp. 1–43; and Daniel Schacter, *Searching for Memory: The Brain, the Mind, and the Past* (New York, NY: Basic Books, 1996).
  5. On experiments with “erasing” fear conditioning in rats, see Karim Nader, Glenn E. Schafe, and Joseph E. Le Doux, “Fear memories require protein synthesis in the amygdala for reconsolidation after retrieval,” *Nature* 406 (August 17, 2000): 722–726. On experiments showing the possibility of implanting false memories in humans, see Elizabeth F. Loftus and Katherine Ketcham, *The Myth of Repressed Memory* (New York, NY: St. Martin’s Press, 1994).
  6. Karim Nader, “Memory Traces Unbound,” *Trends in Neurosciences* 26:2 (February 2003): 70.
  7. Israel Rosenfeld, *The Invention of Memory: A New View of the Brain* (New York, NY: Basic Books, 1988), p. 89 (emphasis added).
  8. See Jerome S. Bruner, *Acts of Meaning* (Cambridge, MA: Harvard University Press, 1990), chap. 4, “Autobiography and Self”; and Ulric Neisser and Robyn Fivush, eds., *The Remembering Self: Construction and Accuracy in the Self-Narrative* (Cambridge, UK: Cambridge University Press, 1994).
  9. Oliver Sacks, *The Man Who Mistook His Wife For a Hat and Other Clinical Tales* (New York, NY: Summit Books, 1985), p. 110.

present self constructs and distorts our memories of the past, the very fallibility of these memories serves a purpose—to establish a continuity between our present and past selves. The literary scholar Paul Eakin has argued that memory is “not only literally essential to the constitution of identity, but also crucial in the sense that it is constantly revising and editing the remembered past to square with the needs and requirements of the self we have become in any present.”<sup>10</sup>

We are what we remember, and this is equally true for individuals and societies.<sup>11</sup> By focusing on the notions of “collective memory” and “social memory,” cultural history draws on the metaphor of society as a remembering subject, which constructs its identity based on collective remembrance and can go through a psychological “trauma” profoundly distorting collective memories.<sup>12</sup> Collective memory—culturally sanctioned and publicly shared representations of the past—shapes social identities and provides narratives through which individuals publicly describe their selves, remember the past, and interpret the present.<sup>13</sup>

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10. Paul John Eakin, “Autobiography, Identity, and the Fictions of Memory,” in *Memory, Brain, and Belief*, ed. Daniel L. Schacter and Elaine Scarry (Cambridge, MA: Harvard University Press, 2000), pp. 293–294. On the “false memory syndrome” as an adaptive mechanism, see Daniel L. Schacter, *The Seven Sins of Memory: How the Mind Forgets and Remembers* (New York, NY: Houghton Mifflin, 2001).
  11. For recent attempts to bring together specialists from cognitive psychology, psychopathology, psychiatry, neurobiology, social psychology, sociology, and history to discuss the phenomenon of memory from different disciplinary perspectives, see Thomas Butler, ed., *Memory: History, Culture and the Mind* (Oxford, UK: Blackwell, 1989); Schacter, ed., *Memory Distortion*; Schacter and Scarry, eds., *Memory, Brain, and Belief*; and the newly established academic journal *Memory Studies*.
  12. For recent general works on collective memory in social and cultural history, see Alon Confino and Peter Fritzsche, eds., *The Work of Memory: New Directions in the Study of German Society and Culture* (Urbana, IL: University of Illinois Press, 2002); Paul Connerton, *How Societies Remember* (Cambridge, UK: Cambridge University Press, 1989); John R. Gillis, ed., *Commemorations: The Politics of National Identity* (Princeton, NJ: Princeton University Press, 1994); Pierre Nora, ed., *Realms of Memory: Rethinking the French Past*, trans. from the French, gen. ed. Lawrence D. Kritzman, 3 vols. (New York, NY: Columbia University Press, 1996–1998); Pierre Nora, ed., *Rethinking France: Les Lieux de mémoire*, trans. from the French, gen. ed. David P. Jordan, 2 vols. (Chicago, IL: University of Chicago Press, 2001–2006); Jeffrey Olick, *The Politics of Regret: On Collective Memory and Historical Responsibility* (New York, NY: Routledge, 2007); Jeffrey Olick, ed., *States of Memory: Continuities, Conflicts, and Transformations in National Retrospection* (Durham, NC: Duke University Press, 2003); and Eviatar Zerubavel, *Time Maps: Collective Memory and the Social Shape of the Past* (Chicago, IL: University of Chicago Press, 2003). Among the recent works that examine “traumatic” events in American historical memory are Edward Tabor Linenthal and Tom Engelhardt, eds., *History Wars: The Enola Gay and Other Battles for the American Past* (New York, NY: Metropolitan Books, 1996); Edward Tabor Linenthal, *The Unfinished Bombing: Oklahoma City in American Memory* (Oxford, UK: Oxford University Press, 2001); and Emily S. Rosenberg, *A Date Which Will Live: Pearl Harbor in American Memory* (Durham, NC: Duke University Press, 2003).
  13. More precisely, “collective memory” in this article is understood as both a set of cultural norms that regulates practices of remembrance and a body of texts and other types of symbolic

When the constructivist model of individual memory is applied to cultural history, the implications are profound. Like individual memory, collective memory is continuously recreated, supplanting original memories with later versions. Cultural memory thus becomes self-referential: it feeds on itself and recollects its own recollections. The more a particular society or group remembers an event, the more intensely collective memory is at work, the more we mythologize and the more we forget. Remembering and mythologizing are the same thing. Just like false private memories reinforce the continuity of the individual self, cultural myths shore up national or group identity.

Taking seriously the view that culture is the myths we live by, historians have focused on the cultural functions of collective myths—to structure and pass on historical memory, to create the basis for a dominant “master narrative,” and to shape social identities. In this context, whether the myth is literally true or not is not particularly significant. What is important is the political and cultural force of collective myths—ethnic, religious, ideological—their ability to act, to create a public appeal, to tell a story to identify with and an ideal to imitate. Most recent studies have shifted the focus toward the historical origins—the genealogy—of myths, their deliberate construction by political elites, and their repressive power to marginalize alternative stories and identities.<sup>14</sup>

The institutionalization of memory by nation states—the establishment of national archives, the public celebrations of various anniversaries, the dissemination of favorable historical narratives—often serves the political purpose of reinforcing national identity and marginalizes individual memories and other social identities. Private memories become “contaminated by national projects of remembrance,” writes the historian Peter Fritzsche.<sup>15</sup> The French cultural historian Pierre Nora even argues that the old age of memory and tradition gave way to the new age of history and conscious narrative-construction. “Memory is constantly on our lips,” he writes, “because it no longer exists.”<sup>16</sup>

Space history has its own recurrent myths. The historian Asif Siddiqi has identified four cultural archetypes, or “tropes,” structuring master narratives of space exploration in different countries: the myth of the founding father,

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representations that a particular culture produces based on these norms. The most authoritative texts function as instantiations of the “master narrative,” setting an effective norm for a wider discourse of remembrance. The term “collective” here does not imply uniformity of individual memories or a monolithic character of culture. Different groups within a larger society may have distinct collective memories that reinforce their group identities; narratives produced by these groups may come into conflict with the “master narrative” prevalent in larger culture.

14. Peter Fritzsche, “The Case of Modern Memory,” *The Journal of Modern History* 73 (March 2001): 87–117.

15. *Ibid.*, 107.

16. Pierre Nora, “General Introduction: Between Memory and History,” in *Realms of Memory*, vol. 1, p. 1.

the myth of exclusively domestic space technology, the myth of spaceflight as expression of national identity, and various stereotypical justifications for spaceflight—the destiny of humanity, the glory for the nation, national security, economic development, scientific exploration, and benefits to the ordinary people.<sup>17</sup> Every nation develops its own variations, such as the “myth of presidential leadership”<sup>18</sup> and the “astronaut myth” in the United States. The historian Roger Launius has identified several key elements of the popular image of Apollo astronauts as a “cultural icon”: the astronaut represented “everyman” and yet personified the American ideal, embodying the image of a masculine hero, a young, fun-loving, vigorous warrior, guided by an older, wiser leader, and showing the nation the path of progress toward utopian future.<sup>19</sup>

Like the Turk and the Italian in Pamuk’s novel, who change their identities by listening to each other’s stories, the astronauts could hardly remain unaffected by their image in popular culture. A recent documentary, *In the Shadow of the Moon*, is made entirely of interviews with Apollo astronauts illustrated with fragments of archival footage.<sup>20</sup> The film is not organized as a collection of separate stories of individual missions; instead, it weaves together bits and pieces of astronauts’ stories to create a meta-story that blurs distinctions among different missions and even among different astronauts. It is as if a composite image of the astronauts is telling a composite story of lunar landings. Another recent documentary, *The Wonder of It All*, uses a similar technique, interleaving commentaries from seven astronauts who walked on the Moon.<sup>21</sup> As one reviewer has noted, “the editing has been done so skillfully that instead of seven individuals talking, it seems more like one—each of them often continues a sentence that the other started.”<sup>22</sup> Individual stories—and individual astronauts’ identities—blend together seamlessly. How did this blending occur? Is this a trick of the filmmakers or a fundamental cultural mechanism at work in real life, squeezing individual identities to conform to the dominant cultural stereotype of an astronaut? What happens to alternative memories? What are the mechanisms by which a culture decides which memories to erase and which to write over them?

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17. See Siddiqi’s article in this volume.

18. See Roger D. Launius and Howard E. McCurdy, eds., *Spaceflight and the Myth of Presidential Leadership* (Urbana, IL: University of Illinois Press, 1997).

19. See Roger D. Launius, “Heroes in a Vacuum: The Apollo Astronaut as a Cultural Icon,” 43rd AIAA Aerospace Sciences Meeting and Exhibit, January 10–13, 2005, Reno, Nevada. AIAA Paper No. 2005-702 (available at [http://klabs.org/history/roger/launius\\_2005.pdf](http://klabs.org/history/roger/launius_2005.pdf)).

20. *In the Shadow of the Moon*, directed by David Sington (Discovery Films, 2007).

21. *The Wonder of It All*, directed by Jeffrey Roth (Jeffrey Roth Productions, 2007).

22. Ronald A. Wells, “Review: *The Wonder of It All*,” *The Space Review*, (accessed November 12, 2007). (available at <http://www.thespacereview.com/article/996/1>).



## THE SPACE AGE IN AMERICAN CULTURE

The cultural historian Emily Rosenberg has set up an appropriate system of coordinates to analyze the role of the Space Age in American culture: a four-dimensional space of politics, the media, philosophy, and the arts. The Sputnik shock and the perceived “missile gap” boosted Cold War anxieties, and these anxieties, in turn, gave a spur to the space race. The media were enrolled in the ideological “battle of appearances,” turning astronauts into international celebrities and making space-craft launches and television broadcasts from space into spectacular public events. The idea of technocracy gained support, and technological elites gained economic and political power, while “counterculture” chose the Spaceship Earth image to promote environmental consciousness and a new global identity, which transcended the political boundaries of a nation state. In architecture, product design, and abstract expressionist painting, new space-inspired shapes and color palettes captured the spirit of a “new frontier” of space in the aesthetic of self-confident progress, futuristic automation, and individual adventure.<sup>23</sup>

The dynamics of the relationship between spaceflight and the media, outlined by Rosenberg, stresses the active, instrumental role of culture in shaping the Space Age. NASA skillfully used the media to create and disseminate a favorable public image of the U.S. space program, and at the same time space technologies engendered a technological revolution in visual media, making electronic communications truly real time and global. Emerged what Rosenberg has called a “synergy” between the Space Age and the Media Age: spaceflight acquired its spectacular character while the media thrived on new popular subjects of interest and on the advanced technologies. Wider culture did not simply reflect developments in the space program; it became a vehicle for specific agendas within the space program.

Rosenberg’s analysis highlights tensions and contradictory trends in different aspects of the Space Age culture. The Space Age both threatened the sense of national pride and was enrolled to boost it. It gave birth to mammoth technological projects and raised concerns about uncontrollable government spending. It created a cult of technology and awoke suspicions about the attempts to find technological solutions to political problems. It trumpeted rationality and gave rise to various forms of spirituality. It was wrapped in the rhetoric of global unity and peaceful cooperation, and it led to the militarization of the heavens. It unleashed fantasy in the arts and regularized engineering creativity with systems engineering management techniques. It gave rise to both exciting and frightening visions of the future.

What are the cultural mechanisms that select specific iconic images, prominent figures, and big ideas that end up occupying a central place in the public

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23. See Rosenberg’s article in this volume.

memory of the Space Age? Recent literature begins to tackle the question of how, of all the variety of different visions of the Space Age, only a few survive as the dominant symbols of the era, while others are marginalized and forgotten.<sup>24</sup> As Roger Launius has argued, the American “master narrative” of spaceflight incorporates the mythology of “limitless frontier,” the popular image of the “heroic explorer,” and futurist visions to tell the story of American triumph in the space race, exceptionalism, and success. Three counter narratives have also emerged: the left-wing criticism of spending funds on space instead of social programs, the right-wing criticism of the space program as an excessive government expense, and various conspiracy theories of secretive space militarization schemes, alien abductions, and alike.<sup>25</sup> The competition among the master narrative and the three counter narratives might provide a template for analyzing the clash of diverse cultural representations of the Space Age outlined by Rosenberg. Each narrative plays out in public discourse through literature, imagery, film, and other media. The competition among Space Age symbols serves as a proxy for the battle of the narratives.

A number of seminal works have explored the relationship between NASA and popular culture. The political scientist Howard McCurdy has examined the links between popular conceptions of space exploration and national space policy, focusing on NASA’s deliberate exploitation of the frontier myth and the utopian visions of social progress through technological means, and its encouragement of the Cold War fears of Soviet domination. As the space program after Apollo changed its character, it no longer matched the popular expectations inherited from the previous era. The gradual disillusionment with the NASA space program since the 1970s could be traced to a widening gap between popular sentiment and the reality of spaceflight.<sup>26</sup> The cultural theorists Marina Benjamin, Constance Penley, and others have studied how popular culture responded to the Space Age by reinterpreting NASA’s symbolic imagery and generating competing discourses.<sup>27</sup> Broader culture turns space images, artifacts, names, events into

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24. See, for example, Roger D. Launius, “Perceptions of Apollo: Myth, Nostalgia, Memory, or All of the Above?” *Space Policy* 21 (May 2005): 129–139; William D. Atwill, *Fire and Power: The American Space Program as Postmodern Narrative* (Athens, GA: University of Georgia Press, 1994); Andrew Smith, *Moondust: In Search of the Men Who Fell to Earth* (New York, NY: Fourth Estate, 2005). For a historiographic review of the cultural history of the Space Age, see Asif A. Siddiqi, “American Space History: Legacies, Questions, and Opportunities for Future Research,” in *Critical Issues in the History of Spaceflight*, eds. Steven J. Dick and Roger D. Launius (Washington, DC: NASA SP-4702, 2006), esp. pp. 472–477.

25. See Launius’s article in this volume.

26. Howard E. McCurdy, *Space and the American Imagination* (Washington, DC: Smithsonian Institution Press, 1997).

27. See Marina Benjamin, *Rocket Dreams: How the Space Age Shaped Our Vision of a World Beyond* (New York, NY: Free Press, 2003), Constance Penley, *NASA/Trek: Popular Science and Sex in America* (New York, NY: Verso, 1997), and Debra Benita Shaw, “Bodies Out of this World: The Space Suit as Cultural Icon,” *Science as Culture* 13 (March 2004): 123–144.

“floating signifiers”—symbols without fixed meaning—that are reinterpreted again and again as they pass through different contexts. No single group or agency—even a government agency—can fully control them.

From a cultural anthropologist’s perspective, the interaction between NASA and broader culture could be recast as a dialogue of different cultures: NASA’s own culture(s) and the diverse subcultures of space fans, activists, educators, and artists. A study of this interaction might finally bring together two disparate research areas—the analyses of the Space Age in popular culture and the studies of NASA’s own institutional culture(s).<sup>28</sup> The anthropological models of cultural contact, conflict, translation, mediation, and the “trading zone” may prove useful here.<sup>29</sup>

Combining the notion of historical memory with the model of cultural exchange leads to an investigation of the dynamics of memory in different cultures. Within larger American culture, every distinct group—space engineers, astronauts, and space fans, for example—nurtures its own memories, its own folklore, and its own historical visions of the Space Age. What happens when different groups interact and exchange their memories? What new mythologies and hybrid identities emerge?

Although different groups and different nations may have different memories of the Space Age, the cultural mechanisms by which these memories are exchanged and altered over time prove remarkably similar. If we look beyond American culture and examine the convolutions of the historical memory of the Space Age in Russian and Soviet culture, we will find a similar struggle between a master narrative and an array of counter-stories, even though the dynamics of this struggle will follow a specific Russian political and cultural trajectory.<sup>30</sup>

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28. On NASA culture(s), see Alexander Brown, “Accidents, Engineering, and History at NASA, 1967–2003,” in *Critical Issues in the History of Spaceflight*, pp. 377–402; Yasushi Sato, “Local Engineering and Systems Engineering: Cultural Conflict at NASA’s Marshall Space Flight Center, 1960–1966,” *Technology and Culture* 46:3 (July 2005): 561–583; Diane Vaughan, *The Challenger Launch Decision: Risky Technology, Culture, and Deviance at NASA* (Chicago: University of Chicago Press, 1996); Vaughan, “Changing NASA: The Challenges of Organizational System Failures,” in *Critical Issues in the History of Spaceflight*, pp. 349–376.

29. See Peter Galison, “Trading Zone: Coordinating Action and Belief,” in *The Science Studies Reader*, ed. Mario Biagioli (New York, NY: Routledge, 1999), pp. 137–160.

30. On memorialization practices in Soviet and post-Soviet contexts, see Svetlana Boym, *The Future of Nostalgia* (New York, NY: Basic Books, 2001); Frederick C. Corney, “Rethinking a Great Event: The October Revolution as Memory Project,” *Social Science History* 22:4 (Winter 1998): 389–414; Geoffrey A. Hosking, “Memory in a Totalitarian Society: The Case of the Soviet Union,” in *Memory*, ed. Butler, pp. 97–114; and James V. Wertsch, *Voices of Collective Remembering* (Cambridge, UK: Cambridge University Press, 2002).

## RUSSIAN SPACE MEMORIALIZATION

Memories of the Space Age occupy a prominent place in contemporary Russian culture. This year alone, the Russians have celebrated the centennial of the legendary Chief Designer Sergei Korolev, the 150th anniversary of the space visionary Konstantin Tsiolkovskii, the 120th anniversary of the Soviet rocketry pioneer Fridrikh Tsander, the 50th anniversary of the R-7 intercontinental ballistic missile designed by Korolev, and, finally, the 50th anniversary of Sputnik and of Laika's flight on Sputnik II. One anniversary, however, was barely noticed: the ill-fated Soyuz 1 mission, which ended 40 years ago in a crash and the tragic death of the Soviet cosmonaut Vladimir Komarov. That year, 1967, was a significant turning point in Soviet cultural attitudes toward spaceflight: from admiration and pride to grief, cynicism, and, ultimately, indifference. Yet this memory is overwritten by a different, pride-boosting version of history.

The cultural trope of the founding father, as Asif Siddiqi has pointed out, still dominates the Russian cultural perceptions of the Space Age. In January-February 2007, a large conference was held in Moscow to commemorate Korolev's centennial. The conference had 1,650 participants; over 1,000 papers were submitted, and 420 were selected for oral presentation at the conference in 20 sections running in parallel over four days.<sup>31</sup> Although not all the papers were historical (many were devoted to current issues in astronautics), several sections were devoted to history. Such Korolev conferences are organized every year; this year's was the 31st. Also, every April, Gagarin conferences are held at his birthplace, the town of Gagarin (this year, it was the 33rd conference), and every September the town of Kaluga organizes Tsiolkovskii conferences (this year's was the 42nd). The general mood at such conferences is celebratory: veteran cosmonauts wear their ceremonial uniform, dancers in ethnic Russian costumes provide a suitable patriotic background, and Korolev's (or Gagarin's, or Tsiolkovskii's) portrait dominates the stage. During the Korolev conference, a new monument to Korolev was dedicated at the conference site, the Bauman State Engineering University in Moscow. Giant portraits and dominating, larger-than-life monuments serve as symbolic beacons for historical discourse. These conferences provide a suitable setting for hero-worshipping, rather than critical analysis. A chosen set of historical figures—Korolev, Tsiolkovskii, and Gagarin—serve as sources of light rather than objects of study at which light should be directed.

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31. Analytical report on the XXXI Academic Conference on Cosmonautics, dedicated to the 100th anniversary of academician Sergei Korolev. Moscow, Russia, January 30–February 1, 2007 (available at <http://www.ihst.ru/~akm/ao31.htm>). See also Asif Siddiqi, "From Russia with History," *NASA History Division News and Notes* 24:2 (May 2007): 1-2, 4-5 (available at <http://history.nasa.gov/nltr24-2.pdf>).

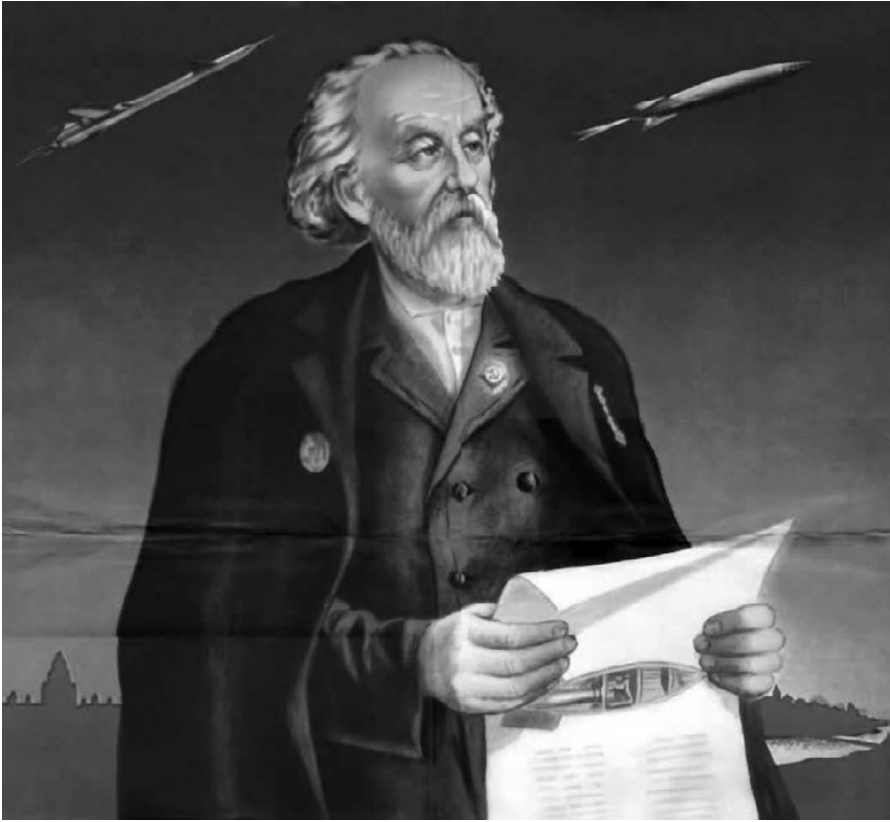
This weaving of space history around a handful of key personalities was characteristic of Soviet space history from its early days. If Korolev has traditionally been portrayed as the “founding father” of Soviet cosmonautics, Tsiolkovskii might be christened its “founding grandfather.” A deaf schoolteacher in the provincial town of Kaluga, Tsiolkovskii was a self-taught theorist and visionary of space travel. In the 1910s–30s, his writings widely circulated in the growing Russian community of space travel enthusiasts. In the 1930s, the Stalin propaganda machine made him into a national hero, a “poster grandpa” for national technological superiority. This ascribed identity was quite different from his own cultivated image of a humble provincial inventor, science popularizer, and public educator who built rocket models in his home workshop.<sup>32</sup>

In the postwar period, Soviet rocket engineers and the space enthusiasts’ community put the government-constructed myth to their own use. In the late 1940s, the name of late Tsiolkovskii was regularly evoked amidst a Party-sponsored nationalist campaign asserting the priority of Russian-born scientists and engineers. Journalists claimed that Tsiolkovskii had invented the airplane and the dirigible.<sup>33</sup> On September 17, 1947, on the 90th anniversary of Tsiolkovskii’s birth, Sergei Korolev gave a speech at the commemoration meeting at the Central Hall of the Soviet Army. As Asif Siddiqi has noted, “significantly, Korolev drew attention to Tsiolkovskii’s ideas about space travel rather than rocketry or airships, thus beginning the process of relocating Tsiolkovskii within space research rather than aeronautics.”<sup>34</sup> Suddenly, Korolev and other rocket engineers interested in space exploration began to recall their prewar meetings with Tsiolkovskii and to present their space projects as “inspired” by Tsiolkovskii. Pilgrimages to Tsiolkovskii’s home in Kaluga to meet with the great man came to be seen retrospectively as a “rite of passage” for any major figure among the rocket engineers. A symbolic link with Tsiolkovskii, canonized by the Soviet state, played an important role in legitimizing their proposals in the eyes of government officials. In 1952–1953, in autobiographical materials, accompanying his applications for membership in the Communist Party and in the Academy of Sciences, Korolev wrote about his personal meeting with the late visionary as a starting point for his interest in rocketry. Even though he had met Tsiolkovskii only once in 1932, during

32. See James T. Andrews, “K. E. Tsiolkovskii, Ascribed Identity, and the Politics of Constructing Soviet Space Mythology, 1917–1957,” paper presented at the 2006 annual conference of the American Association for the Advancement of Slavic Studies in Washington, DC; Andrews, “In Search of a Red Cosmos: Space Exploration, Public Culture, and Soviet Society,” *Societal Impact of Spaceflight*, eds. Stephen Dick and Roger Launius (NASA, forthcoming); and Andrews, *Visions of Space Flight: K. E. Tsiolkovskii, Russian Popular Culture, and the Birth of Soviet Cosmonautics, 1857–1957* (Texas A&M University Press, forthcoming).

33. “My – nasledniki Tsiolkovskogo,” *Komsomol’skaia pravda* (September 17, 1947).

34. Asif A. Siddiqi, “The Rockets’ Red Glare: Spaceflight and the Russian Imagination, 1857–1957,” Ph.D. dissertation, Carnegie Mellon University, 2004, p. 293.



Soviet poster commemorating the centennial of Tsiolkovskii's birth, 1957. (Courtesy of the Russian Academy of Sciences Archives)

Tsiolkovskii's visit to Moscow, the story later became embellished to the point of Korolev's vivid recollection of a visit to Tsiolkovskii's house in Kaluga—a visit that evidently never happened.<sup>35</sup> Privately, Korolev admitted that he barely remembered Tsiolkovskii and that the main source of his recollections was his own “fantasy.”<sup>36</sup> Yet the official canonization of Tsiolkovskii and the resurrection of his legacy played a crucial role in legitimizing the idea of space exploration in the postwar Soviet Union. By turning a government-sponsored myth into a personal memory, Korolev managed to present his space projects

35. See Iaroslav Golovanov, “Korolev i Tsiolkovskii,” unpublished manuscript; RGANTD, f. 211, op. 4, d. 150 (available at [http://rgantd.ru/vzal/korolev/pics/006\\_008.pdf](http://rgantd.ru/vzal/korolev/pics/006_008.pdf)); Georgii Vetrov, *S.P. Korolev i kosmonavtika: Pervye shagi* (Moscow: Nauka, 1994), chaps. 20, 21.

36. Iaroslav Golovanov, *Korolev: Fakty i mify* (Moscow: Nauka, 1994), p. 110.

as a matter of national prestige and eventually to secure permission to launch Sputnik shortly after the centennial of Tsiolkovskii's birth.<sup>37</sup>

### THE MYTH OF THE COSMONAUT

As the Soviet government kept the identity of the true leaders of the space program secret (Sergei Korolev remained an anonymous "chief designer" until his death in 1966), a handful of flown cosmonauts literally had to stand on top of Lenin's mausoleum next to Nikita Khrushchev for the entire space program. State-sponsored memorialization of Soviet space achievements turned such staged events as mausoleum appearances into iconic images of the space era widely disseminated through television, newspapers, posters, and postcards.

The space historian Cathleen Lewis has examined the Soviet "myth of the cosmonaut," which in some aspects mirrors the astronaut myth even though the two were supposed to stand for two ideologically opposite political regimes and systems of values. During the Soviet era, ghost writers produced numerous cosmonauts' biographies that followed a familiar pattern of heroic narrative: humble beginnings, childhood burdened by wartime hardship, encouragement by the family and teachers, good education paid for by the Soviet state, a wise mentor who teaches the core communist values, loyal military service, building up character and physical strength through a "trial of fire," achieving the lifetime dream by carrying out an important mission trusted to the cosmonaut by the Communist Party, and finally coming back with an important message reaffirming the communist values.<sup>38</sup> As the cultural historian Svetlana Boym has noted, "Soviet space exploration inherited the rhetoric of war; it was about the 'storming of space,' and the cosmonaut was the peacetime hero who was ready to dedicate himself to the motherland and, if necessary, sacrifice his life for her sake."<sup>39</sup>

The cosmonaut myth played a major role in Khrushchev's attempts to de-Stalinize Soviet society—to break with the Stalinist past and to reconnect with the original revolutionary aspirations for a communist utopia.<sup>40</sup> In 1961, soon after Gagarin's flight, Khrushchev ordered to remove Stalin's remains

37. Siddiqi, "The Rockets' Red Glare." See also Asif A. Siddiqi, *The Red Rockets' Glare: Soviet Imaginations and the Birth of Sputnik* (Cambridge University Press, forthcoming).

38. Cathleen Lewis, Curator of Russian spacecraft at the Smithsonian National Air and Space Museum, has been working on a book on the social and cultural history of "hero-cosmonauts" in the Soviet Union. She has presented various aspects of her research at numerous scholarly conferences.

39. Svetlana Boym, "Kosmos: Remembrances of the Future," in *Kosmos: A Portrait of the Russian Space Age*, photographs by A. Bartos, text by S. Boym (Princeton, NJ: Princeton Architectural Press, 2001), p. 91.

40. On the Khrushchev period, see Polly Jones, ed., *The Dilemmas of De-Stalinization: Negotiating Cultural and Social Change in the Khrushchev Era* (London and New York: Routledge, 2006), and William Taubman, *Khrushchev: The Man and His Era* (New York, NY: W.W. Norton, 2003).



from Lenin's mausoleum in Red Square and to change the name of the city of Stalingrad, the site of a major battle that turned the tide of World War II and a potent symbol of the Soviet victory over Nazism. As monuments of the Stalin era were being dismantled, new memorials to the Space Age were erected, supplanting the collective memory of Stalinist terror and devastating war with futurist visions of space conquests.

The cosmonaut myth was mostly about the future, not the past. In 1961, on the heels of Gagarin's triumph, Khrushchev proclaimed a new Communist Party Program to build a communist society in the Soviet Union within the lifetime of the current generation. The creation of the New Soviet Man—an honest, sincere, modest, morally pure person and a conscientious worker—was an essential part of the program, and the cosmonauts were hailed as a living embodiment of this human ideal. Cosmonauts themselves often felt uncomfortable playing a public role that had little to do with their own professional identity.<sup>41</sup>

In the Brezhnev period, as conservative ideologues attempted to whitewash the image of Stalin as a political and military leader, memories of World War II again took up a prominent place in public discourse. The conquest of space became symbolically associated with the Soviet victory over Nazi Germany. A typical Brezhnev-era biography pictured Gagarin in his capsule, preparing for his flight and listening to music, which evoked memories of his childhood: life under Nazi occupation, war privations, and the joy of liberation by Soviet soldiers.<sup>42</sup> This ideological appropriation of private memories quite creatively reinterpreted Gagarin's actual experiences. As a boy, Gagarin indeed survived the occupation, but he reportedly had to hide this fact while applying to a flight school; this "dark spot" in his biography could have prevented his admission.<sup>43</sup> He later wondered how the authorities still allowed him to become a cosmonaut after learning about the fact.<sup>44</sup> And the music he listened to during the preparations for his flight could hardly evoke elevated patriotic feelings: he actually listened to *Lilies of the Valley*, a popular love song whose lyrics cosmonauts parodied, turning it into a drinking song.<sup>45</sup>

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41. See Slava Gerovitch, "'New Soviet Man' Inside Machine: Human Engineering, Spacecraft Design, and the Construction of Communism," *OSIRIS* 22 (2007): 135-157.

42. *Yuri Gagarin: The First Cosmonaut* (Moscow: Novosti Press Agency Publishing House, 1977).

43. Interview with Marina Popovich, *Iakutsk vechernii* (March 18, 2005) (available at <http://epizodsspace.testpilot.ru/bibl/intervy/popovich-m1.html>).

44. Interview with Pavel Popovich, *Fakty* (Kiev) (July 18, 2003) (available at <http://epizodsspace.testpilot.ru/bibl/intervy/popovich.html>).

45. Interview with Pavel Popovich, *Meditinskaiia gazeta* (April 13, 2007) (available at <http://www.mgzt.ru/article/310>). For a transcript of Gagarin's onboard communications, see "Zvezdnyi reis Iuriiia Gagarina," *Izvestiia TsK KPSS*, no. 5 (1991): 101-129.





Gagarin monument in Moscow, dedicated in 1980. (Courtesy of Wikipedia)

Like any irrational construction that was to be believed rather than critically examined, the myth of the cosmonaut was full of internal contradictions. The cosmonauts were portrayed as both ordinary people and exceptional heroes. All the first cosmonauts had military ranks but their missions were presented as entirely peaceful. Their flights were praised as daring feats, while official reports of perfectly functioning onboard automatics did not seem to leave much room for human action.<sup>46</sup>

In July 1980, shortly before the opening of the Moscow Olympics, a monument to Gagarin was dedicated in Moscow. Gagarin's giant statue soars 40 meters above the crowd on top of a colossal pillar, evoking the image of a rocket plume. The cosmonaut and his rocket are symbolically fused, presenting Gagarin as a superhuman blend of man and machine. The insurmountable distance between the statue and the viewer emphasizes the mythological proportions of Gagarin's figure, which rises in its futuristic perfection far above today's all-too-human world.

### CONSTRUCTING THE MASTER NARRATIVE

Just like the cosmonaut myth in many respects resembled the astronaut myth, the Soviet master narrative of space exploration mirrored essential features of the American story of national exceptionalism, technological progress, and continuous success. Pervasive secrecy and centralized control over the media further streamlined public discourse about space. Bound by secrecy on one side and by propaganda demands on the other, Soviet-era space history was reduced to a set of clichés: flawless cosmonauts flew perfect missions, supported by unfailing technology. All contingencies, failures, and alternative paths were thoroughly purged from history books. Entire programs, such as the manned lunar program, were passed over in silence. The space industry itself, namely its leading think tank, the Scientific Research Institute No. 88 (since 1966, the Central Scientific Research Institute of Machine Building), was charged with the task of clearing all space-related materials for publication in the open press.<sup>47</sup> While Soviet propaganda cultivated an idealized image of the Soviet space program for ideological purposes, space industry officials had their own reasons for deemphasizing failures and contingencies before decision-makers in the high echelons of Soviet power.

The cosmonauts resented the restrictions on information about their flights, having to repeat the same platitudes if not outright lies over and over again. In his private diary, Lieutenant General Nikolai Kamanin, the Deputy

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46. See Slava Gerovitch, "Human-Machine Issues in the Soviet Space Program," in *Critical Issues in the History of Spaceflight*, pp. 107-140.

47. See Yurii A. Mozzhorin, *Tak eto bylo: Memuary Iu.A. Mozzhorina. Mozzhorin v vospominaniakh sovremennikov* (Moscow: Mezhdunarodnaia programma obrazovaniia, 2000), p. 298.



The Chief Designer Sergei Korolev reenacting his actions during Yuri Gagarin's flight on April 12, 1961. (Photo from the author's collection)

Chief of the Air Force's General Staff in charge of cosmonaut selection and training, complained about the official ban on reports about equipment failures and cosmonaut errors: "Because of these restrictions, we are actually robbing ourselves by creating an impression of 'extraordinary ease' and almost complete safety of prolonged space flights. In fact, such flights are very difficult and dangerous for the cosmonauts, not only physically, but also psychologically."<sup>48</sup> "The most interesting things in our cosmonautics are classified," he lamented.<sup>49</sup> These sentiments, however, did not translate into an active opposition to the master narrative. When asked to serve as a consultant for Andrei Tarkovsky's feature movie based on Stanislaw Lem's novel *Solaris*, in which space travel turned into an exploration of the human soul, Kamanin blatantly refused.

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48. Nikolai Kamanin, *Skrytyi kosmos*, vol. 4, 1969-1978 (Moscow: Novosti kosmonavtiki, 2001), p. 182 (diary entry of June 6, 1970).

49. Nikolai Kamanin, *Skrytyi kosmos*, vol. 1, 1960-1963 (Moscow: Infortekst, 1995), p. 176 (diary entry of October 31, 1962).

Such science fiction “degrades human dignity and denigrates the prospects of humanity,” he wrote in the same diary.<sup>50</sup>

An “inner censor” reinforced the master narrative more efficiently than any outside censoring agency. Early Soviet discourse constantly oscillated between “what is” and “what ought to be”—the quality literary scholar Katerina Clark has labeled a “modal schizophrenia.”<sup>51</sup> The blurring of this boundary and the desire to replace “what is” with “what ought to be” was characteristic of the later space-related discourse as well. Sergei Korolev was acutely aware of the historical significance of his space projects, but his vision of history reflected a desire to improve on reality to meet an ideal. “What is” was just a messy, error-prone draft, while the history’s hall of fame deserved a clean, showcase version of “what ought to be.” Korolev did not admit any journalists to the launch site on the day of Yuri Gagarin’s pioneering flight, April 12, 1961.<sup>52</sup> Later, however, he sat down for a photo session, pretending to communicate with the cosmonaut in orbit. As Korolev’s identity was still a state secret, the photo was not, of course, publicly released at the time. This fake was made for internal consumption—for those who knew about Korolev and his role in the space program—and for future generations as a “clean” version of historical events.

For Korolev, space artifacts were first and foremost symbols, not merely technological objects. Before the launch of Sputnik, two copies of the satellite were made: one for the flight and one for ground tests and simulations. Korolev ordered the satellite surface to be polished in order to maximize reflection of solar light to avoid possible overheating. He was outraged, however, when he learned that his subordinates neglected to polish the test copy: “It will be displayed in museums!” He stressed the aesthetic appeal of the ball-shaped Sputnik, arguing that, as a symbol of human entry into space, it must look “properly.”<sup>53</sup>

Korolev’s notion of looking “properly” apparently did not include looking authentic. Soon after Gagarin’s flight, Korolev suggested to display a make-up of Gagarin’s space capsule at an aviation show at the Tushino airfield in Moscow. Since Gagarin’s Vostok spacecraft was still classified, Korolev let his subordinates “unleash their fantasy.”<sup>54</sup> The result looked impressive but had nothing to do with the actual spacecraft.<sup>55</sup>

50. Kamanin, *Skrytyi kosmos*, vol. 4, p. 152 (diary entry of April 18, 1970).

51. Katerina Clark, *The Soviet Novel: History as Ritual*, 3rd ed. (Chicago, IL: The University of Chicago Press, 2000) pp. 36–38.

52. Iaroslav Golovanov, *Zametki vashogo sovremennika*, vol. 1, 1953–1970 (Moscow: Dobroe slovo, 2001), p. 399 (diary entries of January–March 1970).

53. Memoirs by Mark Gallai, in *Akademik S.P. Korolev: uchenyi, inzhener, chelovek. Tvorcheskii portret po vospominaniiam sovremennikov*, ed. Aleksandr Ishlinskii (Moscow: Nauka, 1986), p. 63.

54. Memoirs by Stal’ Denisov, in *ibid.*, p. 218.

55. Anton Pervushin, “Glavnaia taina ‘Vostoka,’” *Sekretnye materialy XX veka*, no. 8 (April 2004) (available at <http://epizodsspace.testpilot.ru/bibl/pervushin/vostok.html>).

Soviet media skillfully “enhanced” iconic images to stress their ideological message and to eliminate any undesired connotations. For example, the May 1961 issue of the Soviet illustrated magazine *Science and Life* featured a drawing of Gagarin’s launch on its cover. The drawing faithfully depicted the actual scene of Gagarin’s bidding farewell to a group of administrators, officers, engineers, and technicians, with one exception: all the military personnel at the launch pad were magically transformed into civilians, their military uniforms replaced with colorful cloaks. Recent research has uncovered many instances of retouching or cropping cosmonaut photos to erase “undesirable” individuals (who died in an accident or left the cosmonaut corps) from group shots—a venerable Soviet tradition going back to the Stalin-era iconographic erasure of high-placed “enemies of the people.”<sup>56</sup>

To create a “clean” version of space history, both visuals and audio records were edited. On August 8, 1962, at a meeting of the State Commission that confirmed crew selections for the Vostok 3 and Vostok 4 flight, Deputy Chief of the Air Force Marshal Sergei Rudenko mistakenly pronounced the cosmonaut Pavel Popovich’s last name as Popov. “This gross error created discomfort for everybody present,” wrote Kamanin in his diary. “Too bad, but we’ll have to cut ‘Popov’ out of Marshal’s speech.”<sup>57</sup> Again, the editing was made not for an immediate public release (the State Commission meeting, attended by Korolev and other “secret” designers, went on behind closed doors), but for a “clean” historical record.

Artifacts and records deposited in museums and state archives were carefully selected to reinforce the master narrative. For example, when a document outlining the instructions for a cosmonaut who accidentally landed on foreign soil came up for declassification, this sparked an internal debate. The instructions explained in detail that the cosmonaut should not disclose any information about the launch site, the booster, the spacecraft, and the leadership of the Soviet space program, and only the last—seventh—item on the list permitted the cosmonaut to ask for contact with a Soviet consul. “How can we give this document to a museum? How will we look like after that?” asked the person responsible for declassification and ordered the document to be destroyed. Valentina Ponomareva, a former cosmonaut candidate and a space

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56. See James Oberg, “Cosmonauts and Cosmo-NOTS: Image Falsification in the Soviet Manned Space Program,” Remembering the Space Age: 50th Anniversary Conference, NASA History Division and National Air and Space Museum Division of Space History, October 22–23, 2008, Washington, DC On the Stalin-era political manipulation of iconography, see David King, *The Commissar Vanishes: The Falsification of Photographs and Art in Stalin’s Russia* (New York, NY: Metropolitan Books, 1997).

57. Kamanin, *Skrytyi kosmos*, vol. 1, p. 137 (diary entry of August 8, 1962).

historian, salvaged the document from destruction, but it still was not made available to the public.<sup>58</sup>

The master narrative was literally written in stone—in massive monuments that placed the cosmonauts, the leading engineers, and Soviet political leaders on a pedestal of historical myth. In a revealing symbolic gesture, space industry leadership actually placed space documents and artifacts in the foundation of one such monument in Moscow. A recently declassified petition from a group of industry leaders to the Soviet political leadership read:

For the memorialization of the outstanding historical achievements of the Soviet people in the conquest of space and for the eternal preservation of documentation and other materials about the flights of Soviet spacecraft, it would be advisable to place in special sealed containers documents, films, and make-ups of Soviet artificial satellites of Earth, of space stations, of space ships, and of the most important research equipment used in flight, and to brick up these containers into the foundation of a monument commemorating the outstanding achievement of the Soviet people in the conquest of space to be erected in Moscow.<sup>59</sup>

An identical set of carefully selected documents and artifacts was put on display at a museum open under the monument. Space history was written once and for all. The master narrative was literally protected from challenge by a stone wall.

### SOVIET COUNTER-NARRATIVES

Individual memories that could not fit into the master narrative did not disappear. Beneath the glossy surface of official history, a myriad of private stories circulated informally, and they formed an oral tradition totally separate from written accounts. Historians have traditionally associated such “counter memories in the very shadow of the official history” with groups which are “excluded or overlooked.”<sup>60</sup> In the Soviet space program, by contrast, the groups that secretly cultivated such “counter memories” were front and center in official history: the space engineers and the cosmonauts. They were privy to information carefully concealed from an average Soviet citizen, and they

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58. Valentina Ponomareva, *Zhenskoe litso kosmosa* (Moscow: Gelios, 2002), pp. 118–119.

59. Leonid Smirnov et al. to the Party Central Committee, February 2, 1966; Russian State Archive of the Economy (RGAE), Moscow, f. 4372, op. 81, d. 1944, l. 50.

60. Catherine Merridale, “War, Death, and Remembrance in Soviet Russia,” in *War and Remembrance in the Twentieth Century*, eds. Jay Winter and Emmanuel Sivan (Cambridge, U.K.: Cambridge University Press, 1999), quoted in Fritzsche, “The Case of Modern Memory,” p. 107.

preserved and passed on their memories as part of professional folklore. Telling and listening to the “true stories” of events hashed up or distorted in official accounts became an essential part of their group culture, a part of being a space engineer or a cosmonaut. Counter memory defined their private identity as much as the master narrative shaped their public persona.<sup>61</sup>

The engineers and the cosmonauts resented the obvious gap between their private memories and the official story. Forced to toe the official line in public, they let off their frustration in diaries and private conversations. “Why are we telling lies?” Korolev’s deputy Boris Chertok jotted in his notebook, reflecting on multiple launch failures concealed from the public.<sup>62</sup> “All our reports are half-truths, which is worse than a lie,” Iaroslav Golovanov, a leading space journalist, wrote in his notes.<sup>63</sup> While the rest of the world was watching a live report of the Apollo 8 mission, Soviet television broadcasted a children’s movie. Golovanov remarked on that occasion, “Are Central Committee officials so thick that they don’t understand how foolish and shameful this is?”<sup>64</sup> When his newspaper put off the publication of his article on Apollo 11 indefinitely, he let off steam in his private notebook: “I am tormented with shame. Will they allow such a disgrace again?”<sup>65</sup>

The same people—journalists, cosmonauts, and leading engineers—wrote both official accounts and private counter memories. A discursive split went right through their souls. Lieutenant General Nikolai Kamanin was one of the leading spokespersons for the Soviet space program. He appeared on the radio and television, published popular books and articles, arranged cosmonauts’ public appearances, and wrote and rehearsed their public speeches. In December 1968, he wrote an article for *The Red Star*, the Soviet Armed Forces newspaper, about the forthcoming launch of Apollo 8. He entitled his article “Unjustified Risk” and said all the right things that Soviet propaganda norms prescribed in that case. Naturally, he did not even mention that the Soviet Union had its own secret human lunar program. But in his private diary, he frankly admitted that the Americans were getting ahead in the lunar race and railed against those whom he saw as the true culprits: party leadership, military brass, and top administrators of the space program who neglected or misdirected the program

61. On the tension between the professional identity and the public image of Soviet cosmonauts, see Gerovitch, “‘New Soviet Man’ Inside Machine,” pp. 149–152. On how secrecy shaped the identity of space engineers, see Gerovitch, “Stalin’s Rocket Designers’ Leap into Space: The Technical Intelligentsia Faces the Thaw,” *OSIRIS* 23 (2008): 189–209.

62. Boris Chertok, Notebook #16, September–November 1964; Chertok papers, Smithsonian National Air and Space Museum, Washington, DC.

63. Golovanov, *Zametki vashogo sovremennika*, vol. 1, p. 383 (diary entries of September 1969–January 1970).

64. *Ibid.*, p. 343 (diary entries of September–December 1968).

65. *Ibid.*, p. 372 (diary entries of June–September 1969).



for far too long. “We have fallen behind the United States by two or three years,” he wrote in the diary. “We could have been first on the Moon.”<sup>66</sup>

The master narrative dominated Soviet media, but during the relatively liberal “thaw” of the Khrushchev era, newspapers occasionally gave voice to ordinary citizens who did not join in the public expression of enthusiasm for space. For example, in June 1960, a youth newspaper published a letter from one Alexei N., who bluntly asked about the space program, “What’s in it for me?” “I, for example, on the eve of the launch of a rocket, received 300 rubles salary, and this is what I still receive, in spite of the successful launch. Doesn’t it seem to you that the enthusiasm for these sputniks and the cosmos in general is inopportune and, more precisely, premature?” he asked. “Rocket, rocket, rocket—what’s it needed for now? To hell with it now, and with the moon, but give me something better for my table. After that, then it will really be possible to flirt with the moon.”<sup>67</sup> Most likely, the newspaper published this critical letter not to generate a genuine debate but simply to provoke an indignant reaction from space enthusiasts and thus further shore up the master narrative. An occasional display of dissenting opinion only stressed the need for the further strengthening of the space propaganda effort. Even such carefully controlled expressions of criticism, however, totally disappeared from public discourse during the Brezhnev period.

The first visible cracks in the master narrative came from those inside the space program who wanted to reassign credit among the major protagonists, while preserving the overall structure of the narrative. In 1974, the chief designer of rocket engines Valentin Glushko, Korolev’s longtime opponent, was appointed head of Korolev’s former design bureau. For 15 years, as Glushko ruled this central asset of the Soviet space program, he made a determined effort to rewrite Soviet space history by emphasizing his own contributions and downplaying Korolev’s. He even ordered to remove spacecraft designed by Korolev from the bureau’s internal museum and to replace them with rocket engines of his own design.<sup>68</sup>

The tensions that brewed under the lid of the master narrative over decades eventually came to surface as the policy of glasnost during Gorbachev’s perestroika gave voice to the suppressed counter memories.

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66. Nikolai Kamanin, *Skrytyi kosmos*, vol. 3, 1967-1968 (Moscow: Novosti kosmonavtiki, 1999), p. 335 (diary entry of December 12, 1968).

67. Quoted in Paul Josephson, “Rockets, Reactors and Soviet Culture,” in *Science and the Soviet Social Order*, ed. Loren R. Graham (Cambridge, MA: Harvard University Press, 1990), p. 185.

68. Asif A. Siddiqi, “Privatising Memory: The Soviet Space Programme Through Museums and Memoirs,” in *Showcasing Space*, eds. Martin Collins and Douglas Millard (London: Science Museum, 2005), p. 107.



## THE END OF THE SOVIET UNION AND THE COLLAPSE OF THE MASTER NARRATIVE

In the late 1980s, public revelations of the full scale of Stalin's crimes led to a swift deterioration of the official historical discourse. Space history was also profoundly affected. Some archival documents came to light, private diaries became available, participants began to speak out, and a totally new picture of the Soviet space program emerged like a giant iceberg suddenly lifted out of the water. As Asif Siddiqi has written, "the single narrative of Soviet space history—teleological and Whiggish—fractured into multiple and parallel narratives full of doubt (for the claimed successes of the program), drama (for the episodes we never knew about) and debate (over contesting narratives of history)."<sup>69</sup> Veteran engineers, cosmonauts, and politicians began to tell stories of multiple failures during Soviet space missions, fatal errors and true heroism, favoritism in project funding, and hidden pressures to launch by a politically motivated date.

The collapse of the Soviet Union, as the Russian state largely withdrew both its economic support for the space industry and its ideological oversight over historical discourse, became a truly traumatic event for historical memory of the Space Age. This trauma resulted in a systematic transformation of memory of all previous Soviet space history. Soviet-era political leadership, often depicted as inept and short-sighted in the perestroika-period memoirs, suddenly acquired a better image. Stalin, Khrushchev, and Brezhnev were now portrayed as wise leaders, who appreciated the importance of the rocket and space industry and lent it much-needed political and economic support.

The memory of the Space Age became atomized and decentralized, or, in Asif Siddiqi's expression, "privatized" along with Russian industry itself. Trying to attract Western investors and clients, Russian space companies began advertising their history, opened exhibit halls for the public, and put on display rare space artifacts, including many original spacecraft. Owned and operated by space companies themselves, these "corporate" museums produced versions of space history that placed these companies in the best possible light. A competition in today's marketplace naturally led to competing versions of history, each shored up with its own set of artifacts and corporate collections of memoirs. To this day design bureaus and other Russian space institutions often physically hold or control access to most historical documents related to the Soviet space program, and the insiders have complete control over which, when, and in what form documents are released.

The old mode of hero-worshipping history did not change; only now we witness clashes between followers of different space hero cults. Soviet space history itself is full of acrimonious disputes, including the famous fallout

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69. *Ibid.*, p. 99.



The unveiling of a monument to the chief designer of rocket engines Valentin Glushko at the Alley of Space Heroes in Moscow, October 4, 2001. (Photo from the author's collection)

between Korolev and the chief rocket engine designer Valentin Glushko, or the equally famous and equally bitter rivalry between Korolev and his main domestic competitor in the space race, the chief designer of cruise missiles Vladimir Chelomei. A loyal team of followers gathers around each of these historical figures, and they construct their own versions of history, trying to invalidate their opponents' accounts. Korolev's defenders accuse Glushko of refusing to build rocket engines for Korolev's lunar rockets, and blame Chelomei for siphoning off a large part of resources of the lunar program, all this resulting in the Soviet loss in the lunar race. But the rivals have their own stories to tell. From their perspective, Korolev is often portrayed as a ruthless competitor and a clever political operator. For example, Khrushchev's son Sergei, who had worked for Chelomei, has suggested that Korolev had "focused his energy on what he did best—the elimination of his rivals."<sup>70</sup> A group of Russian space industry dignitaries are posing in front of Glushko's

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70. Sergei Khrushchev, "How Rockets Learned to Fly: Foreword," in Von Hardesty and Gene Eisman, *Epic Rivalry: The Inside Story of the Soviet and American Space Race* (Washington, DC: National Geographic, 2007), p. xviii.

monument, using the monument as a backdrop for a photo opportunity. At the same time, symbolically, they are standing guard to this monument and to a specific version of history that sanctifies this particular hero.

Monuments are not just silent memorials commemorating the past. Monuments do speak. Valentin Glushko reportedly bequeathed to inter his remains on the surface of the Moon. This bequest is cited nowadays as an inspiration for the Russians to go the Moon.<sup>71</sup> An aura of national pride is projected from the glorious past into the promising future. A heroic image of the past is enrolled to promote a specific policy agenda today. “Memorialization has become an essential function of the *current* Russian space program,” Asif Siddiqi has noted. For Russians, “truly, their future (e.g., bases on the Moon) exists in simultaneity with their past (e.g., Sputnik, Gagarin). It has become almost impossible to separate them.”<sup>72</sup>

The dominant medium for reassessing the past and translating this reassessment into lessons for today and tomorrow has been a steady stream of memoirs written by veterans of the Soviet space program: cosmonauts, engineers, physicians, military officers, and administrators. By revealing hitherto unknown historic details and placing space artifacts into context, these memoirs serve as a major vehicle for exploring Soviet space history. Since archival records are largely unavailable to researchers, new revelations come mostly through such memoirs. Nowhere is the “privatization” of memory as evident as in these highly personal, often emotional and partisan, accounts. Memoirists often try to write not merely an account of their own activities within the space program, but the whole history of specific periods or projects as seen from their partial perspective. In other words, they present coherent alternative versions of space history, not simply collections of bits and pieces of their individual experiences. Thus, even though these memoirs purport to articulate “counter-memory”—an alternative to the official story line—in fact they show a craving and a nostalgia for a Soviet-style single master narrative that would elevate their own patron—be it Korolev, Glushko, or Chelomei—above others.<sup>73</sup> “Counter-memory” ends up reproducing the same stereotypes of the master narrative, for it still serves a propaganda purpose—if not for the central government, then for a particular group within the space industry.

The changes in the way memoirs were written from the Soviet era to the perestroika to the post-Soviet period reflect an adaptation of individual memory to a specific historical context.<sup>74</sup> An oft-cited memoir by Oleg Ivanovskii went

71. Aleksandr Zhelezniakov, “V Moskve otkryt pamiatnik akademiku Glushko,” *Poslednie kosmicheskie novosti*, no. 206 (October 4, 2001) (available at <http://www.cosmoworld.ru/spaceencyclopedia/hotnews/index.shtml?04.10.01.html>).

72. Siddiqi, “From Russia with History,” p. 5.

73. Siddiqi, “Privatising Memory,” p. 108.

74. On memoirs of the Soviet era, see *The Russian Memoir: History and Literature*, ed. Beth Holmgren (Evanston, IL: Northwestern University Press, 2003); Irina Paperno, “Personal Accounts of the

through multiple editions from 1970 to 2005.<sup>75</sup> Ivanovskii was the lead designer on the Vostok mission; he coordinated interaction among multiple participants in the production, testing, and launch of Gagarin's spacecraft. He later headed the space industry department of the Military Industrial Commission, the top government body overseeing the space program. The early editions of his memoirs were published under the pseudonym Ivanov; he wrote about many leading space engineers but could not reveal their names. In the 1980s, he added their real names but still followed the Korolev-centered master narrative. Even in the post-Soviet period, he was not ready to reveal anything about his activity inside the government bureaucracy. In the latest edition, a three-page section on this period of his life is filled entirely with quotations from other people's memoirs.<sup>76</sup> Without access to many original documents, the world of personal memory becomes self-referential. Ivanovskii did openly what others do implicitly or even unconsciously—he presented other people's memories as his own.

In the absence of crucial archival sources, memoirs are becoming a major source for historical scholarship. Among all the memoirs of the post-Soviet era, the most ambitious and the most influential has been the four-volume set of books by Korolev's deputy Boris Chertok, a sweeping and riveting account of the Soviet space program from its origins in the postwar years to the end of the Cold War. Well-informed and well-told, these memoirs, nonetheless, are written entirely from the perspective of Korolev's engineering team.<sup>77</sup> In Russia, the reverence for such patriarch figures and the trust in their personal accounts reach extremes. The recent fundamental, 750-page-long Russian *Encyclopedia of Human Spaceflight* often draws on memoirs as a major source for its articles. For example, the entry on the Soyuz 15 mission is based largely on an extended quote from Chertok's memoirs.<sup>78</sup> In 1974, Soyuz 15 failed to dock with the Salyut 3 space station, and an internal controversy erupted over equipment malfunctions

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Soviet Experience," *Kritika: Explorations in Russian and Eurasian History* 3:4 (Fall 2002): 577–610; and Barbara Walker, "On Reading Soviet Memoirs: A History of the 'Contemporaries' Genre as an Institution of Russian Intelligentsia Culture from the 1790s to the 1970s," *Russian Review* 59:3 (2000): 327–352.

75. See Aleksei Ivanov (Oleg Ivanovskii), *Pervye stupeni: Zapiski inzhenera* (Moscow: Molodaia gvardiia, 1970); Ivanov (Ivanovskii), *Vpervye: zapiski vedushchego konstruktora* (Moscow: Moskovskii rabochii, 1982); Oleg Ivanovskii, *Naperekor zemnomu pritiiazhenu* (Moscow: Politizdat, 1988); and Ivanovskii, *Rakety i kosmos v SSSR: Zapiski sekretного konstruktora* (Moscow: Molodaia gvardiia, 2005).

76. Ivanovskii, *Rakety i kosmos*, pp. 164–166.

77. NASA History Division has sponsored the translation of these memoirs into English under Asif Siddiqi's editorship. Siddiqi has provided an excellent running commentary to the English edition, which places Chertok's story in a wider context. See Asif A. Siddiqi, "Series Introduction," in Boris Chertok, *Rockets and People* (Washington, DC: NASA SP-4110, 2005), pp. ix–xix.

78. See Iurii M. Baturin, ed., *Mirovaia pilotiruemaia kosmonavtika. Istoriia. Tekhnika. Liudi* (Moscow: RTSof, 2005), pp. 209–210.

and the actions of the crew in that incident. By letting an engineer tell his story unopposed, encyclopedia editors in effect presented a vary partial view of that controversy, placing the blame on the crew.<sup>79</sup> When a personal perspective is thus validated and becomes a major reference source, this “counter-memory” of a previously hushed-up episode literally turns into a new master narrative.

## THE NOSTALGIC POETICS OF POST-SOVIET SPACE MEMORY

In today’s Russia, which has lost its former Communist ideals and is still searching for a unifying “national idea,” Gagarin’s pioneering flight—the pinnacle of the Soviet space program—often stands as a symbol of history that the Russians could really be proud of, despite the trauma of losing the superpower status. “If we did not have Gagarin, we would not be able to look into each other’s eyes. It seems, we blew everything that we could. But we still have Gagarin. We will never lose him,” writes one Russian journalist. “Gagarin is the symbol of a Russian victory over the entire world. A symbol for ages to come. We don’t have another one and perhaps never will. Gagarin is our national idea.”<sup>80</sup>

Sociological studies confirm that the Russians today rank Gagarin’s flight as their second proudest historical achievement (91 percent), right after the victory in World War II (93 percent), and followed by Sputnik (84 percent).<sup>81</sup> Other Soviet symbols of national pride are falling far behind: the Stalin-era creation of the atomic and hydrogen bombs, the Khrushchev-era Virgin Lands campaign, and the Brezhnev-era Baikal-Amur giant railroad construction are all tainted by various historic revelations that cast a dark shadow over the former showcase projects.

The Russian space program occupies such a prominent place in collective memory that any critique of its past or present is often viewed as unpatriotic. The deorbiting of the *Mir* space station in March 2001 caused a public outcry. The loss of *Mir* was portrayed in the media as a major blow to the national psyche. Radical Communist opposition viewed the destruction of *Mir* as part of a sinister Western plot to bring down Russia, and accused President Putin of bowing to Western demands. Street protests were held, with signs reading, “Send the government to the bottom!” and “If you drown *Mir*, we’ll drown you!”<sup>82</sup>

79. For an alternative account by the Soyuz 15 crew see Mikhail Rebrov, “Gor’kii privkus slavy,” *Krasnaia zvezda* (September 9, 1994): 2; for an English translation, see “Cosmonauts Unfairly Blamed for Failure of Soyuz-15 Flight,” JPRS-USP-94-007 (October 5, 1994): 3.

80. Ivan Iudintsev, “Rossiia stremitsia v kosmos ... na skripuchei telege proshlykh uspekhov,” *HotCom.ru*, vol. 16 (April 12, 2001) (available at <http://www.hotcom.smi-nn.ru/main/art.phtml?id=5888>).

81. Russian Public Opinion Research Center, Press Release 612, January 18, 2007 (available at <http://wciom.ru/arkhiv/tematicheskii-arkhiv/item/single/3864.html>).

82. Vladimir Plotnikov, “Rubikon Prezidenta,” *Sovetskaia Rossiia* (March 22, 2001) (photo of street protests available at <http://sumpaket.webzone.ru/listwka.html>).



President Putin presents Gagarin's 1961 portrait by Nikolai But to the Cosmonaut Training Center head Petr Klimuk, Star City, April 12, 2001. (Photo from the author's collection)



Both critics of the government and government officials appealed to the public sentiment about space history, each side trying to claim historical memory in support of its legitimacy. The new, post-Soviet political leadership appropriated the image of Gagarin as its own ideological symbol, an emblem of national pride and technological prowess, and an inspiration for a superpower status. On April 12, 2001, on the 40th anniversary of Gagarin's flight and just three weeks after the de-orbiting of *Mir*, President Putin visited the Cosmonaut Training Center in Star City and gave a speech before the cosmonauts. The Center personnel prepared a special backdrop for Putin's speech—a giant, full-wall-size portrait of Gagarin in full regalia—a not-so-subtle message to the President, reminding him of the appreciation of cosmonauts' achievements by previous governments. For his part, Putin also showed historical sensitivity: he assured the cosmonauts that April 12—the Cosmonautics Day that was established to memorialize the date of Gagarin's flight—was celebrated not only by the cosmonauts, but by the entire country. To boost the cosmonauts' morale, which was at a historic low after the *Mir* demise, Putin brought them a gift. Apparently he concluded that nothing could be more valuable to the cosmonauts than reasserting the symbolic meaning of space memory, and he presented them with another portrait of Gagarin. The cosmonauts, in turn, handed the President their own gift: a watch with Gagarin's portrait on its face, and Putin immediately put it on.<sup>83</sup> By exchanging gifts, the President and the cosmonauts in effect exchanged their memories.<sup>84</sup> Both sides seemed keen to avoid confrontation over the present-day *Mir* controversy by reaffirming their connection with space history. This co-remembrance of the celebrated past of the Soviet space program reasserted their common identity as Russian heirs to the Soviet glory.

In post-Soviet culture, space history becomes part of what the cultural critic Natalia Ivanova has termed “no(w)stalgia”: neither condemnation nor idealization of the past, but its actualization as a symbolic language for discussing today's pressing issues. The “no(w)stalgic” audience turns into “a collective participant and a collective interpreter; a creator of a myth, a part of the myth, and a debunker of the myth; the living past and a trial of the past at the same time.”<sup>85</sup> The cultural anthropologist Serguei Oushakine has argued that the main task of “the postsocialist poetics of nostalgic clichés” is “to produce an already known and previously encountered effect of recognition, to evoke a shared experience, to point toward a common vocabulary of symbolic gestures”

83. V. Davydova et al., “40 let pervomu poletu cheloveka v kosmos!” *Novosti kosmonavtiki*, no. 6 (2001) (available at <http://www.novosti-kosmonavtiki.ru/content/numbers/221/01.shtml>).

84. On the Soviet tradition of gift-giving, particularly on gifts to political leaders, see *Dary vozhdiam / Gifts to Soviet Leaders*, edited by Nikolai Ssorin-Chaikov (Moscow: Pinakoteka, 2006).

85. Natalia Ivanova, *No\$tal'iashee: Sobranie nabliudeni* (Moscow, 2002), p. 62. See also Natalia Ivanova, “No(w)stalgia: Retro on the (Post)-Soviet Television Screen,” *The Harriman Review* 12:2-3 (1999): 25-32.

and thus to overcome “a peculiar post-Soviet stylistic block, a particular expressive deficiency of postsocialism.”<sup>86</sup> Old symbols become frames for entirely new meanings. When President Putin and the cosmonauts have to find a common language, both sides resort to nostalgic images of the past—Gagarin’s portraits—to convey their messages.

The Gagarin iconography was no longer tied to the specific meanings attached to it in the Soviet era; it became a shared language that could express a wide range of new meanings. In the early 1990s, youth culture appropriated space iconography for the widely popular “Gagarin Parties,” rave dance extravaganzas held at the Cosmos Pavilion in the famed Soviet Exhibition of People’s Economic Achievements in Moscow. Giant make-ups of rockets and spacecraft hung from the ceiling, an enormous portrait of Gagarin was specially produced to adorn the festivities, and real cosmonauts were invited to have drinks at the bar and to mingle with the crowd. Placing old Soviet memorabilia into a youth party context had a strange liberating effect: space symbols were no longer perceived as ideologically loaded emblems of Soviet propaganda or perestroika revisionism. “The juxtaposition of Soviet symbols with rave symbols, which may seem ironic and absurd,” writes the cultural anthropologist Alexei Yurchak, “in fact freed the symbolic meanings attached to Gagarin and the space program from their Soviet pathos and reinvented them, making them accessible for the new cultural production.”<sup>87</sup> Yurchak has suggested the metaphor of “sampling” to express the (re)use of Soviet symbolism in the post-Soviet culture. “As with house music—which is continuously remixed, sampled, and quoted in new contexts—here, former official symbols were also *remixed* and presented in new contexts and in a fresh, nonlinear format,” he writes. “Thus, the new ‘symbolic samples,’ containing quotes from past and recent Soviet meanings, were placed into a dynamic new context.”<sup>88</sup>

## RUSSIAN CAPITALISM AND THE SEMIOTICS OF SPACE

In the post-Soviet era, discourses of the past and of the present interact in complex ways. As the historian Martin Collins points out, the Global Age that we live in has both changed the cultural perception of spaceflight and shifted priorities for the Space Age. The meta-narrative of exploration no longer dominates the public image of spaceflight, and new large-scale space projects tend to involve global satellite communication systems, rather than ambitious

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86. Serguei Alex Oushakine, “‘We’re Nostalgic but We’re not Crazy’: Retrofitting the Past in Russia,” *The Russian Review* 66:3 (July 2007): 469, 481.

87. Alexei Yurchak, “Gagarin and the Rave Kids: Transforming Power, Identity, and Aesthetics in the Post-Soviet Night Life,” in *Consuming Russia: Popular Culture, Sex, and Society Since Gorbachev*, edited by A. Baker (Durham, NC: Duke University Press, 1999), p. 94.

88. *Ibid.*, p. 95.



human spaceflight endeavors. Instead of leading humanity away from Earth into the enchanting Unknown, space projects now connect disparate parts of Earth, changing the very terms in which we discuss culture in general and Space Age culture in particular.<sup>89</sup>

Collins draws our attention to the semiotic nature of new discursive regimes: cultural symbols do not simply represent things, they act. They create a “second nature” environment in which new identities emerge and a new form of cultural power competes with and reshapes old political and institutional structures. Thus culture cannot be seen as a mere gloss on the rough surface of the crude machinery of technological innovation, economic pressures, and political decision-making. Culture is an actor in its own right—an instrument of innovation, a tool of profit-making, and the stuff politics is made of.

Both capitalism and communism manipulated with symbols: capitalism made semiotics an essential part of marketing, while communism incorporated it into daily ideological indoctrination. Both generated mass production and mass consumption of symbols; any public representation sold something, be it a product or an ideological dogma. Communist propaganda officials dealt with some of the same issues as corporate marketing executives.

In post-Soviet Russia, the cultural heritage of the decades of the communist rule clashes with the newly developing capitalist culture. Russian advertising campaigns today often skillfully combine old Soviet symbolism with “new Russian” capitalist values. To what Collins has called the “mix of semiotics, capitalism, spaceflight, and the global and the local” they add the spectacularity of space symbols of the Soviet superpower, which are fashionable among the young and nurture the nostalgic feelings of the old. In the summer of 2006, the cell phone provider MTS launched a billboard campaign in Moscow, promoting its new “Number One” calling plan. The billboard depicted a cosmonaut in a spacesuit happily using a cell phone in space. Accompanied by a television advertisement with the slogan “Be Number One!”, this blunt attempt to brand the company as the industry leader drew on the popular Russian association of the cosmonaut image with Gagarin, the “Number One” cosmonaut. In a truly postmodern fashion, the billboard message also had a self-mocking twist: the cosmonaut was wearing space gloves, which of course made it impossible to punch keys on the phone. Thus the advertisement pretended not to be an advertisement at all, but rather an invitation to the viewer to play a semiotic game, sorting out contradictory signifiers.

The mixed feelings of pride for the glorious space achievements of the past, shame for losing the superpower status, and the mockery of both pride and shame as ideological constructs provided a fertile ground for the semiotic interplay of past/present, reality/simulation, and truth/advertising. The

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89. See Collins's article in this volume.



A billboard advertisement of the “Number One” cell phone calling plan by the MTS company in the streets of Moscow, June 2006. (Photo from the author’s collection)

ostentatious self-awareness of the simulated reality of advertising was taken to a new level in a series of MTS television ads that followed the “Number One” billboard campaign. Those ads first depicted a cosmonaut talking on a cell phone during preparations for a takeoff, but then a wider camera shot gradually revealed that the action was actually happening at a movie set being prepared for shooting a takeoff scene.<sup>90</sup> In a sly reference to the popular conspiracy theories about entire space missions staged on a movie set, these ads again invited the viewer to blur the boundary between reality and simulation, between an advertisement and a game, and between space history and today’s marketplace.

Global satellite communication and positioning systems are increasingly integrated into the Russian economy, but their political and cultural ramifications remain peculiar to Russian society and are burdened with the remembrance of the Soviet past. As late as 1999, there still was no legal framework for using global positioning systems in Russia. In 1998, a batch of Volkswagen cars was reportedly not permitted for sale in Russia, because they were equipped with

90. See Dmitrii Kozlov, “MTS: O iaitsakh, tarifakh, sovetskoi simvolike i butaforskikh kosmonavtakh,” *Reklamnye idei*, no. 5 (2006) (available at <http://www.advi.ru/page.php3?id=287>, including one of the television ads).

GPS receivers.<sup>91</sup> In 2001 the Russian authorities decided to build a Russian rival to GPS, and they revitalized the stalled military project called GLONASS (GLOBAL Navigation Satellite System), now broadening its use for civilian purposes. In May 2007, President Putin signed a decree authorizing free and open access to the civilian navigation signals of the GLONASS system to both Russian and foreign customers.<sup>92</sup> After adding three satellites in December 2007, GLONASS would soon provide almost complete coverage of the Russian territory. According to the planners, GLONASS should reach global coverage by 2010. The Russian authorities counted that foreign consumers, especially in the Middle East and South East Asia, would be interested in having access to an alternative to the U.S.-controlled GPS.<sup>93</sup>

Instead of fostering a sense of global unity, satellite navigation systems in the Russian context are becoming a subject of international technological competition, a tool of political influence, and a vehicle for boosting national pride. U.S.-Russian negotiations on achieving technical compatibility and interoperability between GPS and GLONASS progress very slowly. In the meantime, the Russian Ministry of Industry has proposed limiting the sales in Russia of GPS receivers that were not compatible with GLONASS.<sup>94</sup> Official policies toward global navigation systems in Russia seem to fall back on the old Soviet stereotype of national isolationism. In March 2007, Putin held a meeting of the State Council in Kaluga, the town nicknamed “the birthplace of cosmonautics” where Tsiolkovskii spent most of his life and produced his most important works. Having reestablished historical links with Tsiolkovskii’s visions of space exploration, Putin instructed the Council members that GLONASS “must work flawlessly, be less expensive, and provide better quality than GPS.” He expressed his confidence that Russian consumers would show “healthy economic patriotism” and prefer GLONASS over GPS.<sup>95</sup> In December 2007, the first batch of dual-signal GPS/GLONASS traffic navigators was quickly sold out in Moscow stores at \$570 a piece, several months before the customers could take full advantage of GLONASS capabilities.<sup>96</sup>

91. V. Koliubakin, “‘Iridium’—presentatsiia v Sankt-Peterburge,” *Tele-Sputnik*, no. 3(41) (March 1999) (available at <http://www.telesputnik.ru/archive/41/article/40.html>).

92. Novosti Russian News and Information Agency report, May 18, 2007 (available at <http://rian.ru/technology/innovation/20070518/65722212.html>).

93. Novosti Russian News and Information Agency report, December 26, 2007 (available at <http://www.rian.ru/technology/connection/20071226/94147340.html>).

94. Anton Bursak, “Minprom zashchitit GLONASS, ogranichiv vvoz GPS-ustroistv,” *RBK Daily*, February 22, 2007 (available at <http://www.rbcdaily.ru/print.shtml?2007/02/22/media/266488>).

95. Viktor Litovkin, “GLONASS ishchet oporu na zemle,” FK Novosti Information Agency report, April 2, 2007 (available at <http://www.fcinfo.ru/themes/basic/materials-document.asp?folder=1446&ematID=134457>).

96. PRIME-TASS Business News Agency report, December 27, 2007 (available at <http://www.prime-tass.ru/news/show.asp?id=746309>).

For individual Russian users, an “eye in the sky” often evoked Soviet-era cultural memories of total surveillance. In October 2007, General Nikolai Patrushev, the head of the FSB (the successor to the KGB), announced plans for a nationwide system of traffic control. Under the banner of fighting terrorism, the FSB intended to implement a system of monitoring individual motor vehicles on the Russian territory. Technical details of the new system were not revealed, but it was implied that it might involve the use of satellites for positioning and communication. Journalists quickly gathered initial negative reactions to the news: “it’s an invasion of privacy”; “this smells like a violation of constitutional rights of citizens”; and “any surveillance brings up bad memories of Stalin’s totalitarian system.”<sup>97</sup> At the same time, individual users seemed quite willing to use GPS devices to track the movements of their own children.<sup>98</sup>

A shift in priorities from space exploration to satellite applications is clearly reflected in the Russian public opinion. In an April 2005 poll, the highest number of respondents (52 percent) said that scientific research and the development of advanced technologies should be a top priority of the Russian space program, and 44 percent supported defense applications. 17 percent mentioned the importance of space achievements for international prestige, and only 1–4 percent prioritized missions to the Moon and Mars, search for extraterrestrial civilizations, and space tourism.<sup>99</sup> Ambitious projects of space exploration serve as a token of memory, an emblem of the “no(w)stalgic” past, but they no longer dominate the cultural production of the present.

## CONCLUSION

The Space Age both reinforced cultural boundaries—through the Cold War imagery and rhetoric—and blurred them through the emerging sense of the global. It produced vivid memories and engaging stories; individual retelling of these stories and collective propaganda projects of remembrance gradually turned historical events into mythological epics, shaping the identity of generations. The “Sputnik generation” of Russian citizens, who grew up in the 1950s, in recent interviews acknowledged the formative role of the key events of the Space Age, but had little personal recollection of their reaction

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97. Andrei Kozlov, “Voditeli popali pod podozrenie,” *Vzgliad*, October 16, 2007 (available at <http://www.vz.ru/society/2007/10/16/117887.html>).

98. A. Kuznetsov, Report on testing the S-911 Personal Locator (available at [http://gps-club.ru/gps\\_think/detail.php?ID=8057](http://gps-club.ru/gps_think/detail.php?ID=8057)).

99. Russian Public Opinion Research Center, Press Release 187, April 11, 2005 (available at <http://wciom.ru/arkhiv/tematicheskii-arkhiv/item/single/1181.html>).

to Sputnik or Gagarin's flight.<sup>100</sup> In order to remember, we have to create our memories. And we create them out of the myths and symbols of our culture.

Cultural myths should not be seen merely as distorted memories. It is precisely these "distortions," cultural adaptations and appropriations of symbols, that give cultures their individuality, their unique character, and distinct perspective. Just as one's personal memories reveal more about one's current identity than about one's past, historical myths provide a valuable insight into the culture that produces them. At the intersection of space history and cultural history, the semiotics of Space Age remembrance ties together individual memory and collective myth, the materiality of objects and the pliability of symbols, the authenticity of fantasy and the deceptive nature of truth.

There can be no "true" memory, as any act of recollection reconstitutes our memories. As different cultures remember the Space Age, it keeps changing, revealing new symbolic meanings and providing an inexhaustible source of study for historians. By shifting the focus from debunking myths to examining their origins and their constructive role in culture, we can understand memory as a dynamic cultural force, not a static snapshot of the past.

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100. Donald J. Raleigh, tran. and ed., *Russia's Sputnik Generation: Soviet Baby Boomers Talk about Their Lives* (Bloomington, IN: Indiana University Press, 2006).