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CROSS-CULTURAL COMMUNICATION IN THE ASTRONAUT COMMUNITY

The article explores linguistic and cultural aspects of astronaut communication within international missions. It focuses on the International Space Station (ISS) as a multilingual environment where English and Russian serve as operational languages. The study discusses the historical context, current communication practices, the emergence of hybrid forms such as Runglish, and the vital role of non-verbal interaction. The contribution of Belarus to space exploration is highlighted, emphasizing Marina Vasilevskaya's 2024 mission as an example of effective cross-cultural collaboration.

Keywords: cross-cultural communication, astronauts, ISS, non-verbal communication, Belarus, Runglish.

Space exploration has long fascinated humanity — not only for its scientific potential but also for its ability to unite people across borders. As international missions become more frequent, the need for effective communication among astronauts from different linguistic and cultural backgrounds becomes increasingly vital. This paper explores the linguistic and cultural dimensions of astronaut communication, with a focus on the International Space Station (ISS). It examines the historical context, current practices, non-verbal strategies, and the emergence of hybrid languages such as Runglish. Belarus has made significant contributions to space science, both historically and in modern times. The journey began with Kazimir Semenovich, a 17th-century engineer who described multi-stage rockets in his treatise “The Great Art of Artillery”. His work laid the foundation for future developments in rocketry. In the 20th century, Belarusian-born scientists Semyon Kosberg and Boris Kit played key roles in space technology. Kosberg's engines powered the “Vostok” spacecraft, enabling Yuri Gagarin's historic flight, while Kit's research on liquid hydrogen was crucial to the “Apollo” missions. Belarus also produced Soviet cosmonauts Pyotr Klimuk and Vladimir Kovalenok, who participated in “Soyuz” missions, reinforcing the country's legacy in space exploration. Modern efforts include the launch of “BelKA-2” and “BSUSAT-1” satellites, and in 2023, “BSUSAT-2” expanded Belarus's orbital presence. A landmark achievement came in 2024, when Marina Vasilevskaya became the first Belarusian woman to fly to the ISS, collaborating with Russian and American astronauts—an embodiment of cross-cultural cooperation.

As S. Johnson notes, “The ability to navigate cultural differences and communicate effectively is not just beneficial but essential for the success of international space missions”.

The ISS hosts astronauts from various countries, making seamless communication a necessity. Belarusian cosmonauts like Oleg Novitsky have exemplified this through successful collaboration with international teams. Historically, early space missions relied on one-way radio communication, with minimal linguistic diversity. The construction of the ISS introduced multilingual crews, and English and Russian became the standard operational languages. Technological advancements now allow real-time audio, video, and text-based communication, enhancing coordination across agencies.

Astronauts undergo language training to ensure fluency in both English and Russian. They also learn standardized mission terminology — known as “mission lexicon” — to reduce ambiguity. These terms are universally recognized and critical for safety and efficiency.

Examples include expressions such as: *activating the life support system* ‘активация системы жизнеобеспечения’ and *conducting equipment check* ‘провожу проверку оборудования’.

Non-verbal communication plays a vital role aboard the ISS, especially in noisy environments or when astronauts wear helmets and suits that limit speech. According to O. Novitsky, “Non-verbal communication plays an integral role in fostering trust and cohesion among multinational crews, compensating for linguistic gaps”.

Astronauts use gestures, facial expressions, tone, posture, and eye contact to convey meaning. For example, *a thumb-up* ‘signals approval’, while *pointing* ‘indicates direction’. Facial expressions such as smiles can reduce stress, and vocal cues like pitch and volume convey urgency or emotional state. Body positioning also matters. Open posture suggests engagement, while closed posture may indicate discomfort. Spatial awareness is crucial in the confined ISS environment, helping maintain respectful boundaries. Eye contact demonstrates attention and serves as feedback, though cultural norms may influence its use. Teams develop pre-established signals for tasks and emergencies. These include gestures for ‘wait’ or ‘proceed’, which are essential when verbal communication is difficult.

The effective cross-cultural communication remains central to mission success aboard the ISS. As space exploration expands to involve more nations, intercultural competence and linguistic flexibility will become even more critical. Belarus’s participation through figures like Marina Vasilevskaya exemplifies how smaller nations can meaningfully contribute to this global endeavor.