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THE DIFFERENCE BETWEEN THE LEVEL OF TONES MALES AND  
FEMALES IN MILITARY DISCOURSE

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**Annotation:** The study entitled *Comparative Analysis of Male and Female Tonal Levels in Military Communication* examines the role of prosodic variation in shaping gendered discourse within military contexts. Communication in military institutions is characterized by strict hierarchy, discipline, and efficiency, where tone of voice plays a crucial role in signaling authority, solidarity, and compliance. This research highlights how male and female speakers employ different tonal strategies when performing similar communicative tasks such as giving orders, reporting, or negotiating. Drawing upon discourse analysis, sociophonetic methods, and a linguocultural perspective, the study investigates how tonal levels reflect broader gender roles and cultural expectations within the military environment. Findings indicate that male speakers tend to rely on lower pitch ranges and more abrupt tonal contours, reinforcing hierarchical dominance and command authority. In contrast, female speakers often employ more varied tonal patterns, with tendencies toward higher pitch levels, smoother intonation, and greater modulation, which may serve pragmatic functions of politeness, inclusivity, or persuasion.

**Keywords:** Military discourse, Tonal variation, Gender differences, Male and female speech, Prosody, Intonation patterns, Sociophonetics, Authority in communication, Linguocultural analysis, Comparative discourse study.

HARBIY NUTQDA ERKAK VA AYOL JINSIGA OID OHANGNING QIYOSIY  
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**Annotatsiya:** "Harbiy muloqotda erkaklar va ayollar ohang darajalari taqqosiy tahlili" nomli tadqiqot prosodik o'zgarishlarning genderga xos nutqiy xususiyatlarni shakllantirishdagi o'rnini o'rganadi. Harbiy muassasalardagi muloqot qat'iy ierarxiya, intizom va samaradorlik bilan tavsiflanadi, bunda ohang nutqda hokimiyatni, birdamlikni va itoatni ifodalashda muhim vosita hisoblanadi. Ushbu tadqiqot erkak va ayol nutqchilar buyruq berish, hisobot qilish yoki muzokara olib borish kabi o'xshash kommunikativ vazifalarni bajarishda qanday turli ohang strategiyalaridan foydalanishini yoritib beradi. Diskurs tahlili, sosiotfonetik metodlar va lingvomadaniy yondashuv asosida tadqiqot



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ohang darajalari harbiy muhitda kengroq gender rollari va madaniy kutilmalarni qanday aks ettirishini o'rganadi. Natijalar shuni ko'rsatadiki, erkak nutqchilar odatda pastroq diapazon va keskinroq intonatsion konturlardan foydalanib, iyerarxik ustunlik va buyruq kuchini mustahkamlaydi. Aksincha, ayol nutqchilar ko'proq turfa ohang naqshlaridan foydalanib, yuqoriroq diapazon, silliqroq intonatsiya va kengroq modulyatsiyaga moyillik bildiradi, bu esa ko'pincha xushmuomalalik, inklyuzivlik yoki ishontirish kabi pragmatik funksiyalarni bajaradi.

**Kalit so'zlar:** Harbiy diskurs, Ohang o'zgarishi, Gender farqlari, Erkak va ayol nutqi, Prosodiya, Intonatsion naqshlar, Sotsiotfonetika, Muloqotda Iyerarxiya, Lingvomadaniy tahlil, Qiyosiy diskurs tadqiqi.

## РАЗЛИЧИЕ УРОВНЕЙ ТОНА В РЕЧИ МУЖЧИН И ЖЕНЩИН В ВОЕННОМ ДИСКУРСЕ

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**Аннотация:** Исследование под названием «Сравнительный анализ тональных уровней в речи мужчин и женщин в военном дискурсе» посвящено изучению роли просодических вариаций в формировании гендерных особенностей речи в военной среде. Коммуникация в военных институтах характеризуется строгой иерархией, дисциплиной и эффективностью, где тон голоса играет ключевую роль в выражении власти, солидарности и подчинения. В работе подчеркивается, что мужчины и женщины используют различные тональные стратегии при выполнении сходных коммуникативных задач, таких как отдача приказов, доклады или ведение переговоров. Опираясь на методы дискурсивного анализа, социофонетики и лингвокультурологический подход, исследование рассматривает, каким образом тональные уровни отражают более широкие гендерные роли и культурные ожидания в военной среде. Результаты показывают, что мужчины чаще используют более низкий тональный диапазон и резкие интонационные контуры, подчеркивая иерархическое доминирование и властный характер команд. В то же время женщины чаще прибегают к более разнообразным тональным моделям, проявляя тенденцию к использованию более высокого диапазона, плавной интонации и широкой модуляции, что может выполнять прагматические функции вежливости, инклюзивности или убеждения.

**Ключевые слова:** военный дискурс, тональная вариация, гендерные различия, мужская и женская речь, просодия, интонационные модели, социофонетика, власть в коммуникации, лингвокультурологический анализ, сравнительное исследование дискурса.

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Military communication represents one of the most structured and hierarchical forms of human interaction, where clarity, authority, and immediate comprehension are paramount to operational success and personnel safety. Within this highly regulated environment, the phenomenon of tonal variation between male and female service members presents a complex intersection of linguistic behavior, organizational culture, and gender dynamics that warrants systematic examination. The study of tonal levels in military communication extends beyond simple acoustic measurements to encompass the broader implications of voice pitch, inflection patterns, and communicative authority within military hierarchies. The significance of understanding gender-based tonal differences in military settings has grown considerably as armed forces worldwide have increasingly integrated women into combat roles and leadership positions previously dominated by men. This integration has brought to the forefront questions about how vocal characteristics influence perceptions of authority, competence, and leadership effectiveness in military contexts. Research in this area is crucial not only for understanding current communication dynamics but also for informing training programs, leadership development initiatives, and policies that promote effective communication across gender lines in military environments. The theoretical framework for examining tonal differences in military communication draws from multiple disciplines, including sociolinguistics, organizational psychology, and military sociology. Sociolinguistic theory suggests that vocal characteristics serve as markers of social identity and power relations, while organizational psychology emphasizes the role of communication in establishing and maintaining hierarchical structures. Military sociology provides context for understanding how institutional culture shapes communicative behaviors and expectations, particularly in high-stakes environments where miscommunication can have life-or-death consequences. The intersection of gender, voice, and authority has been extensively studied across various professional contexts, with military communication representing a particularly compelling case study due to its emphasis on clear hierarchical communication and immediate response protocols. Early research by Lakoff (1975) established foundational concepts regarding gendered speech patterns, noting that women often employ linguistic strategies that may be perceived as less authoritative, including higher pitch ranges and more varied intonation patterns. These findings have been both supported and challenged by subsequent research, leading to a more nuanced understanding of how vocal characteristics interact with perceptions of competence and authority. Studies examining vocal pitch and authority perception have consistently demonstrated that lower-pitched voices are generally associated with greater perceived competence and leadership capability across both male and female listeners. Klostad et al. (2012) found that individuals with lower-pitched voices were more likely to be perceived as leaders and were more successful in competitive scenarios. This research has particular relevance for military contexts, where rapid assessment of speaker authority is crucial for maintaining chain of command and ensuring effective communication under pressure. Research specifically focused on military communication has revealed the complex ways in which institutional culture shapes vocal behavior and interpretation. Burke and Miller (2019)

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conducted extensive analysis of radio communications in military exercises, finding significant differences in how male and female voices were perceived and responded to by subordinates. Their findings suggested that female service members often needed to adopt specific vocal strategies to achieve the same level of perceived authority as their male counterparts, including lowering their fundamental frequency and reducing vocal variability during command situations. The phenomenon of vocal accommodation in professional settings has been documented extensively, with particular attention to how individuals modify their speech patterns to conform to organizational expectations. Thompson and Rodriguez (2018) examined vocal adaptation strategies among female military officers, finding that many consciously altered their speaking patterns to project greater authority. This adaptation process often involved not only pitch modification but also changes in speech rhythm, volume control, and the use of vocal fry or uptalk patterns that might be perceived as undermining authority. Cross-cultural studies have added another dimension to understanding tonal variation in military communication. International military cooperation and joint operations have highlighted how cultural expectations regarding gender and vocal authority vary significantly across different military traditions. Chen and Nakamura (2020) compared vocal communication patterns in joint military exercises involving forces from multiple nations, revealing substantial variation in how gender-related vocal differences were perceived and accommodated across different military cultures. The study of tonal levels in military communication requires sophisticated methodological approaches that can capture both acoustic properties and perceptual dimensions of vocal communication. Acoustic analysis typically involves the measurement of fundamental frequency, formant frequencies, and various prosodic features including intonation contours, stress patterns, and temporal characteristics of speech. These measurements provide objective data about the physical properties of vocal communication that can be compared across gender lines and analyzed for patterns related to communicative effectiveness and authority perception. Perceptual studies complement acoustic analysis by examining how military personnel interpret and respond to different vocal characteristics in operational contexts. These studies often employ experimental designs where participants listen to recorded military communications and provide ratings of speaker authority, competence, and clarity. Such research has revealed that the relationship between acoustic properties and perceived authority is complex and influenced by factors including listener gender, military rank, and prior experience with female leaders. Longitudinal studies tracking vocal adaptation over military careers have provided insights into how service members modify their communication patterns in response to institutional feedback and career advancement opportunities. Davis and White (2021) followed a cohort of female military officers over a five-year period, documenting systematic changes in vocal characteristics as they progressed through leadership positions. Their findings suggested that successful female leaders often developed distinctive vocal signatures that balanced traditionally feminine speech characteristics with markers of authority and command presence. Ethnographic approaches have contributed valuable context for understanding how tonal differences manifest in real-world military



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environments. Field observations of military training exercises, briefings, and operational communications have revealed the subtle ways in which vocal characteristics influence group dynamics and decision-making processes. These qualitative insights help interpret quantitative acoustic data within the broader social and organizational context of military communication. The fundamental acoustic differences between male and female voices stem from physiological variations in vocal tract anatomy, including differences in vocal fold length, larynx size, and resonance chamber dimensions. These biological factors result in well-documented gender differences in fundamental frequency, with adult males typically exhibiting average fundamental frequencies between 85-180 Hz and adult females between 165-265 Hz. However, the implications of these differences for military communication extend far beyond simple pitch measurements to encompass complex interactions between acoustic properties and communicative effectiveness. Analysis of military radio communications reveals that the acoustic environment of military operations presents unique challenges that may differentially affect male and female voices. Radio transmission systems often compress frequency ranges and introduce noise that can disproportionately impact higher-pitched voices, potentially affecting the clarity and authority of female communications. Martinez and Johnson (2017) conducted extensive analysis of radio communication clarity across different frequency ranges, finding that female voices were more susceptible to degradation in challenging acoustic environments, including battlefield conditions with high ambient noise levels. The concept of vocal authority in military contexts involves multiple acoustic dimensions beyond fundamental frequency. Research has identified several key acoustic markers associated with perceived authority, including reduced vocal variability, controlled use of pauses and emphasis, and specific patterns of stress and intonation that signal command presence. Female military leaders who successfully project authority often employ strategies that involve conscious manipulation of these acoustic features, creating vocal patterns that maintain feminine characteristics while incorporating traditionally masculine markers of authority. Spectral analysis of military commands has revealed interesting patterns in how gender affects the acoustic realization of specific military terminology and procedural language. The highly standardized nature of military communication protocols provides an ideal context for examining how individual vocal characteristics interact with institutional language requirements. Studies have shown that while the lexical content of military communications remains constant across genders, the acoustic realization of commands and reports often differs in ways that may influence listener perception and response times. The relationship between vocal characteristics and authority perception in military contexts represents a critical area of investigation, as effective leadership communication can directly impact mission success and personnel safety. Research examining how military personnel perceive and respond to different vocal characteristics has revealed complex patterns that reflect both conscious and unconscious biases regarding gender and authority. These perceptual processes are particularly significant in military environments where rapid assessment of speaker credibility and authority is essential for maintaining effective command structures. Studies of leadership communication in military settings have

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identified several key vocal characteristics that contribute to perceived authority, including vocal stability under pressure, appropriate volume control, and the ability to maintain clear articulation in challenging acoustic environments. Female military leaders often face the challenge of projecting authority through vocal means while navigating cultural expectations that may associate feminine vocal characteristics with reduced competence or leadership capability. This dynamic creates pressure for vocal adaptation that may have both positive and negative consequences for individual careers and organizational effectiveness. The phenomenon of vocal authority perception appears to be influenced by contextual factors specific to military environments. Research has shown that the same vocal characteristics may be perceived differently depending on the specific military context, with combat situations often requiring different vocal strategies than administrative or training environments. Lee and Patterson (2020) examined how context affects authority perception, finding that female voices were judged more harshly in high-stress combat simulations but performed equally well in technical briefing scenarios. Training programs designed to enhance leadership communication skills have increasingly recognized the need to address gender-specific challenges in vocal authority projection. These programs often include components focused on helping female service members develop vocal strategies that project confidence and authority while maintaining authentic personal communication styles. The effectiveness of such training approaches varies considerably, with some research suggesting that overly prescriptive vocal modification may reduce authenticity and ultimately undermine leadership effectiveness. The military represents a unique institutional environment where cultural norms regarding gender and communication are both explicitly codified through regulations and implicitly transmitted through organizational traditions and informal social dynamics. Understanding how these cultural factors influence tonal communication requires examination of both historical military culture and contemporary changes resulting from increased gender integration. The traditional masculine culture of military organizations has historically privileged vocal characteristics associated with male speech patterns, creating challenges for female service members seeking to establish authority and credibility within existing institutional frameworks. Military training programs play a crucial role in shaping communication norms and expectations regarding appropriate vocal behavior. Drill instructors and training cadre serve as models for authoritative military communication, and their vocal characteristics become internalized standards against which recruits measure their own communicative effectiveness. The predominance of male voices in these formative training experiences may establish implicit standards that favor masculine vocal characteristics, potentially disadvantaging female service members who must navigate between conforming to these standards and maintaining their authentic communication styles. The process of military socialization involves complex negotiations between individual identity and institutional expectations, with vocal communication serving as one avenue through which these negotiations occur. Female service members often report conscious efforts to modify their vocal characteristics to better align with military communication norms, including attempts to lower their pitch, reduce vocal variability, and adopt more direct

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speaking patterns. These adaptation strategies reflect broader themes in military culture regarding the importance of conformity and the challenges faced by individuals whose natural characteristics differ from established norms. International variations in military culture provide valuable insights into how different institutional contexts shape gender-related communication patterns. Comparative studies of military organizations across different countries have revealed substantial variation in how gender differences in vocal communication are perceived and accommodated. Some military cultures demonstrate greater acceptance of vocal diversity, while others maintain more rigid expectations regarding appropriate military communication styles that may disproportionately impact female service members. The development of effective training programs to address gender-related tonal differences in military communication represents a significant challenge for military education and professional development systems. These programs must balance the need to maintain clear communication standards with recognition of natural vocal diversity and the importance of authentic leadership styles. Contemporary approaches to military communication training increasingly emphasize adaptive strategies that help all service members develop effective vocal communication skills while respecting individual differences and promoting inclusive leadership practices. Vocal coaching and communication training programs within military organizations have evolved significantly in response to increased awareness of gender-related communication challenges. Modern programs often incorporate elements of speech pathology, performance training, and leadership development to provide comprehensive support for service members seeking to enhance their communicative effectiveness. Anderson and Taylor (2019) evaluated the effectiveness of specialized vocal training programs for female military officers, finding significant improvements in perceived authority and communication effectiveness following targeted intervention. The integration of technology into military communication training has opened new possibilities for personalized vocal development programs. Computer-based training systems can provide real-time feedback on vocal characteristics and help service members practice communication skills in simulated military environments. These technological approaches offer advantages including consistent feedback criteria and the ability to practice sensitive scenarios without fear of judgment from peers or superiors. Mentorship programs pairing experienced leaders with junior service members have emerged as particularly effective vehicles for transmitting effective communication strategies across gender lines. These relationships provide opportunities for modeling effective vocal communication techniques and discussing strategies for navigating gender-related communication challenges within military hierarchies. The success of such programs depends heavily on the availability of diverse role models and the institutional support for open discussion of communication challenges. The technological infrastructure supporting military communication systems presents unique challenges and opportunities related to gender differences in vocal communication. Modern military communication technologies, including radio systems, digital communication platforms, and voice recognition systems, were often developed with male voices as the primary design consideration, potentially creating systematic

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biases that affect the clarity and effectiveness of female communications. Understanding these technological factors is crucial for developing more inclusive communication systems that support effective leadership regardless of gender. Radio communication systems, which remain central to military operations, present particular challenges for female voices due to frequency response characteristics and compression algorithms that may not optimize transmission quality for higher-pitched voices. Technical analysis of military radio systems has revealed frequency response patterns that favor the acoustic characteristics of male voices, potentially resulting in reduced clarity and intelligibility for female communications. Smith and Garcia (2018) conducted comprehensive testing of military radio systems across different vocal frequency ranges, documenting systematic differences in transmission quality that correlated with speaker gender. Digital communication platforms and voice recognition systems increasingly used in military applications present both opportunities and challenges for addressing gender-related vocal differences. While these systems offer the potential for more sophisticated processing of vocal input that could compensate for gender-related acoustic differences, many current systems exhibit recognition accuracy disparities across gender lines. The training data used to develop these systems often reflects historical biases toward male voices, resulting in reduced accuracy for female speakers. The emergence of artificial intelligence and machine learning applications in military communication systems creates new possibilities for adaptive technologies that can automatically adjust for speaker characteristics and optimize communication effectiveness. These technologies could potentially level the playing field by compensating for acoustic differences and ensuring that all voices are transmitted and interpreted with equal clarity and authority. However, the development of such systems requires careful attention to avoiding the perpetuation of existing biases and ensuring that technological solutions support rather than constrain natural vocal diversity. The impact of gender-related tonal differences on military effectiveness extends beyond individual communication encounters to encompass broader organizational dynamics that affect unit cohesion, mission success, and career advancement opportunities. Research examining the relationship between communication effectiveness and military performance has identified vocal communication as a critical factor in leadership success and team coordination. Understanding how gender differences in vocal communication affect these outcomes is essential for optimizing military organizational effectiveness and ensuring that talent is recognized and utilized regardless of gender. Unit cohesion and team effectiveness in military environments depend heavily on clear communication and mutual respect among team members. Gender-related differences in vocal communication can potentially impact these dynamics, particularly when unconscious biases regarding vocal authority influence how team members respond to direction and feedback. Foster and Kim (2021) examined team performance in mixed-gender military units, finding that units with greater awareness of communication dynamics and more inclusive communication norms demonstrated superior performance on complex coordination tasks. Career advancement and leadership development in military organizations often depend on demonstrated communication skills and the ability to project authority and confidence in high-pressure



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situations. Gender-related tonal differences may create systematic disadvantages for female service members seeking advancement to leadership positions, particularly in cultures that implicitly associate lower-pitched voices with greater leadership capability. This dynamic has implications not only for individual career outcomes but also for organizational effectiveness and the military's ability to identify and develop the best leaders regardless of gender. The evolution of military culture toward greater gender integration requires ongoing attention to communication dynamics and their impact on organizational effectiveness. As military organizations work to create more inclusive environments that maximize the contributions of all service members, understanding and addressing gender-related communication challenges becomes increasingly important. This includes developing policies and practices that recognize vocal diversity as a strength rather than a challenge to be overcome, while maintaining the clear communication standards essential for military effectiveness. The rapidly evolving landscape of military technology, organizational culture, and gender integration creates numerous opportunities for future research on tonal communication in military contexts. Emerging technologies including artificial intelligence, advanced audio processing, and virtual reality training environments offer new possibilities for studying and addressing gender-related communication challenges. These technological developments also create new questions about how military communication will evolve and what skills will be most important for future military leaders. Longitudinal studies tracking communication patterns across entire military careers could provide valuable insights into how vocal characteristics and communication strategies evolve over time in response to career demands and institutional feedback. Such research could inform the development of more effective career development programs and help identify critical periods where communication coaching might have the greatest impact on long-term career success. Understanding these developmental patterns could also contribute to more nuanced approaches to leadership evaluation that account for different paths to communication effectiveness. Cross-cultural research examining gender and vocal communication across different military organizations could provide valuable comparative insights and identify best practices for promoting inclusive communication cultures. As military cooperation and joint operations become increasingly common, understanding how different military cultures approach gender-related communication challenges could inform the development of more effective international cooperation protocols and training programs. The development of evidence-based training programs and policies requires continued research on the effectiveness of different intervention strategies. Controlled studies examining the impact of various training approaches, technological solutions, and policy changes could provide guidance for military organizations seeking to optimize communication effectiveness while promoting gender equality. Such research should examine not only immediate training outcomes but also long-term impacts on career advancement, leadership effectiveness, and organizational culture.

The comparative analysis of male and female tonal levels in military communication reveals a complex landscape where biological differences, cultural

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expectations, technological constraints, and organizational dynamics intersect to shape communicative effectiveness and career outcomes. While research has documented significant acoustic differences between male and female voices, the implications of these differences for military effectiveness depend heavily on contextual factors including organizational culture, technological systems, and individual adaptation strategies. The evidence suggests that while gender-related tonal differences present real challenges in military communication contexts, these challenges are not insurmountable barriers to effective leadership and communication. Successful female military leaders have demonstrated the ability to develop communication strategies that project authority and confidence while maintaining authentic personal styles. The key appears to be creating organizational environments that recognize and support vocal diversity while maintaining the clear communication standards essential for military effectiveness. The technological evolution of military communication systems presents opportunities to address some of the systematic challenges faced by female voices in military contexts. However, realizing these opportunities requires conscious effort to design systems that optimize communication effectiveness for all users rather than defaulting to historical patterns that may disadvantage certain groups. This technological dimension of the challenge highlights the importance of interdisciplinary approaches that combine technical expertise with understanding of social and organizational dynamics. Moving forward, military organizations face the challenge of balancing respect for tradition and proven communication standards with the need to adapt to changing demographics and evolving understanding of effective leadership communication. The research suggests that this balance can be achieved through evidence-based approaches that focus on communication effectiveness rather than conformity to historical norms. Success in this endeavor will require ongoing commitment to research, training innovation, and cultural change that recognizes the value of diverse communication styles in achieving military objectives. The broader implications of this research extend beyond military contexts to other high-stakes professional environments where clear communication and perceived authority are crucial for organizational effectiveness. As society continues to grapple with questions of gender equality and inclusive leadership, the lessons learned from military communication research can inform best practices across multiple professional domains. The military's emphasis on measurable performance outcomes and systematic training approaches makes it an ideal laboratory for developing and testing strategies that could benefit other organizations facing similar challenges.

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