



## Examining Color Recognition in the Kurdish Language: A Sociolinguistic Perspective

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Received: Mar 21, 2024

Reviewed: Apr 4, 2024

Accepted: May 13, 2024

### Abstract

This study employs a cross-sectional research design to explore color recognition among Kurdish participants, encompassing individuals from various age and education groups. The research aims to investigate patterns of color perception across demographic segments within the Kurdish population. Participants were selected from four distinct groups: elementary school graduates (elderly), high school students, university students, and university graduates. The study involved presenting participants with a list of color names in Kurdish and recording their responses to assess color recognition. Descriptive statistics, including frequency distributions and percentages, were utilized to analyze the data and identify trends in color perception. The total number of participants in the study was 274. Findings indicate a high level of familiarity with basic colors such as black, white, red, green, yellow, and blue across all participant groups, with recognition rates ranging from 85% to 96%. However, less common colors, including gray, orange, pink, and purple, showed varying levels of recognition among different participant groups. Gray was relatively better recognized compared to other less common colors, with recognition rates ranging from 8.93% to 15%, suggesting potential differences in exposure to color terminology among different age and education groups.

**Keywords:** Sociolinguistics, color recognition, Kurdish language, Kurd

### Recommended citation:

Kasap, S. (2024). Examining Color Recognition in the Kurdish Language: A Sociolinguistic Perspective. *International Journal of Kurdish Studies* 10 (2), 272-282, DOI: <https://doi.org/10.21600/ijoks.1456401>

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**Introduction**

The study of how humans perceive and name colors offers a captivating glimpse into the intricacies of language, culture, and cognition. This inquiry delves into the curious case of Kurdish spoken mostly in the East and south-east part of Turkey ( Babayiğit, 2021; Karacan & Babayiğit, 2017) and other languages, which appear to lack specific words for certain colors despite the apparent ability of speakers to distinguish them. By critically examining culturalist perspectives, investigating material evidence, and addressing skepticism, we aim to unravel the complexities surrounding color perception.

Culturalists, as critics of prevailing explanations, challenge the notion that languages could overlook words for colors that are perceptually distinct. They question how communities capable of recognizing subtle differences in hues would fail to develop corresponding linguistic distinctions. An analogy to modern idiomatic expressions, where color descriptions often deviate from precise visual representations, underscores the inherent complexity of language in capturing the nuances of color perception. However, the culturalists acknowledge that sporadic idioms fall short of explaining consistent "deficiencies" observed in ancient texts.

To bolster their argument, culturalists turn to material artifacts and cultural practices, seeking evidence of sophisticated color perception in ancient civilizations. Notably, the ancient Egyptians emerge as a case study, boasting a lexicon rich in color terms and a keen appreciation for hues such as green and blue. The presence of lapis lazuli, a revered blue gemstone, serves as tangible evidence challenging prevailing assumptions about color perception in antiquity. Archaeological findings and historical records offer glimpses into ancient cultures' conceptualization of color, underscoring the dynamic interplay between language, perception, and cultural practices.

Despite the compelling arguments put forth by culturalists, skepticism persists among detractors like Magnus and his followers. Doubts linger regarding the plausibility of languages possessing elaborate vocabularies for describing light effects while lacking specific color terms. Nevertheless, culturalists remain undeterred in their pursuit of cross-cultural comparisons and interdisciplinary inquiry, (Cebi & Babayiğit, 2021), aiming to bridge the gap between linguistic expression and perceptual reality. The study of color perception transcends linguistic and cultural boundaries, offering profound insights into the complexities of human cognition. Through critical examination and interdisciplinary inquiry, we have begun to unravel the mysteries surrounding

color perception and expression. By embracing a holistic approach that encompasses linguistic analysis, archaeological evidence, and anthropological insights, we move closer to understanding how language, culture, and perception intersect in shaping our understanding of the world. As we continue this journey of exploration, we are reminded of the dynamic nature of human experience and the role of language and culture in shaping our perceptions of color and reality.

### **Colors and Language**

Color perception is a fascinating aspect of human cognition that is deeply intertwined with language and culture. Across different linguistic communities, the categorization and description of colors vary, reflecting unique cultural perspectives and historical influences. While English speakers may use terms like "sky blue" or "green like the grass" to describe colors, other languages may employ different strategies to articulate the rich spectrum of hues present in the world. Languages organize colors into basic categories, known as basic color terms, which serve as the building blocks for discussing color. These basic color terms provide a framework for individuals to communicate and interpret colors within their cultural context. In English, there are commonly recognized basic color terms such as black, white, red, green, yellow, blue, brown, orange, pink, purple, and gray. However, not all languages have the same number of basic color terms. Some languages may have fewer basic color categories, while others may have more. This variation in color categorization reflects the diversity of human perception and cultural interpretation.

Color perception is a multifaceted phenomenon influenced by language, culture, and cognition. Understanding how different languages categorize and describe colors provides insight into the intricate relationship between language and perception. This chapter delves into the rich tapestry of research exploring color perception across diverse linguistic and cultural contexts, drawing upon a range of scholarly works and empirical studies.

The seminal work of Bulmer (1968) and Conklin (1964) laid the foundation for understanding color categories in indigenous languages, such as the Kalam and Hanunóo communities. These studies revealed how cultural factors shape color perception and categorization, challenging Western-centric notions of color universals. Further insights into color categorization were provided by Dedrick (1997), who explored the nuanced interplay between perception and language in shaping color categories. Wierzbicka's groundbreaking research (1990, 1992) delved

into the semantics of color terms, elucidating the cultural and cognitive dimensions of color perception. Her work highlighted the role of language in shaping conceptual frameworks for understanding color, emphasizing the diversity of linguistic and cultural perspectives on color categorization. Similarly, studies by Goddard (1998, 1999) and Geertz (1983) underscored the cultural specificity of color meanings and the importance of cultural context in interpreting color symbolism.

The influence of language on color perception has also been examined through cross-cultural studies, such as those by Kay and Berlin (1997) and Crystal (2003). These studies revealed how linguistic differences impact color perception and categorization across diverse cultural and linguistic groups. Furthermore, research by Laughren et al. (2006) and Langlois (2004) explored color semantics in Indigenous Australian languages, shedding light on the rich cultural significance of color in these communities. Anthropological studies have provided valuable insights into the cultural significance of color. Morphy's (2005) exploration of Yolngu aesthetics and Munn's (1973) analysis of Walbiri iconography highlighted the profound cultural meanings embedded in color symbolism. Similarly, Scott (2007) and Simpson (2006) examined the role of language migration and cultural synesthesia in shaping color perception and expression. Additionally, the work of Hargrave (1982) and Isaacs (1999) contributed to understanding color terms in Aboriginal languages and contemporary Australian Aboriginal art, respectively. Furthermore, research by Hale and Casagrande (1967) and Langlois (2004) provided insights into semantic relationships in Papago folk definitions and Warlpiri-English encyclopaedic dictionaries, respectively.

### **Research Design**

This study adopts a cross-sectional research design to investigate color recognition among Kurdish participants. Cross-sectional research allows for the examination of a diverse range of participants at a single point in time, providing insights into color perception across different demographic groups. Descriptive statistics, such as frequency distributions and percentages, were used to summarize the data and identify patterns of color recognition among participants.

### **Participants**

Participants were selected from various age and education groups, including elementary school graduates, high school students, university students, and university graduates. This selection aimed to capture a broad spectrum of the Kurdish population and explore potential differences in color recognition based on age and educational background. The sample size was determined based on considerations of statistical power and feasibility. Efforts were made to recruit a sufficient number of participants from each demographic group to ensure adequate representation and statistical reliability.

Table: 1 Participant Distribution by Education Level and Age Range

<b>Participant Group</b>	<b>Number of Participants</b>	<b>Age Range</b>
Elementary School Graduates ( Elderly)	80	45-65 years
High School Students	56	15-17 years
University Students	90	19-24 years
University Graduates	48	26-49 years

The table provides a clear overview of the distribution of participants based on their educational level and age range in the study on color perception among the Kurdish population. Each participant group represents a distinct segment of the population, allowing for a comprehensive examination of color recognition across different age and educational backgrounds. Firstly, the table indicates that the study includes a diverse range of participants, encompassing individuals at various stages of education, from elementary school graduates to university graduates. This diversity ensures a broad representation of the Kurdish population, enhancing the generalizability of the study findings.

Secondly, the table highlights the age range within each participant group, showing that participants within each educational level span a considerable range of ages. For instance, elementary school graduates (elderly) range from 45 to 65 years old, while university students are predominantly between 19 and 24 years old. This variation in age distribution allows for the exploration of potential age-related differences in color perception. Furthermore, the table reveals that the largest participant group is university students, comprising 90 individuals, followed by elementary school graduates (80 participants), high school students (56 participants), and

university graduates (48 participants). This distribution reflects the educational structure of the Kurdish population, with a larger number of individuals enrolled in university-level education compared to high school or elementary school.

### **Data Collection Procedure**

Participants were presented with a list of color names in Kurdish and asked to identify each color. The colors included Black (Reş), White (Spî), Red (Sor), Green (Kesk), Yellow (Zer), Blue (Şîn), Brown (Qehweyî), Orange (Porteqalî), Pink (Kinûşk), Purple (Binefşî), and Gray (Gewr). They were asked to identify and name each color, providing insights into their recognition and linguistic categorization of different hues. This approach allowed for an examination of color perception within the Kurdish population and provided data for analyzing patterns of color recognition across various demographic groups. Responses were recorded using structured questionnaires to ensure accuracy and consistency in data collection.

### **Findings**

The study findings reveal distinct patterns of color recognition among different age and education groups within the Kurdish population. Across all participant categories, there is a strong familiarity with basic colors like black, white, red, green, yellow, and blue. Elderly participants exhibit the highest level of recognition, followed by university graduates, university students, and high school students. However, the recognition of less common colors varies considerably. Gray is relatively well recognized, while orange, pink, and purple show lower recognition rates, particularly among university students. These findings suggest that age and education may influence color vocabulary acquisition, with older and more educated participants demonstrating greater knowledge. In summary, the study underscores the significance of age and education in shaping color perception and vocabulary within the Kurdish population.

### **Table 2: Color Recognition Across Age and Education Groups in Kurdish Participants".**

Participant Group	Total Participants	Known Colors	Percentage of Participants Knowing Basic Colors	Less Common Colors
Elderly	80	Red, Green, Yellow, Blue, Brown	96%	Gray: 12 (15%), Orange: 2, Pink: 3, Purple: 4
University Graduates	48	Black, White, Red, Green, Yellow, Blue	89%	Gray: 8 (16.67%), Orange: 6, Pink: 3, Purple: 8
University Students	90	Black, White, Red, Green, Yellow, Blue	88%	Gray: 15 (16.67%), Orange: 0, Pink: 0, Purple: 0
High School Students	56	Black, White, Red, Green, Yellow, Blue	85%	Gray: 5 (8.93%), Orange: 0, Pink: 0, Purple: 0

### Knowledge of Basic Colors:

Across all participant groups, there is a high level of familiarity with basic colors such as black, white, red, green, yellow, and blue. The percentage of participants knowing these basic colors ranges from 85% to 96%, indicating a strong grasp of fundamental color terms in Kurdish.

Elderly participants exhibit the highest percentage (96%) of knowing basic colors, followed by university graduates (89%), university students (88%), and high school students (85%).

### Less Common Colors:

The less common colors, including gray, orange, pink, and purple, show varying levels of recognition among different participant groups. Gray appears to be relatively better recognized compared to the other less common colors across all groups, with percentages ranging from 8.93% to 15%. Orange, pink, and purple have lower recognition rates, with university students showing no recognition of these colors. This suggests that these colors might be less frequently encountered or discussed in everyday conversations or educational settings.

### Age and Education Impact:

Elderly participants exhibit the highest overall percentage of knowing both basic and less common colors, suggesting that age and experience may play a role in color vocabulary acquisition. University graduates, despite having slightly lower percentages than the elderly, still demonstrate strong knowledge of both basic and less common colors. This could be attributed to their higher education level and exposure to diverse linguistic and cultural contexts. University and high school students, while showing strong familiarity with basic colors, display lower recognition rates for less common colors. This might reflect differences in exposure to color terminology and cultural factors influencing color perception among younger age groups.

## **Discussion**

The findings of this study shed light on the complex nature of color recognition among Kurdish participants, revealing both commonalities and variations across different demographic groups. The high level of familiarity with basic colors such as black, white, red, green, yellow, and blue aligns with previous research emphasizing the universality of these fundamental color categories (Berlin & Kay, 1969; Kay & Maffi, 1999). However, the lower recognition rates for less common colors like gray, orange, pink, and purple underscore the nuanced nature of color perception, which may be influenced by linguistic, cultural, and cognitive factors (Lucy, 1992; Levinson, 2000).

Contrary to earlier claims of universal color categories, recent studies have challenged the notion of a fixed set of color terms across all languages (Levinson, 2001). Robertson et al. (2000) and Saunders & van Brakel (2002) have highlighted the diversity in color terminology systems, suggesting that linguistic categorization of colors may not adhere to predictable patterns as previously proposed. Furthermore, linguists such as Conklin (1955), Snow (1971), and Kuschel & Monberg (1974) have observed that some languages conflate color with other perceptual attributes such as texture or variegation, complicating the identification of basic color terms (Lucy, 1992).

The discrepancies in color recognition observed among different age and education groups in this study may reflect variations in exposure to color terminology and cultural influences (Saunders & van Brakel, 2002). Elderly participants, who exhibited the highest overall percentage of color recognition, may have accumulated greater linguistic and experiential knowledge over time (Levinson, 2001). On the other hand, university students, particularly those in the younger age

group, displayed lower recognition rates for less common colors, suggesting potential gaps in their color vocabulary acquisition (Lucy, 1992).

Overall, these findings underscore the dynamic nature of color perception and the importance of considering linguistic and cultural factors in understanding color categorization processes. Future research could explore the role of contextual factors, such as linguistic relativity and cultural norms, in shaping color perception across diverse populations and languages (Levinson, 2000; Robertson et al., 2000). Additionally, investigations into the cognitive mechanisms underlying color recognition could provide further insights into the interplay between language, culture, and perception (Levinson, 2001; Saunders & van Brakel, 2002).

### **Concluding Remarks**

This study offers valuable insights into color recognition among Kurdish participants, revealing both shared patterns and individual variations in color perception across different demographic groups. While the high familiarity with basic colors reflects universal tendencies in color categorization, the differences in recognition rates for less common colors underscore the influence of linguistic, cultural, and cognitive factors on color perception. The findings highlight the dynamic nature of color categorization and the need to consider diverse linguistic and cultural contexts in studying color cognition. By challenging traditional notions of universal color categories, this research contributes to a deeper understanding of the complex interplay between language, culture, and perception. Moving forward, further investigations into the contextual and cognitive determinants of color recognition will enrich our understanding of human cognition and cultural diversity.

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