



Modern Color Trends in Hairdressing as a Reflection of Aesthetic Preferences of Society

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Abstract

The article is dedicated to the analysis of modern color trends in hairdressing as a reflection of shifting aesthetic preferences in contemporary society. The relevance of the topic is determined by the growing influence of digital visual culture, the expansion of color technologies, and the increasing integration of appearance into everyday mechanisms of self-presentation and social evaluation. The novelty of the work lies in the interpretation of hair color not as an isolated stylistic decision but as the product of an internally connected system in which dye chemistry, digital communication, consumer behavior, and symbolic perception interact. The work describes the structural layers through which color trends are formed, transmitted, stabilized, and transformed; special attention is paid to the relationship between technological durability of color and the rapid reconfiguration of its social meaning. The goal is to explain how contemporary color preferences emerge at the intersection of material and mediated influences. Analytical comparison, conceptual synthesis, and interpretation of recent scientific literature are used to solve this task. The conclusion clarifies the mechanisms that make hair color a dynamic social interface. The article will be useful for researchers of beauty culture, hair professionals, and specialists in consumer aesthetics.

Keywords: Hairdressing, Hair Color Trends, Aesthetic Preferences, Digital Beauty Culture, Consumer Behavior, Dye Technologies, Social Perception, Visual Communication.

INTRODUCTION

The contemporary beauty industry is developing under conditions in which appearance is shaped not only by individual taste but by dense flows of images, platform-mediated evaluation, and increasingly sophisticated cosmetic technologies. Hair color occupies a special place within this structure because it combines material intervention in the body with rapid symbolic interpretation. Unlike many other beauty practices, color transformation is both technically engineered and socially legible: it is produced through chemical fixation, yet read through cultural codes of age, attractiveness, conformity, novelty, and visibility. This gives the topic particular relevance. Modern color trends in hairdressing reflect broader shifts in aesthetic orientation, including the growing legitimacy of experimentation, the pressure of visual media, the persistence of age-related correction practices, and the reorganization of beauty standards in digital environments.

Existing studies describe several parts of this phenomenon with considerable precision. Cosmetic and toxicological research explains the physicochemical architecture of dye systems and the distinctions between temporary, semipermanent, and permanent formulations. Consumer

studies capture motivations for use, frequency of application, and partial awareness of adverse effects. Research on social media and visual adoption demonstrates how digitally amplified images influence product perception and beauty-related behavior. Psychological work, in turn, links digital exposure to body perception and aesthetic self-evaluation. Yet these lines of inquiry are usually developed separately. One body of literature explains how color is fixed. Another explains how it is desired. A third clarifies how it circulates. Their interdependence remains insufficiently articulated.

The purpose of the article is to conceptualize the mechanism of formation of contemporary hair color trends as an integrated system resulting from the interaction of technological, digital, and social aesthetic factors.

To achieve this purpose, three research objectives are set. The first is to identify the structural layers through which hair color trends are produced and stabilized, including chemical, communicative, behavioral, and perceptual components. The second is to determine how digital environments reshape the adoption of color preferences by accelerating visual normalization, imitation, and experimentation. The third is to evaluate how physiological limits, safety concerns, and regulatory pressure modify the boundaries within which socially desirable color choices are made.

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The hypothesis of the study is that contemporary color trends in hairdressing are generated not by fashion preference alone but by the coupled action of three mechanisms: technological stabilization of color, digital amplification of visual standards, and social reinterpretation of appearance, with the result that hair color functions as a dynamic interface between material transformation and mediated aesthetic judgment.

The novelty of the study lies in the development of a conceptual framework that integrates technological, digital, and socio-aesthetic dimensions of hair color formation into a single analytical system. Unlike existing studies that examine these components separately, the present work reveals their operational interdependence and explains how their interaction produces contemporary color trends.

METHODS AND MATERIALS

The literature base was assembled through a targeted search and analytical comparison of recent publications indexed in international scientific databases, primarily Scopus, Web of Science, PubMed, and SpringerLink, with the main emphasis placed on studies published during the last five years. The search logic combined keyword clusters linked through AND/OR operators, joining terms related to hair dye technologies, consumer beauty behavior, digital aesthetics, social media influence, visual information adoption, and body or beauty perception. The initial corpus comprised about 40 publications; after removing peripheral, repetitive, or weakly connected materials, the final analytical set was reduced to 10 studies that offered the clearest evidence on mechanisms, relationships, and observed effects relevant to the topic.

The research design combined analytical review with conceptual interpretation. The selected studies were compared not by formal discipline but by the type of process they described. Some works detailed the chemical architecture of hair colorants, fixation regimes, toxicity mechanisms, and environmental residues. Others examined usage prevalence, user motivations, risk awareness, or adverse reactions in population samples. A separate group focused on visual communication systems, influencer-mediated adoption, image-based product evaluation, and shifts in beauty perception under digital exposure.

Their comparison made it possible to detect how material durability, symbolic valuation, and mediated circulation are connected in practice, even when they are studied under different methodological assumptions.

The selected publications were heterogeneous in scale, depth, and analytical focus: some concentrated on molecular and toxicological properties, some on cross-sectional survey evidence, and some on digital-behavior or perception models. This heterogeneity was analytically productive because it revealed a recurring pattern: the components of contemporary hair color practice are often described with precision, but their interdependence is only partially explained. Chemical studies clarify how color is produced and fixed; consumer studies show why it is used; media studies indicate how its desirability is amplified; psychological studies capture how visual norms are internalized. What remains insufficiently clarified is the operational linkage among these levels. The comparison of sources led to the need to reinterpret modern hair color trends not as a sequence of isolated influences but as an internally connected process in which technological, social, and perceptual elements continuously reshape one another.

RESULTS

The analysis identified a stable multi-layered structure underlying the formation of contemporary hair color trends. This structure consists of interacting technological, communicative, behavioral, and regulatory components. Color transformation in contemporary hairdressing operates not as an isolated cosmetic act but as a multi-layered system in which chemical processes, visual communication channels, and social expectations continuously interact. Within this system, color selection emerges as a negotiated outcome between material constraints of dye chemistry and externally imposed aesthetic signals circulating through digital and social environments. The persistence of this interaction becomes visible when examining how color durability, intensity, and reproducibility are technologically stabilized through oxidative reactions while, at the same time, aesthetic demand shifts toward variability, personalization, and rapid visual turnover (de Souza et al., 2025). Chemical infrastructures impose boundaries. Social perception pushes against them. The systematization of approaches is presented below (Table 1).

Table 1. Structural components of hair color trend formation system (compiled by the author based on de Souza et al., 2025; Shareef et al., 2025; Rosenberg et al., 2025; Ben Arbia et al., 2025; Yang et al., 2021)

System layer	Core process	Functional role	Interaction outcome
Chemical infrastructure	Oxidation and pigment fixation	Stabilizes color within hair structure	Ensures durability of visual result
Digital communication layer	Image amplification and filtering	Transmits visual standards	Shapes perception of acceptable colors
Social evaluation system	Norm formation and validation	Regulates aesthetic acceptability	Reinforces dominant trends
Consumer behavior layer	Decision-making and adoption	Translates signals into practice	Produces observable color choices
Regulatory/biological layer	Risk control and safety awareness	Limits chemical exposure	Modifies acceptable intensity of use

The internal architecture of hair coloring technologies reveals that the dominance of permanent dyes—accounting for 70–80% of synthetic dye usage globally—establishes a baseline of visual stability that supports contemporary aesthetic expectations of long-lasting identity expression (de Souza et al., 2025). This durability is not merely technical; it reshapes how individuals conceptualize self-presentation over time. The oxidation mechanisms involving aromatic amines, diffusion into the hair cortex, and polymerization processes create colors that resist frequent change, which, in practice, aligns with the desire for consistent visual identity in professional and social contexts. At the same time, semipermanent systems, representing approximately 10% of the market and lasting 6 to 12 washes, introduce a controlled layer of temporality that supports experimentation without full commitment (de Souza et al., 2025). This dual-layer structure—stability combined with reversible variation—mirrors broader cultural oscillations between permanence

and fluidity in identity construction.

Consumer behavior data further exposes how aesthetic preferences are not formed in isolation but are mediated through informational ecosystems. In a population of 333 respondents, 30% identified the Internet as their primary source of information about hair dye, while 26.19% relied on advertising channels, indicating that digital visual flows play a dominant role in shaping color choices (Shareef et al., 2025). The mechanism here is not simply exposure but iterative reinforcement: repeated encounters with curated color palettes normalize certain shades and transitions, embedding them into perceived standards of attractiveness. This process becomes more pronounced when combined with influencer-driven environments, where visual content is optimized for rapid recognition and replication (Ben Arbia et al., 2025). The system effectively compresses the cycle between trend emergence and consumer adoption. The systematization of approaches is presented below (Figure 1).

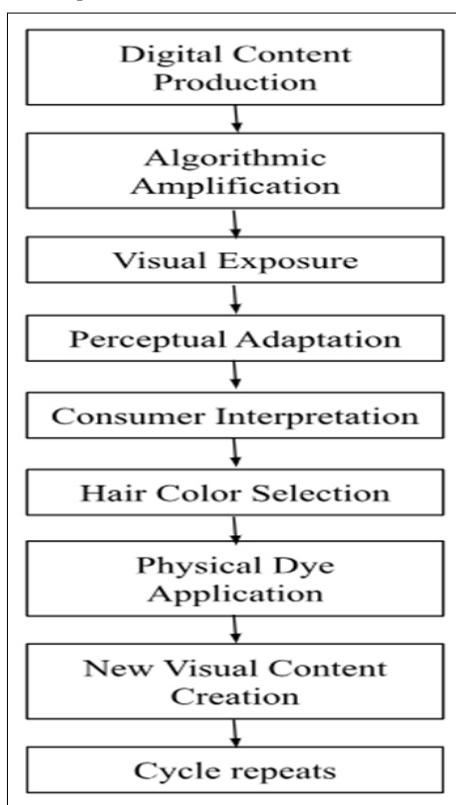


Figure 1. Scheme of hair color trend formation and diffusion (compiled by the author based on Ben Arbia et al., 2025; Yang et al., 2021; Choi et al., 2022; Perret and Schwientek, 2025)

At the level of individual motivation, aesthetic preference demonstrates a strong link to age-related identity management. Within the same dataset, 30.59% of respondents reported gray hair concealment as the primary reason for dye use, while 18.76% associated coloring with enhanced attractiveness (Shareef et al., 2025). These figures suggest that color trends operate across two parallel motivational tracks: corrective and expressive. The corrective track stabilizes appearance relative to biological aging, while the expressive track introduces stylistic differentiation. Both tracks rely on the same technological infrastructure but produce different aesthetic outcomes. The coexistence of these motivations explains the simultaneous popularity of natural tones and highly saturated artificial colors within the same market.

Population-scale data reinforces the systemic nature of color adoption. Among 70 897 individuals, 63.1% reported lifetime use of hair dye, with 6.8% experiencing adverse skin reactions, predominantly mild (77.5%) (Rosenberg et al., 2025). Such prevalence indicates that hair color modification has transitioned from occasional practice to normalized routine behavior. The systematization of approaches is presented below (Figure 2).

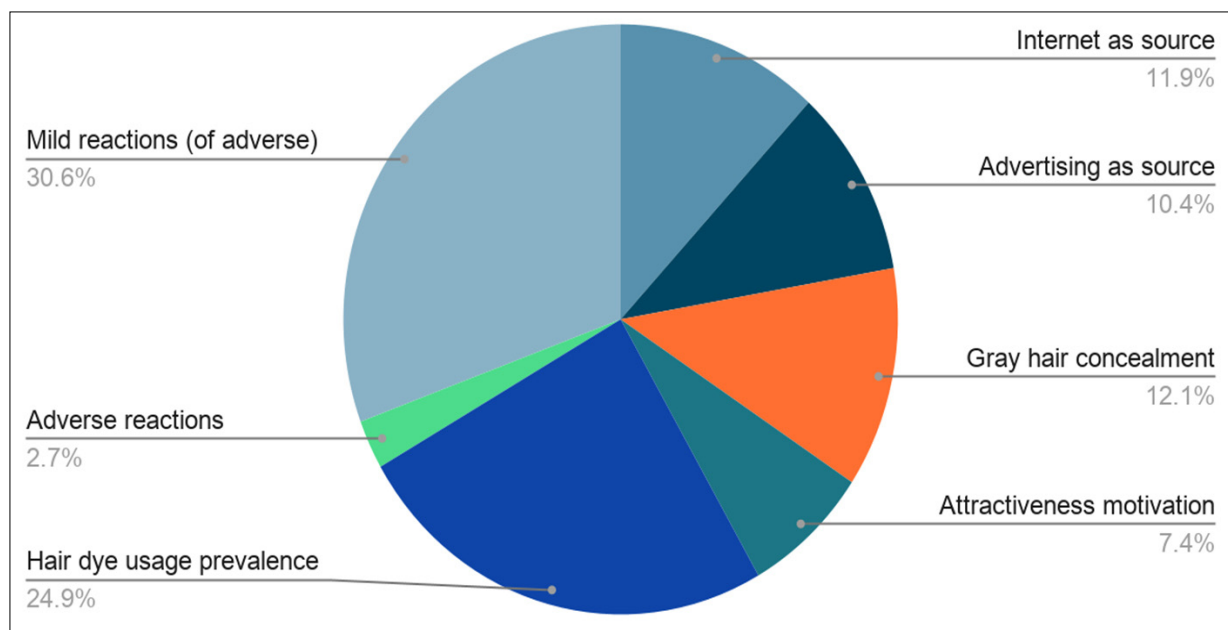


Figure 2. Distribution of motivations and information sources in hair dye usage (compiled by the author based on Shareef et al., 2025; Rosenberg et al., 2025)

The relatively low proportion of severe reactions sustains continued use despite known risks, allowing aesthetic preference to override physiological caution in many cases. The same dataset shows strong associations between dye use and female gender as well as middle age, reflecting how social expectations of appearance are unevenly distributed across demographic groups (Rosenberg et al., 2025). These distributions are not random. They correspond to intensified visual scrutiny within specific social roles.

Digital environments further restructure how color trends propagate. Visual information adoption mechanisms demonstrate that aesthetic judgments increasingly rely on image-based evaluation rather than direct physical observation, creating a feedback loop in which digitally optimized colors influence offline choices (Yang et al., 2021). In practice, this leads to amplification of high-contrast, high-saturation color schemes that perform well in visual media but may diverge from traditional aesthetic norms. Image mining approaches reveal that fashion-related visual data streams continuously recombine color motifs across sources, accelerating diffusion and shortening trend cycles (Choi et al., 2022). The system becomes self-referential. Visibility drives preference.

During periods of external disruption, such as the COVID-19 pandemic, shifts in consumer awareness indicate that aesthetic priorities are sensitive to broader socio-economic conditions. Variations in interest toward cosmetic products reflect changes in daily routines and social exposure, which in turn alter demand for certain color intensities and maintenance levels (Choi et al., 2024). Reduced social interaction temporarily decreases the need for high-maintenance color styles, while post-disruption recovery correlates with renewed interest in visually striking transformations. The fluctuation highlights that color trends

are not autonomous; they are synchronized with patterns of social visibility.

Technological mediation through augmented reality and AI-based visualization tools introduces another operational layer. These systems allow users to simulate color outcomes before physical application, effectively transforming decision-making from experiential to predictive (Perret and Schwientek, 2025). The mechanism reduces uncertainty and encourages experimentation with unconventional shades. As a result, aesthetic boundaries expand, since risk associated with irreversible outcomes is partially eliminated. This contributes to the emergence of hybrid color trends that combine natural bases with digitally inspired tonal variations.

At the physiological level, the interaction between chemical composition and aesthetic demand produces inherent tension. The widespread use of compounds such as p-phenylenediamine, despite its known sensitizing properties, reflects a trade-off between color performance and biological compatibility (de Souza et al., 2025). The fact that up to 84% of certain dye components may remain unused and enter wastewater systems introduces an environmental dimension that indirectly influences aesthetic evolution through regulatory pressure and the development of alternative dyeing methods (de Souza et al., 2025). Emerging techniques, including enzymatic melanin synthesis and reactive dye systems, attempt to reconcile visual expectations with reduced toxicity, although their practical implementation remains limited.

Perceptual mechanisms linking digital culture and body image intensify the symbolic weight of hair color. Associations between online aesthetic exposure and self-perception indicate that color choices increasingly function as markers of social alignment rather than purely individual preference

(Öztunç et al., 2025). The internalization of visual standards reshapes how individuals interpret their own appearance, creating a feedback loop in which external images influence internal evaluation, which then guides subsequent aesthetic decisions.

The cumulative structure that emerges from these interacting layers—chemical, technological, social, and perceptual—does not stabilize into a fixed model. It continuously reconfigures. Hair color ceases to be a static attribute. It becomes a dynamic interface between material transformation and socially mediated perception.

DISCUSSION

Color trends in hairdressing do not emerge as isolated stylistic choices; they are produced inside a coupled system where material dyeing processes and visual information flows interact continuously. Observable instability of trends—rapid shifts in shades and transitions from natural tones to high-contrast combinations—indicates that the physical persistence of color does not align with the instability of its symbolic meaning. The mechanism underlying this divergence is structural: chemical systems fix color within the hair fiber through oxidation and diffusion, while digital environments continuously reconfigure what that color signifies. Fixation and reinterpretation occur simultaneously. The result is not contradiction. It is layered consistency.

Within this structure, visual platforms function as processing nodes that select, amplify, and redistribute specific color configurations. Images do not circulate neutrally. They are filtered through engagement-driven metrics, which privilege contrast, brightness, and recognizability. Repetition follows. As exposure accumulates, perceptual thresholds shift, and colors that initially appear excessive become cognitively normalized. The mechanism resembles adaptive calibration: perception adjusts to frequency. Under these conditions, preference does not precede exposure. It forms within it. Color trends, in practice, are outputs of a feedback loop between visibility and recognition.

This dynamic becomes more pronounced when examining how individuals interpret these visual signals in relation to their own appearance. Hair color operates as an interface between external observation and internal evaluation. When visual standards are repeatedly encountered in digital environments, they begin to structure expectations regarding acceptable or desirable appearance. The perceptual system internalizes these patterns. Selection then appears personal. It is not entirely so. It is mediated through accumulated visual data that has already been filtered by platform-specific logics.

At the same time, consumer behavior reveals that color choice remains anchored in physiological and social conditions that do not change at the same speed as digital signals. The persistence of gray hair concealment as a dominant motivation indicates that biological aging continues to define a baseline

layer of aesthetic demand. This layer stabilizes the system. It introduces continuity. Expressive coloration—bright tones, unconventional gradients, artificial shades—operates above this baseline, adding variability without fully replacing it. Two operational layers emerge: corrective stabilization and expressive modulation. They overlap. They do not merge.

The technological architecture of dye systems reinforces this layered behavior. Permanent dyes embed pigments deep within the cortex through sequential oxidation reactions, creating durable color structures that resist removal. This internal fixation reduces the frequency of change and supports long-term visual consistency. In contrast, semipermanent and temporary dyes remain closer to the surface, relying on weaker interactions and enabling faster removal. These systems introduce temporal flexibility. When both types coexist in practice, they generate a dual temporal regime. Some color decisions are long-term commitments. Others are short-term adjustments. The system distributes change across time rather than concentrating it.

However, material constraints introduce limits that are not always visible at the level of aesthetic choice. The chemical composition of many dye systems involves reactive compounds capable of inducing sensitization and adverse reactions. These reactions do not occur uniformly, which creates a perception of relative safety among users. Yet the underlying mechanism—interaction between aromatic amines and biological tissue—remains constant. Repeated exposure increases the probability of response. The system tolerates this risk because the majority of applications do not produce immediate severe outcomes. Risk becomes statistically distributed. It rarely interrupts the trend cycle. It shapes it indirectly.

Previous research examining dermatological reactions and population-level usage patterns indicates that widespread adoption coexists with partial awareness of chemical composition and safety practices. This combination produces a specific behavioral pattern: high engagement with coloring practices alongside limited procedural caution. The mechanism is not simply informational deficit. It reflects the imbalance between rapid aesthetic signaling and slower dissemination of technical knowledge. Visual information travels faster. Chemical understanding lags behind. The system evolves under asymmetric information flow.

Digital mediation technologies further alter how decisions are formed by introducing predictive visualization. Augmented reality tools allow color outcomes to be simulated before physical application, effectively shifting the decision process from experiential trial to anticipatory modeling. This reduces uncertainty. It expands the acceptable range of choices. When potential outcomes can be previewed, the perceived cost of experimentation decreases. The system encourages variation not by changing chemical capabilities, but by modifying cognitive expectations. The decision threshold lowers. Adoption accelerates.

Influencer-driven communication networks intensify this process by linking aesthetic configurations to social validation metrics. Color choices that receive high visibility are more likely to be reproduced, not because of intrinsic superiority, but because visibility signals acceptance. The mechanism operates through distributed replication. Each instance reinforces the pattern. Over time, specific color schemes stabilize temporarily as dominant references. Stability, in this case, is not material. It is statistical. It persists only as long as visibility remains high.

At the same time, broader social disruptions introduce fluctuations that reveal the system's sensitivity to external conditions. Changes in daily routines and social exposure alter the necessity of maintaining certain visual standards. Reduced public interaction decreases the functional value of high-maintenance color styles. When interaction intensifies again, demand for visible differentiation returns. The system contracts and expands in response to social visibility. It does not remain constant. It adapts.

Several limitations should be acknowledged. The analysis relies on previously published studies that differ in design, scale, and methodological approach, which restricts direct alignment of quantitative findings. Survey-based data introduce subjectivity, particularly in reporting motivations and adverse reactions, and may not fully capture actual behavior. Experimental investigations of chemical processes provide detailed insight into dye mechanisms but are conducted under controlled conditions that do not reflect variability in real-world application. Digital behavior studies depend on platform-specific datasets, limiting generalization across different visual ecosystems. These differences create fragmentation. Integration remains partial.

Another limitation concerns temporal instability. Aesthetic preferences documented within specific time intervals reflect transient configurations rather than stable patterns. Rapid turnover of visual trends complicates longitudinal interpretation, and existing studies rarely track the same populations across extended periods. The absence of unified datasets that combine chemical, behavioral, and perceptual variables further restricts the ability to model the system holistically. The system is observed in fragments. Not as a whole.

Emerging technological and regulatory developments introduce additional uncertainty. New dyeing approaches based on biomimetic pigmentation or alternative bonding mechanisms are still in experimental stages and have not yet restructured large-scale practice. Regulatory constraints targeting toxic components may gradually limit available formulations, indirectly shaping the palette of achievable colors. These influences operate slowly compared to digital trend cycles. They accumulate over time. Their effects are delayed.

The interaction between material processes, perceptual adaptation, and digital mediation does not produce a stable

equilibrium. It reorganizes conditions under which color is selected and interpreted. Hair color ceases to function as a fixed attribute. It becomes a dynamic interface shaped by overlapping systems. Stability is temporary. Change is continuous. From a practical perspective, this systemic understanding allows professionals in the beauty industry to better anticipate trend dynamics, optimize service strategies, and adapt color solutions to both technological constraints and client perception patterns.

CONCLUSION

The analysis makes it possible to clarify that modern color trends in hairdressing reflect aesthetic preferences of society not in a superficial decorative sense but through a deeper interaction between material technologies and visual culture. The first research objective was fulfilled by identifying the main structural layers of trend formation: chemical infrastructure, digital communication, consumer behavior, perceptual adaptation, and regulatory-biological limitation. Their interaction explains why contemporary color practice cannot be reduced either to fashion imitation or to technical possibility alone.

The second objective was fulfilled through the explanation of how digital environments intensify and accelerate the adoption of particular color schemes. Visual platforms redistribute attention selectively, repeated exposure normalizes tones that initially appear unusual, and predictive tools such as augmented visualization lower the threshold for experimentation. Under these conditions, aesthetic preference is formed inside mediated circulation rather than prior to it.

The third objective was fulfilled by showing that color choice remains constrained by physiological risk, toxicological properties of dye systems, and the gradual impact of safety awareness and regulatory pressure. These factors do not eliminate experimentation, but they shape its limits and redirect technological development toward more acceptable formulations.

The proposed hypothesis was confirmed. Contemporary hair color trends are formed through the coupled action of technological stabilization, digital amplification, and social reinterpretation. Hair color no longer functions as a fixed stylistic marker. It operates as a mobile interface through which society processes age, attractiveness, individuality, and visibility under changing aesthetic conditions. The practical significance of the study lies in its applicability for hair professionals, educators, and product developers, as it provides a framework for understanding how technological capabilities, digital environments, and social expectations jointly shape color choices and trend evolution.

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