

Ecologizing Police Orientations: Police Culture, Danger, and Adaptation

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Abstract

Criminology has long since moved away from cultural deficit or pathologizing explanations for street crime, instead advancing ecological explanations for offending, with increasing focus on how developmental environments shape individual psychosocial orientations and propensities to crime. Without excusing misbehavior, this work ecologizes offending, in part by theorizing how dangerous, unpredictable environments can foster heightened vigilance, mistrust, and readiness for violence. However, that ecologizing approach and explanatory logic have not been applied symmetrically to police orientations and behaviors. The dominant cultural account of police orientations attributes officers' high vigilance, threat sensitivity, and survival-focused orientations to dysfunctional occupational culture and training rather than to ecological conditions. At present, orientations that are ecologized in offenders are often pathologized in police. In this article, I argue that this explanatory asymmetry is scientifically unwarranted and practically costly. Drawing on evolutionary-developmental theory, I encourage a reframing of police threat sensitivity and danger orientations as contextually grounded adaptations to an ecology defined by uncertainty and catastrophic risk, rather than primarily a consequence of pathological culture bracketed from ecological realities. This reframing has implications for explanation and reform. Efforts that work against rather than with police officers' evolved survival-focused orientations, targeting culture/values as primary cause without sufficiently addressing the functions these orientations serve in the task ecology, may struggle to create durable change.

Keywords: Policing; Police culture; Vigilance; Evolutionary-developmental theory; Warrior mindset

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1 Introduction

Over the past half century, as both a reaction and correction to earlier deficit/pathology models (biological inferiority, moral failure, “culture of poverty”), criminology has increasingly focused on ecologizing¹ offending, including understanding the developmental contexts in which criminal propensities develop (Agnew, 1992; Akers, 1998; Gottfredson & Hirschi, 1990; Sampson & Laub, 1993; Thornberry, 1987; Wikström et al., 2012). This shift created the current dominant approach to explaining crime: when behavior looks irrational or pathological, scholars typically ask what environmental conditions might make it intelligible or sensible.

Increasingly, criminological scholarship has drawn on evolutionary-developmental theory, explicitly or implicitly. Generally, this work theorizes that exposure to harsh, unpredictable environments, such as disorganized, impoverished, and high-crime neighborhoods, adaptively calibrates psychological and behavioral systems² in response to experienced conditions (e.g., Chisholm, 1999; Ellis et al., 2012; Simons & Burt, 2011). On this view, psychosocial orientations, such as a readiness for violence, mistrust of others, and threat sensitivity, can be understood as survival-oriented responses to dangerous environments rather than as character defects or pathologies (e.g., Anderson, 1999; Kirk & Papachristos, 2011; Oliver, 2003; Burt, Lei, & Simons, 2017). Similarly, contemporary work on offending moves beyond earlier cultural deficit explanations where culture was bracketed off from structure and environments and viewed instead primarily as pathology, excess, or evidence of moral failure. Instead, contemporary criminology understands cultural frames or cognitive landscapes, such as the “code of the street,” as emerging from structural conditions and serving self-protective survival functions, even when they generate harmful outcomes for self or others (Anderson, 1999; Burt, 2018; Sampson & Bean, 2006; Sampson, 2015).

In contrast, similar orientations among police, who also operate in environments defined by uncertainty, interpersonal threat, and exposure to severe violence and its aftermath, are typically evaluated as dysfunctional or disproportionate (e.g., Stoughton, 2015; Sierra-Arévalo, 2024). The dominant culturalist account of police orientations attributes them to an excessively danger-oriented occupational culture, largely bracketed off from the ecological conditions in which officers work. These occupational cultural orientations, variously called the “warrior mindset” or “danger imperative”—characterized by high vigilance, preoccupation with danger, sensitivity to threat, emphasis on authority and “command presence,” and a readiness for violence—have been the focus of sustained attention because they are argued to foster an us-versus-them mentality, normalize aggressive tactics, and increase the risk of avoidable harms, including unnecessary use of force, civilian injuries, and encounter escalations that might otherwise have remained nonviolent (e.g., Sierra-Arévalo, 2019; 2024; Skolnick, 1966; Stoughton, 2016).³

¹Whereas the Chicago School tradition used ‘ecological’ primarily to refer to neighborhood-level conditions (Park, Burgess, & McKenzie, 1925; Shaw & McKay, 1942), I use the term in the broader sense standard in evolutionary and developmental biology as the full set of environmental conditions, including physical, social, interpersonal, institutional, in which an organism develops and operates (Bronfenbrenner, 1979). Culture falls within this definition as one environmental condition among others: the shared meanings, practices, and institutions through which a population organizes its relation to material and social circumstance (Patterson, 2015). An explanation that invokes culture is ecological, in the sense used here, only insofar as it situates cultural forms within the structural, social, and physical conditions that produce, sustain, and are reshaped by them. Explanations that focus on culture while largely bracketing the conditions in which it develops are culturalist without qualifying as ecological.

²Particularly, but not exclusively, relevant is the neuroendocrine stress response system, composed of two functionally integrated circuits: one which governs the incredibly fast “fight or flight” response to immediate challenges, which dissipates within minutes, and one—the widely discussed hypothalamic-pituitary-adrenal (HPA) axis—governing a slower, longer-lasting response to challenges and opportunities; see Gunnar & Vazquez, 2006 for a review.

³Notably, the empirical status of these downstream linkages remains more inferential than direct. Much of this literature

To be sure, these orientations are plainly documented, and overly aggressive policing produces real harms. This article disputes neither the existence nor the public costs of aggressive policing behaviors, including cascading consequences of less severe behaviors such as disrespect toward civilians and unnecessarily aggressive conduct. My focus is on explanatory adequacy and *orientations*.⁴ I argue that the cultural-pathology account of police orientations is incomplete because it brackets off the ecological conditions that generate and sustain those orientations, focusing on occupational culture as the primary cause and the proper target for reforms—a pathological culture explanation criminology recognizes as inadequate when explaining offending. To wit, orientations that are *ecologized* when exhibited by offenders are frequently *pathologized* when exhibited by police. Whereas offenders are typically treated as objects of ecological *explanation*, police are treated as agents of the state subject to *evaluation*. In this respect, the dominant accounts of police orientations remain cultural deficit explanations.

This asymmetry in explanation is the subject of the present article. Here, I argue that applying the same ecological logic criminology routinely applies to offenders produces a more complete and useful *explanatory* account of police orientations, with implications for reform. My aim is to encourage the application of an ecological evolutionary-developmental (“evo-devo”) approach to thinking about and explaining police orientations and behavior without endorsing or excusing harmful conduct.⁵ Of course, models involve culture as a causal mechanism without framing culture as *the* causal driver of outcomes. The proffered evo-devo account is not a culture *versus* ecology reframing, but instead a theoretical intervention that offers explanatory alternative to the culture-as-primary-and-pathology approach with an ecologized approach that is compatible with and acknowledges the role of culture as a causal intermediary, transmitter, and contributor to orientations and, ultimately, behavior. As I will discuss, an ecological evo-devo approach shifts from focusing on police orientations as occupational cultural pathologies to be eliminated to environmentally grounded adaptations to be understood.

As discussed here, reframing police vigilance, danger orientation, or warrior mentality as adaptations to the task ecology does not mean that they cannot or do not contribute to problems, including civilian injury, social harm, and strained public-police relations, in the same way as the ecological evo-devo offender models do not deny that offending harms. Instead, the reframing implies that treating these danger-sensitive *orientations* as purely dysfunctional, without understanding their functions and adaptive rationale, may undermine explanation as well as reform efforts aimed at reducing harms that may follow (Ellis et al., 2012). Despite decades of efforts and documented behavioral changes, police culture-change reforms have proved challenging and difficult to sustain, and police cultural intransigence is often blamed (e.g., Sierra-Arévalo, 2019; Stoughton, 2016). Re-framing our understanding of police culture and training as, at least in part, an adaptation to the lived experiences of policing while recognizing the ‘humanness’⁶ of officers (in the same way as offenders), may enhance understanding and reform efforts. Moreover, reforms designed to work with rather than against the adaptive logic of police orientations are, *ceteris paribus*, more likely to be effective, in part, because they are more likely to be persuasive to the

more directly documents and theorizes the occupational orientations themselves: the salience of danger, suspicion, authority, officer safety, command presence, and readiness for violence. The further claim that these orientations produce unnecessary force, injuries, or avoidable escalation is generally advanced as a plausible pathway rather than established through direct evidence linking officer-level or agency-level cultural orientations to force outcomes. Their empirical focus is primarily on the orientations themselves—that they exist, are culturally reinforced, and shape officers’ interpretive frames.

⁴To be clear, as explained more below, my explanandum is police officers’ vigilance, sensitivity to threat, and concern with danger, like that of Sierra-Arévalo (2024) and others (see note 3)—not police aggressive behavior including police force.

⁵As I repeat throughout, explanation is not approval or exculpation. After all, criminological theory seeks to understand harmful, including predatory, offending through ecological and developmental frameworks without condoning or excusing the behavior or orientations that give rise to it. The same analytic–evaluative distinction should apply to the police.

⁶Obviously, this is not the place for a detailed exposition of what ‘humanness’ entails, and many books have been written on the topic. For present purposes, by the humanness of officers, I mean that officers are evolved biological organisms with species-specific and universal capacities and limitations. Like other humans, they have a nature that evolved primarily in small hunting communities and remains ultimately organized around evolutionary fitness: survival and reproduction (see, e.g., Chisholm, 1999).

officers asked to change.

In the next section, I briefly reconstruct the police-culture-as-primary and pathological (as dysfunctional or distorted) accounts of police orientations, including their explanatory nature and reform orientation. These accounts locate the primary cause of police danger orientations in occupational culture(s) and make that culture the primary target of police reforms. My critique concerns the culture-as-causally-primary frame.

2 Police Culture as Pathology and Reform Target

A longstanding body of policing scholarship has focused on the management of violent risk and dangers in policing as a distinguishing feature of the police occupational role (Westley, 1970; Skolnick, 1966; Cullen et al., 1983), and has characterized the shared threat-sensitive, danger-aware orientations toward the public and police work that mark police culture,⁷ including pronounced vigilance, limited public trust, emphasis on authority, and a readiness for rapid escalation (e.g., Skolnick, 1966; Westley, 1970; Van Maanen, 1978; Paoline, 2003; Crank, 2004). Several contemporary descriptive and explanatory accounts of threat-sensitive, danger-oriented police orientations exist and share three defining features: they (1) place explanatory focus on police occupational culture, (2) characterize that culture as pathological—excessive, dysfunctional, and miscalibrated—and (3) make that culture the source of problems (overly aggressive policing, including police force) and the target of reform. These accounts, which I refer to as ‘cultural-pathology’ accounts, are perhaps most influentially articulated in the work of Stoughton (2015; 2016) and Sierra-Arévalo (2019; 2021; 2024).

Although approaching policing from different vantage points, Stoughton and Sierra-Arévalo converge on occupational culture as the source of policing’s orientations and aggression/force problems and locus of explanation. In his works, Stoughton (2015; 2016) locates the ‘crisis’ “in the principles and values that underlie policing,” which he calls the “Warrior culture,” that is said to inculcate an adversarial self-conception in which officers see themselves as soldiers in a war against crime and treat civilians as potential enemies (2016, pp.~613–614). In an even more sustained account drawing on multi-site ethnographic fieldwork, Sierra-Arévalo (2019; 2021; 2024) argues that a cultural frame, characterized by “the perceptual preoccupation with violence and the provision of officer safety”, which he calls the “danger imperative,” pervades and orients everyday police work (2021, p.95). He traces this dominant cultural frame, which he even refers to as the “soul” of policing, to the institutions through which it is learned and reproduced, especially academy and in-service training. For both, a primary cause of police misconduct and avoidable conflict—including legitimacy-eroding tactics, unnecessary force, lack of empathy and support, and even fatal violence—is policing’s occupational culture.

Importantly, this Warrior/danger orientation is repeatedly characterized as both socially harmful—increasing the risk of civilian injury, including death, adverse public interactions, and lower police efficacy—and miscalibrated to the realities of police work (see, esp. Sierra-Arévalo, 2021; 2024). As is well known, police work is overwhelmingly dominated by nonviolent, mundane interactions. Violence against officers, while real, is very rare relative to the volume of police-citizen interactions, and as these scholars note, rates of on-duty deaths have declined substantially over recent decades (White et al., 2019; Zimring, 2017). A danger-first orientation that persists despite low and declining rates of violence against police thus appears miscalibrated—a mismatch between orientation or cultural frame and occupational reality. Both Stoughton (2016: pp.616, 652, 659) and Sierra-Arévalo (2021, pp.70–1; 2024, pp.233–4) emphasize that the police cultural emphasis on danger is objectively overstated; that is, excessive relative to the base rate of risk.

The cultural-pathology account thus rests on a specific explanatory logic, centered on the claim that

⁷I use “police culture” in the singular throughout for readability. This is not meant to imply a monolithic police culture. A substantial literature documents variation across departments, ranks, and officer types, and cautions against treating occupational culture as uniform (Paoline, 2003; see also Paoline & Terrill, 2014). My argument does not depend on the existence of a single, homogeneous culture; it concerns the danger- and threat-oriented elements that recur across these variants.

police danger orientations are both harmful and disproportionate or miscalibrated to the occupational realities of policing—i.e., pathological. On this account, field experience dominated by routine encounters cannot generate or sustain police danger and warrior orientations. Explanation must lie elsewhere, and the explanation is occupational culture. Sierra-Arévalo's work is particularly explicit about the genesis of this danger-oriented culture. Academy instruction, scenario-based training, memorialization of fallen officers, and shared narratives of officer vulnerability are said to keep rare but extreme outcomes cognitively and emotionally vivid, exaggerating perceived risk, and sustaining a preoccupation with danger that field experience would otherwise fail to warrant (Sierra-Arévalo, 2019, 2024). In this framework, occupational culture generates, expresses, and sustains officer 'preoccupation with danger,' us-versus-them mentality, and hypervigilance, which would otherwise be attenuated given the quotidian nature of everyday police experience. These orientations are then linked to avoidable civilian, and in some cases officer, harms (e.g., Sierra-Arévalo, 2019).

The reform prescription follows from the diagnosis. If pathological culture is the cause, culture change is the remedy. Following others, both scholars argue that solving the problem of policing requires changing the culture, in part by training and incentives to replace the warrior with the guardian and reorienting officers from aggression to empathy and from dominance to service—"to instill officers with values that encourage public engagement, foster trust, and build lasting community partnerships. The result is⁸ safer and more effective law enforcement" (e.g., Sierra-Arévalo, 2024; Stoughton, 2016). In this way, the culture-as-pathology framing is both descriptive as well as explanatory and reform-oriented. If these accounts held that police occupational culture and danger orientations were appropriately calibrated to the policing environment, then explicitly targeting police culture for reform efforts would be nonsensical. Instead, in these accounts, police culture is a—if not the—major problem and the target of reforms.

To be sure, neither Stoughton nor Sierra-Arévalo denies the dangers inherent in policing or the environments in which police work. On the contrary, both acknowledge that policing can involve danger and violence, and Stoughton (2016) is explicit in arguing that we should not seek to remove all "Warrior-like" elements of policing. Yet, their focus remains primarily on excessively danger-focused police culture as cause of policing's problems and the appropriate target of reform, largely bracketing off ecology in these accounts, explanations, and reform prescriptions. The remedy is changing values and the hearts of officers, with training reforms to inculcate more empathy, patience, inclusivity, introspection, and respect for human dignity. As noted, culture-change reform efforts have proven difficult to implement and sustain, a pattern typically attributed to entrenched police culture (e.g., Chanin, 2015; Sierra-Arévalo, 2019; Skogan, 2014; Stoughton, 2016). I suggest an alternative reading: that the persistence of danger-oriented culture across departments, generations, and reform efforts may not primarily reflect occupational cultural intransigence and pathology but ecological conditions and continuity.

3 Evolutionary-Developmental Models

Among recent developments in the ecologically oriented offender literature is the incorporation of evo-devo frames or insights in criminology (Burt, 2018; Simons & Burt 2011; De Courson et al., 2023). The most distinguishing feature of evo-devo models is the evolutionary logic of adaptations. These models recognize that humans, like other organisms, did not evolve to promote health, wealth, happiness, or even longevity, but to survive and reproduce (Chisholm, 1999; Pepper & Nettle, 2017). This crucial evolutionary assumption about the goal of development and life itself orients the model's explanatory logic.

Rooted in this ultimate assumption, evo-devo models have several characteristic features (see, e.g., Chisholm, 1999; Del Giudice & Ellis, 2016). First, humans evolved to survive in environments that vary from harsh, dangerous, and unpredictable at one extreme to safe and predictably supportive at the other.

⁸Presumably, this 'is' really means "will likely be," as Stoughton clearly expects this to be the case and explains why this is plausible in the next paragraphs, but we lack specific evidence on the point to make the statement 'is'.

Second, developmental success (survival and fitness) in these different environments requires different competences, including psychosocial orientations. In other words, developmental success depends on a match between organism and environment. Third, environments can and do change over humans' long life spans; thus, humans have evolved an expansive capacity for environmentally induced malleability, known as adaptive developmental plasticity, which includes both an ability to detect important (and variable) environmental cues and respond in a forward-looking manner to these cues (within limits). That is, we have the capacity to change our orientations and behaviors in response to environmental input, particularly cues about danger and safety. Although humans have sensitive developmental periods and greater plasticity in general earlier in life, human neurobiological systems remain malleable after childhood,⁹ and importantly for our purposes, threat-detection/fear-learning systems are among those retaining the most plasticity in adulthood, for obvious survival-related reasons. Fourth, individuals adapt in the sense that they optimize their fit to their environment. Optimal means best available given circumstances, not best imaginable. Optimality is local and contingent; constrained by existing resources and a local context; and always involves tradeoffs in resources (including time) and other adaptations (Chisholm, 1999). For example, you can be trusting and relaxed or mistrusting and vigilant, not both at the same time.

On this view, our bodies and minds, including psychosocial orientations and behaviors, are calibrated by environmental cues in a manner to promote survival and reproduction (evolutionary fitness; Chisholm, 1999; Del Giudice & Ellis, 2016; Ellis et al. 2012; Pepper & Nettle, 2017). As a species, we have developed extraordinarily complex technological, institutional, and cultural systems, but the evolutionary target remains continuance; thus, our neurophysiological architecture is particularly attuned to detect and respond to survival-related information (e.g., Chisholm, 1999).

A wealth of criminological scholarship is consistent with this evo-devo model, finding that harsh, unpredictable, dangerous environments—including community violence and disorder; harsh or inconsistent parenting; family instability; poverty and resource scarcity—shape psychosocial orientations, including mistrust, threat vigilance, shortsightedness, and readiness for violence, that increase the risk of violence and street crime (e.g., Anderson, 1999; Burt, 2020; Simons & Burt, 2011; Sampson, 2015; De Courson et al., 2023). Importantly, from an evo-devo perspective, these orientations are understood as contextually appropriate adaptations to ecological conditions, not pathologies or deficits (Chisholm, 1999; Ellis et al., 2012; 2022); that is, as survival-oriented responses to environments characterized by danger, resource scarcity, and unpredictability (e.g., Burt, 2018; Frankenhuis, Panchanathan, & Nettle, 2016). On this view, individuals develop these orientations in response to environmental cues that safety is uncertain, others cannot be trusted, threat can materialize without warning, and conventional rules do not reliably produce better outcomes. As rich ethnographies like Anderson's (1999) document, these adaptive orientations coalesce into broader shared cultural frames and cognitive landscapes, as shared responses to and expressions of structural conditions of existence.

Thus, in contemporary criminology when the focus is on (non-police) offenders, culture is not treated as an ecologically-bracketed cause but is instead explicitly theorized as ecologically derivative. Shared orientations and cultural frames emerge from and reflect structural conditions of existence. Through an intertwined, reciprocal process, structure shapes ecology, ecology calibrates psychology and social schemas, and shared social schemas shape culture as cognitive landscapes. Although reciprocal, the primary and initial causal arrow runs from environments to adaptive orientations, with culture as the shared, transmitted expression of those adaptations. This is in stark contrast to the way much of the policing literature treats culture and police orientations.

⁹Evo-devo models recognize an age-related average decrease in plasticity. Although sensitive developmental periods—as windows of heightened plasticity—exist, these are not the only windows when change is possible. "Sensitive period" means *more* malleable, not *exclusively* malleable (Kühn & Lindenberger, 2016). Without such environmentally induced malleability, for example, adult-onset post-traumatic-stress disorder (PTSD) could not exist.

4 Asymmetry in Explanation

In much of the policing literature, dysfunctional police culture is conceived as a primary causal force and target for change. Rather than being theorized or rooted in upstream dangerous, unpredictable ecological conditions, police danger orientations are traced to occupational culture and training that generate and sustain them. On this view, the unpredictably dangerous environments in which many officers work—including the same neighborhoods, with the same ambient violence and unpredictability in which many offenders live—are bracketed or replaced by portrayals that emphasize how rarely a given police stop turns violent. Thus, while the civilian offender literature asks what environmental conditions produce hypervigilant, threat-sensitive orientations, the policing literature tends to focus on what cultural pathology generates and sustains them. Ecology is overshadowed by culture, and adaptation is displaced by pathology. In other words, similar vigilant and threat-reactive behavioral and cognitive patterns trigger different explanatory logics depending on the population under study.

Of course, the policing orientations' literature is not devoid of ecological insight. Scholars do acknowledge that officers work in environments marked by uncertainty and potential danger, and some research has linked neighborhood context to officer *behavior* (e.g., Terrill & Reisig, 2003). However, ecological considerations remain peripheral rather than foundational in understanding police *orientations*. Environmental conditions are recognized but are rarely theorized as primary drivers of the orientations under study; instead, explanatory weight is placed on occupational culture, training, and institutional socialization (e.g., Sierra-Arévalo, 2019, 2024; Skolnick, 1966; Stoughton, 2015, 2016). The result is a limited and uneven ecologizing, which is still focused on cultural deficits. That is to say, ecology is sometimes acknowledged as context but not treated as a generative force, while culture is elevated to the status of primary cause of police orientations.

This maps onto what might be described as a broader asymmetry in contemporary social science. For marginalized or stigmatized groups, scholars tend to emphasize environmental and situational causes, whereas for high status or institutional actors, scholars disproportionately emphasize dispositional or cultural causes. That is, 'explanatory generosity' is often extended toward actors understood as (more) constrained by structure, while evaluative scrutiny is directed upward toward actors understood as exercising institutional power. Police are, *of course*, distinctive in that they are state agents with institutional backing and the authority to use lethal force against others in certain circumstances. In addition, police are often viewed as role occupants rather than contextually situated individuals, which suppresses the ecological question ("What kind of environment would calibrate a person this way?") and redirects attention toward the question: "Why is this state agent acting contrary to democratic norms or ideals?" However, while there is a real distinction in social role and responsibility between the police and public, which is reasonably viewed as meaningful for normative *evaluation*, this distinction is largely irrelevant for *explanation* and the operation of evolved psychological systems. Threat detection, vigilance, risk sensitivity, and rapid response systems are not calibrated to institutional obligations but to danger and uncertainty. In short, this body of work applies different standards of judgment to different actors and has allowed those different evaluative standards to blur into standards of explanation. The result is an explanatory asymmetry.

This asymmetry has theoretical and practical consequences. When police danger orientation is characterized as a disproportionate, miscalibrated cultural pathology, the question of whether and how ecological conditions generate and sustain these orientations is obscured. By contrast, an ecologically grounded account makes central the question of how orientations may reflect environmental conditions as well as consideration of which features of the policing environment generate which orientations, through what developmental mechanisms, and with what tradeoffs and consequences for both officers and civilians.

An evo-devo account also foregrounds an important question the cultural-pathology framing leaves unasked: what functions danger orientations serve for officers navigating genuinely uncertain and potentially lethal environments. And, practically, understanding danger orientation as cultural pathology channels reform toward changing culture: altering training, symbols, and occupational norms

to reduce danger salience, which targets a proximate mechanism without considering or addressing generative ecological conditions. This may help explain why such efforts have proved difficult to sustain. Officers asked to adopt a more guardian-oriented ethos—one emphasizing trust, empathy, patience, and inclusivity—while continuing to interact with unknown individuals and to face rare but catastrophic violence may experience a mismatch between prescribed orientation and ecological reality. The dominant cultural-pathology framework downplays this mismatch.

5 Ecologizing Police Orientations: Threat, Uncertainty, and Vigilance

“We train for the worst-case scenario... We train to expect someone to have a gun, to try and hurt us. It doesn’t happen often but it does happen. People do fight you.”

—“Officer Mendendez,” in *Sierra-Arévalo*, 2021, p.86

As is well known, police work can be dangerous and deadly. Policing scholarship has long recognized that managing the risk of violence is a fundamental aspect of the job (e.g., Cullen et al., 1983; Manning & Van Maanen, 1978; Skolnick, 1966; Westley, 1970). Although violent encounters are statistically rare relative to the volume of police-citizen interactions, the possibility of violence is ever-present, and its consequences can be catastrophic, including severe injury or death. Most police-public encounters are routine, but a random encounter can escalate, often with little warning, and the cost of being unprepared can be fatal (or, in the words of evo-devo theories, falling off a fitness cliff; Chisholm, 1999; Nesse, 2004).

This fitness-cliff or catastrophic-risk structure matters for how we understand police orientations. An evo-devo framework considers whether and how the policing ecology generates conditions under which a vigilant, threat-sensitive orientation is a coherent adaptive response, even recognizing that violent encounters are statistically rare. Why would officers remain in a state of hypervigilance in interactions when the likelihood that any given interaction seriously threatens them is minuscule?¹⁰

Most obviously, officers cannot reliably identify in advance which encounters will turn bad. Consider a routine traffic stop, which is the most common police-citizen encounter. The overwhelming majority are resolved without incident in minutes. However, officer training explicitly prepares for the traffic stop that escalates to a lethal threat because such escalations do occur and because—crucially—they are not always distinguishable in advance from many tens of thousands that do not. If they were reliably identifiable in advance, general vigilance (which is quite cognitively and energetically taxing) would be unnecessary. A traffic stop, a welfare check, or a domestic disturbance call can all escalate to lethal threat with little or no warning. Under these conditions, a vigilant orientation calibrated to minimize catastrophic error or false negatives (i.e., coding a situation as safe and unthreatening when it is not, and falling off a fitness cliff) rather than probability and accuracy¹¹ is not obviously disproportionate or

¹⁰The relevant construct here is not perceived dangerousness, if by that we mean a conscious estimate that a given encounter is likely to become violent. Perceived dangerousness, in that sense, might reasonably be expected to track base rates. Instead, my focus is vigilance or threat sensitivity: the readiness to detect and respond to cues that could indicate danger under conditions of asymmetric error costs. The familiar snake example is useful. I do not perceive the woods near my house as highly dangerous or snakes as highly prevalent. However, I may still startle at a stick that resembles a snake, because the cost of mistaking a snake for a stick is much higher than the cost of mistaking a stick for a snake. The same logic helps explain why rare but catastrophic possibilities can shape attention and response without implying that officers believe those outcomes are likely in any given encounter.

¹¹By accuracy I mean minimizing total classification error, weighting false positives and false negatives equally. A vigilant orientation does not optimize for accuracy in this sense; it accepts a higher rate of false positives (coding safe situations as threatening) in order to drive down false negatives, because the two errors carry vastly asymmetric costs. Misclassifying a threat as safe can be fatal, whereas misclassifying a benign situation as threatening is, in most cases, far less costly. (*To be clear*, a ‘false positive’ is encoding a situation as potentially threatening and requiring vigilance; i.e., coding that ambiguous stick-like-object as possibly a snake. What an officer does with that coding is a separate step, with its own and often far higher costs, particularly on the public, which is not the focus of this article.) An orientation calibrated to consequences rather than to accuracy will therefore tolerate many false positives to avoid a single catastrophic false

pathological. Instead, it is what an evo-devo model would predict.

As noted, developmental criminology applies this survival-oriented logic to residents of high-violence neighborhoods. Individuals who cannot reliably predict when danger will materialize develop heightened threat sensitivity, mistrust of others, and readiness for rapid response (e.g., Anderson, 1999). These are theorized as adaptive calibrations to ecological conditions, not distortions or cultural pathology. Officers operating in the same environments, subject to similar uncertainty and catastrophic downside risk, have the same evolved threat-detection and survival-oriented wiring. There is no theoretical basis for assuming that evolved wiring is selectively inoperative in people who carry badges.

In an evo-devo account, organizational culture and training are consequential, but their role is respecified. Rather than creating excessively danger-focused orientations *ex nihilo* or amplifying danger orientation far beyond what ecology warrants, cultural tools, values, and heuristics are viewed as adaptive (survival-oriented) responses grounded in the task environment. Officers are trained for worst-case scenarios *not* because such scenarios are common, but because they are possible, and the consequences of being unprepared when they occur can be irreversible. And survival is the basic goal. This is the same logic that organizes training in aviation, firefighting, and emergency medicine—domains where rare but catastrophic failure modes dominate training and preparation because frequency is the wrong metric when consequences are severe and irreversible. The persistence of danger-oriented culture across departments, generations, and reform efforts despite declines in fatal violence over the past decades may reflect not institutional pathology or egregious excess but ecological continuity and catastrophic risk. Police may be safer today than in yesteryear, but the general task environment, including uncertainty, threat, and catastrophic risk, remains.

6 Orientations, Functions, and Reform

As noted, this account encourages a reframing of police orientations and aspects of occupational culture focusing on their adaptive functions. However, this account is emphatically not a “defense” of police culture, in the same way that Anderson’s (1999) work on the street code is not a defense of the “code of the street” culture. Recognizing the adaptive nature of features of police vigilant orientations is perfectly compatible with attempts to understand and reform cultural elements that may do more harm than good. Indeed, this account is compatible with the insights of culture-pathology accounts, including Sierra-Arévalo and Stoughton’s accounts. An evo-devo approach (or reframing), however, requires that we recognize the potential adaptive functions of the police danger imperative and consequent cultural habits, even as we may seek to revise them, so that we are not asking officers to eliminate cultural tools or habits that provide some function without providing a (less harmful) replacement to fulfill that function. Furthermore, this account suggests the potential wisdom of retaining those routines or cultural habits that may not be harmful and serve a function despite being mismatched to the frequency of events.

Using a concrete police behavioral example, Sierra-Arévalo (2021; 2024) describes a “tactic used during traffic stops[, which] is to touch the trunk of the stopped vehicle before approaching the driver’s window” to check that it is closed to guard against the possibility of an ambush by a hidden assailant and to leave a fingerprint on the vehicle in case they are killed and the driver flees. This behavior seems wildly miscalibrated almost to the point of absurdity given the extreme rarity of officer ambushes, and the officers in Sierra-Arévalo’s ethnographic account acknowledge this scenario is extraordinarily unlikely. This trunk-tapping example in Sierra-Arévalo’s work is employed to starkly illustrate the miscalibration between base rates and practice—that the behavior persists even though the scenario is vanishingly rare. And, less explicitly, he argues that these behaviors reproduce the danger imperative—by keeping salient the possibility that the driver they stopped, whose trunk they are tapping, is the potential perpetrator of an ambush. In other words, he implies that these repeated safety rituals continually reaffirm the viewing of the world through the lens of lethal threat.

Sierra-Arévalo may be right, but this trunk tapping may not reflect a distorted perception of the

possibility of ambush or a dysfunctional culture response that amplifies extremely rare risks. Instead, the tapping may reflect a routine organized around managing uncertainty in an environment of catastrophic possibility: a very low-cost adaptive ritual that enhances a sense of control and aids in the psychological management of fear. Many occupations characterized by low-probability, high-consequence events develop these kinds of ritualistic practices. Surgeons perform scrub rituals. Firefighters and pilots check and recheck equipment. The objective risk reduction from a particular action may be minuscule, but the beneficial effects may be more substantial as they may not be primarily about objective risk reduction but instead adaptive coping. In this case, the coping functions might include providing a sense of control in an environment where outcomes are not fully controllable, structuring attention, reducing anxiety, and signaling professional competence to oneself and others. Thus, rather than excess or pathology, this almost costless ritual may serve as an adaptive coping mechanism in the face of uncertainty.

This reinterpretation is, of course, merely an evo-devo oriented conjecture, and we can all agree that trunk tapping is not a major problem or a reform target. The point, however, is that this model opens up a reframing of orientations and consequent cultural behaviors or scripts as serving adaptive functions given that they persist despite the wildly low probability that that trunk tap will serve an actual safety or detection role.

In general, this evo-devo reframing is useful, I argue, because it has implications for how we think about police culture and orientations more generally as well as reform. The ultimate goals police culture theorists, including Sierra-Arévalo and Stoughton, and other reform advocates identify—better treatment of the public and less unnecessary force—are compatible with the account advanced here. I certainly support those goals and believe that progress toward them is possible and worth pursuing. What I am instead challenging is the causal story cultural accounts tell about the cause of policing's problems and therefore what lever fixes them. If we misdiagnose, we build or emphasize the wrong intervention and remedy.

The clearest way to frame this is that dominant cultural pathology frameworks adopt a single-axis framing focusing on culture/values, which fail to recognize the humanness of the officers: evolved to avoid catastrophic risk, adopting a threat-first approach, with limited empathy and patience, especially under threat.¹² I submit that reform efforts must engage more seriously with the fact that policing is a dangerous profession, even if violent encounters are statistically rare, *and* police are human with evolved survival-oriented mechanisms, including for vigilance, that cannot be trained away. The functions that police danger orientations may serve, including catastrophic-error avoidance, psychological preparedness, and coordination of response under uncertainty, need to be understood and engaged with rather than overlooked or pathologized. Reforms seeking to change police orientations or culture without accounting for these functions and officers' humanness, or that attempt to redistribute catastrophic risk onto officers without explicitly acknowledging tradeoffs, are less likely to be effective, in part because they are incompatible with the officer being a human being and all that entails. The persistent resistance to culture-change reform may reflect less institutional stubbornness than a mismatch between prescribed orientation and ecological and evolutionary reality. Reforms are not hopeless. They just have to be built for humans, with evolved capacities oriented to survival and finite empathy and patience, especially under threat.

An ecologically grounded evo-devo model recognizing the ecology of the task environment and the

¹²There's an irony here worth acknowledging. Stoughton's critique of Warrior culture and Sierra-Arévalo's critique of the danger imperative are, in part, that these cultural frames dehumanize the public, by turning civilians into threats, "assholes", wolves, the enemy, and strips them of their individuality and dignity. And, yet, their frameworks, at times, commit the structurally identical error in the other direction: dehumanizing the officer, stripping out their physiology, cognition, and finite composure, reducing them to a bad-value bearing actor. They clearly recognize that one cannot understand the public by erasing their experiential reality and humanity—that a young Black man's lack of trust or hostility toward police has ecological causes, including those rooted in the desire to survive. They extend that ecologizing explanatory approach to the public but not the police. The officers get no structural account, no physiological account, no benefit of "this is what humans do under these conditions". For the officers, cognition, perception, and orientation, and behavior is culture. This is the asymmetry that is my focus.

evolved capacities/humanness of police officers is explanatory and does not, of course, prescribe a reform agenda. However, the approach does provide a theoretical umbrella from which to contemplate existing and possible reform efforts. I sketch some reforms that may be implied or consistent with this account to illustrate what this explanatory model implies. Specifically, reforms are more consistent with this account when they work with, rather than against, officers' evolved threat-detection systems, finite emotional resources, and exposure to uncertainty and catastrophic risk. Below, I sketch several reform directions that appear consistent with this evo-devo approach. These examples are tentative and illustrative rather than prescriptive, and most draw on existing reform and intervention efforts.

For example, reforms aimed at improving the quality of threat discrimination fit this framework better than reforms aimed at generally reducing danger orientation. Such reforms might help officers to more accurately distinguish genuine threat from ambiguous or benign cues, thereby reducing false positives (coding a situation as threatening) without increasing catastrophic false negatives—not lower vigilance, but higher-resolution vigilance. This works with the police-as-evolved-human, as such reforms do not ask officers to drop their guard, but they fine-tune the threat-detection instrument via training, *not* shifting values. Additionally, reform efforts that address the ecological conditions that generate and sustain danger orientation might be considered, recognizing that encounter outcomes are shaped by behavior on both sides of the interaction.¹³ Public-facing education about police encounters, including how civilians can clearly signal non-threat, reduce ambiguity, and avoid unnecessary escalation, is a legitimate complement to officer training, not a concession to victim-blaming.

Other reforms that may be consistent with an evo-devo approach include forms of de-escalation training that focus on default posture and verbal habit but do not ask officers to surrender tactical margin. Here, primary emphasis would be on certain tactics (tone, providing a face-saving exit, lawful-not-contemptuous commands; Todak & White, 2019; Wood et al., 2020). These are relatively low-cost gains: they can promote more positive police-public interactions without imposing an obvious tactical burden or safety tradeoff for officers. Other de-escalation techniques that trade against officer tactical advantage—for example, closing distance, holstering, or delaying control—may be appropriate, but they should be recognized as involving potential costs to the officer, including safety or control (Blair et al., 2011; White et al., 2025).

Another evo-devo consistent intervention targets a structural-physiological lever: engineering tactical/encounter design to create more time and distance for officers (e.g., Fyfe, 1986). Much excessive force traces to officers being in positions where they have milliseconds to decide, which increases the likelihood the threat-hijacked system is running and coarse, rapid appraisal dominates (Akinola & Mendes, 2012; Arnsten, 2009; Fyfe, 1986; Hine et al., 2018; Nieuwenhuys et al., 2012). Approach geometry, use of cover, positioning, not crowding a parked car are all tactics that buy time, and give threat-discrimination and de-escalation more room and time to operate (Engel et al., 2022; Police Executive Research Forum, 2016). This is potential force reduction through engineering the decision environment, not by asking for better decisions under a bad one—i.e., in a position that forces a split-second call. Split-second decisions are hard even absent danger (Fyfe, 1986; Taylor, 2021); we should try to design encounters that do not manufacture unnecessary split-second decisions.

Culture-change reform discussions invariably highlight the need to increase officer empathy, compassion, patience, composure, and the like—goals that are obviously beneficial. We all surely want more empathetic, compassionate people around us, including officers, but we also know that these capacities are diminished under stress, fatigue, and competing role demands (e.g., Nitschke & Bartz, 2023; Guadagni et al., 2014; Cameron et al., 2019). Thus, inasmuch as increasing these positive emotional responses of officers is a goal, this framework foregrounds the fact that patience, compassion, and composure are finite human emotional resources that are typically degraded in the context of threat

¹³To be very clear, recognizing that civilian behavior in encounters affects outcomes for all parties neither excuses police misbehavior nor is tantamount to assigning responsibility for police misconduct to civilians. We can educate the public in how to best signal non-threat to police who do not know us or our intentions, without shifting blame to civilians when officers behave badly. This is common sense, not victim blaming.

and hostility (Turgoose et al., 2017). Some reform or organizational implications of this fact about humans include rotation out of the most corrosive assignments, workload and back-to-back shift limits, real mental health infrastructure, and supervision designed to detect depletion rather than only punish its symptoms. Such interventions work toward the same goals as the culture-change efforts, but they supply the input conditions that make the output more achievable. Aviation, medicine, and truck-driving manage human factors such as fatigue as a safety variable explicitly; this suggests that fatigue-management reforms, including modified shift lengths and limits on back-to-back shifts, which some evidence suggests are beneficial, are at least theoretically consistent with the account advanced here (see Amendola et al., 2011; James et al., 2018; Riedy et al., 2019; Vila, 2000).

Additionally, rather than adopting it as a value, we might build a dignity floor—as standard, minimally acceptable treatment of the public—as more of a trained reflex or habit, that is, a procedural skill drilled to the level of automaticity, which can survive the threat hijack the way trained motor skills do, rather than treating it as more of a values issue. Don't humiliate, don't use force as a punishment for non-deference, issue lawful commands not contemptuous ones, offer basic procedural courtesy—these are all potentially scriptable and habit-able, and can be trained to hold more under load than felt empathy or compassion.

Finally, and consistent with arguments from culture reformers, an evo-devo framework is also compatible with reforms that change incentive structures to better reflect what we want from officers without changing anyone's values or heart. Officers are rewarded for arrests, stops, and tickets, which can incentivize aggressive, curt, adversarial encounters (e.g., Stoughton, 2016). The most obvious change is to stop rewarding volume: remove arrest, stop, and citation counts as performance metrics and promotion criteria, and eliminate formal and informal quotas outright. From this perspective, the theoretical test for an incentive reform is twofold: it must remove a bad incentive, and it must not require the officer to be less vigilant or to accept catastrophic risk without a clear, justifiable tradeoff. In this approach, the focus shifts from the culture or values inside the officer to what is measured, rewarded, and removed around them, which is the primary place reform gets traction on a human being who responds to incentives, cannot simply lower their guard, and does not know who the person they stopped is, and, therefore, cannot simply be taught to trust that this person poses minimal risk when the cost of mistrust can be catastrophic. We are simply not wired that way.

7 What This Account Does Not Claim

Because the argument advanced here may be misread, I want to state plainly and concisely what this account does not claim or imply. First, this account does not hold that police and the residents of high-violence neighborhoods are analogous in their orientations or exposures, full stop. Residing in an unpredictable, impoverished, relatively high-violence neighborhood is different from policing it, routinely or occasionally. Unlike residents of high crime communities, officers have non-work lives that typically take them outside of the more dangerous neighborhoods and into more predictable interactions. These experiences undoubtedly modulate some of the lessons police absorb in their work lives, shaping their general orientations in various ways. This article should not be interpreted as arguing for parallelism in the general orientations of police and offenders, broadly. Instead, I have focused on the vigilant, danger orientation of the police while on duty, in particular.

The differences in education, training, supervision, and degree of exposure that distinguish officers from the residents of the neighborhoods they police are real, and the framework predicts that the resulting orientations differ accordingly. At the same time, some form of “code switching,” is surely involved where officers respond differently to a random interaction in their residential neighborhoods than to random strangers whom they stop or whose dispute they are called to intervene. That is to say, the lived ecologies of police officers are obviously different from the lived ecologies of those in dangerous neighborhoods, which is why the psychosocial orientations of offenders and officers are expected to differ in important ways. Future work will hopefully begin to move beyond culture and orientations as pathologies and address these nuanced differences with rigor and curiosity.

Second, and in the same vein, this account does not claim that officers undergo the same developmental

calibration as those raised in relatively dangerous, unpredictable environments. In contrast to earlier life calibration to dangerous contexts, officers' vigilance and danger orientations are calibrated largely in adulthood, through the attenuated but real plasticity that the threat-detection system retains across the lifespan. By contrast, residents experience qualitatively different exposure profiles, including during the heightened-plasticity windows of childhood and adolescence. The orientations therefore differ not only in their content, but also in their depth, malleability, and context-dependence.

Third, this account does not claim that police vigilance is perfectly or optimally calibrated. Adaptive does not mean accurate, optimal, or benign (Chisholm, 1999; Ellis et al., 2012). An orientation calibrated to avoid catastrophic error will generate many false positives, and the framework is fully compatible with that orientation being dysfunctional in particular cases or at particular times (e.g., after a recent severe officer injury in the line of duty). To explain an orientation as a response to ecological conditions is not to deem it ideal, beyond question, or even desirable.

Fourth, this account takes no position on the political and normative question of how risk *ought* to be distributed between officers and the public, including how much risk we expect officers to assume as part of their jobs. That is a political-evaluative question. The account offered here is explanatory, and its explanatory claims hold regardless of how the normative question is answered.

Fifth, explaining an orientation is not excusing, much less endorsing, the conduct that may follow from it. Criminology routinely explains the orientations of those in high-violence environments—including readiness for violence—without thereby excusing violent acts. The same analytic-evaluative distinction applies to police. Moreover, this account focuses on vigilance and danger orientation, not misconduct or force. Nothing here implies that reforms aimed at reducing police violence against civilians should not be pursued, obviously.

Sixth, and for the same reason, the account does not imply that reform is hopeless. This account instead posits that reform is more likely to succeed when it works with the adaptive logic of officer orientations rather than against it. The account reframes reform efforts, targets, and approaches rather than foreclosing them.

Finally, the account does not claim that existing police-culture scholarship is silent about ecology. It is not. Cultural-pathology accounts acknowledge that policing involves danger, and they gesture toward the environments in which officers work. My critique is not that they deny danger, but that these accounts bracket ecology from their explanatory and reform focus, locating both the cause of police orientations and the target of reform in occupational culture. This evo-devo account seeks to correct that bracketing of ecology. Relatedly, this account should not be read as suggesting police occupational culture has no effect, which would be inconsistent with everything we know about human behavior. Cultural transmission—training, lessons, and symbolic exchanges that officers engage in—is not merely epiphenomenal, but it is significantly shaped by the task ecology, including the rare, but catastrophic, inherent dangers of policing and the 'Warrior' role that they are sometimes called to undertake.

8 Conclusion

Over the past half-century, most criminological theory has focused on ecologizing offending, theorizing how dangerous, unpredictable environments calibrate psychological systems toward orientations that increase the risk of violence and street crime and away from Western notions of success, including health, wealth, educational attainment, longevity, and the like. Through phylogenetic evolution and ontogenetic processes, we adapt in ways to promote survival and reproduction. This ecological developmental logic has not been applied symmetrically to police, whose vigilant and threat-sensitive orientations are often explained as cultural pathologies generated and sustained by dysfunctional occupational cultural practices. In this article, I have argued that the asymmetry is scientifically unwarranted and practically costly.

The argument advanced here is that police danger orientations may be better understood as contextually grounded responses to an ecology of uncertainty, potential violence, and catastrophic risk than as primarily the products of a dysfunctional occupational culture. Culture and training matter, but they are not best treated as primary causes detached from the task environment in which officers operate.

From an evo-devo perspective, vigilance, threat sensitivity, and preparedness for rare but severe violence are intelligible as adaptive responses to ecological conditions, even when they carry costs for officers, civilians, and police-public relations. Ecologizing police orientations therefore shifts the explanatory question from why officers have absorbed a pathological culture to how policing environments generate and sustain danger-oriented repertoires and the functions that these cultural frames and tools serve.

Although my reading of this work suggests it is unlikely, it is possible that police cultures scholars will consider this account compatible with the culture-as-problem models, and that my “pathology” framing overstates the issues they raise. It is not my view that the police cultures scholars themselves believe that culture arises *ex nihilo* or that their models ignore the danger of policing; indeed, Stoughton was a police officer and describes his fear on the job. Moreover, Sierra-Arévalo’s rich ethnography captures officers’ fears and awareness of the reality of violence; that is in large part the focus of his work. As is hopefully clear, this is not a ‘culture is irrelevant’ screed (or one arguing that ‘they think culture is everything’). Instead, this article calls for interpreting cultural phenomena more explicitly in the ecological environment, and it challenges the partial—and, I argue, likely ineffective—calls to reform an “excessive culture” without taking seriously the functions these cultural frames and tools serve in the task ecology. To wit, this is not a call to ignore culture, but to explicitly account for ecology and humans’ survival-oriented wiring in models of police orientations.

To be clear, again, applying an ecological evolutionary-developmental lens to police orientations does not excuse misconduct, much less justify excessive force, nor does it suggest that all of police culture is an adaptation. Instead, this approach takes seriously the ecology in which officers work and the functions of various cultural elements for the task ecology. This approach also does not suggest that police and offenders are analogously situated. Officers hold state-sanctioned coercive authority and bear institutional accountability that offenders do not. These differences matter. They do not, however, alter the fact that officers and the people they police share the same evolved threat-detection and survival-oriented wiring, shaped over millennia to prioritize self-preservation under conditions of uncertainty and catastrophic risk. We cannot simply ask officers to override that wiring by changing the cultural frame of their training, any more than we can ask residents of high-violence neighborhoods to override theirs by changing how they think about the street.

As noted, the focus of this account is officer vigilance and concern with danger, which has been identified as a (or the) pathology leading to excessive, avoidable police violence against citizens. However, vigilance (my focus here) and officer force are not one and the same. Most of the time, vigilance does not result in force, as all accounts, including this one, recognize. Viewing vigilance as adaptive does not entail acceptance of the force that may follow from it, and this account is compatible with—indeed, encourages—reforms that seek to further decouple vigilance from force.

Importantly, ecologizing police orientations is not a conservative argument for the status quo, a defense of police misconduct, or even an exculpation of police culture. Instead, this approach is an effort to provide a more complete *explanatory* account of the conditions that shape police behavior, orientations, and culture, to enhance understanding and perhaps inform and refine reform.

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