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Human–Technology Collaboration Patterns Across Contemporary Organizational Work Systems

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Abstract

Contemporary work systems increasingly distribute analysis, execution, monitoring, and decision activity across employees and intelligent technologies, yet organizational scholarship often classifies these relations with broad labels such as automation, augmentation, or human-in-the-loop design. Those labels obscure who actually performs the focal task, who holds consequential authority, whether contributions are reciprocal, and who oversees whom. This Original Taxonomy Article develops an evidence-informed but explicitly unvalidated classification of human–technology collaboration. The proposed taxonomy distinguishes assistance, substitution, oversight, and coworking arrangements and treats hybrid and transitional forms as configurational or temporal combinations rather than as a higher-order maturity stage. The approach separates task execution from decision authority, technological capability from legitimate responsibility, formal human presence from consequential influence, and collaboration form from organizational outcome. Assistance describes bounded technological input with retained human integration; substitution describes transfer of bounded task execution; oversight captures directional monitoring, validation, evaluation, or control; and coworking describes recurrent reciprocal task interdependence. The taxonomy further proposes that classification should be based on enacted work relations rather than technology labels or claimed implementation strategies. Its implications concern work design, authority allocation, governance, measurement, and longitudinal research on movement between arrangements. The synthesis does not establish causal superiority, universal applicability, validated thresholds, or implementation readiness. Empirical testing should examine discriminant validity, multilevel effects, temporal transitions, contextual moderators, and whether the proposed categories explain organizational phenomena beyond simpler automation–augmentation continua.

Keywords: Classifying human–technology collaboration, Conceptual foundations and classification dimensions, Assistance arrangements, Substitution arrangements, Hybrid and transitional forms, Collaboration taxonomy

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Introduction

Organizations increasingly combine human judgment with systems that predict, generate, allocate, monitor, recommend, or execute work. A persistent conceptual difficulty is that the same technology can be described as automating work in one setting and augmenting it in another, while both processes may coexist within a single organizational arrangement. The automation–augmentation paradox therefore challenges accounts that treat technological replacement and human

enhancement as mutually exclusive endpoints [1]. For classification purposes, the focal problem is not whether a technology is broadly "automating" or "augmenting," but how the enacted work relation allocates execution, authority, interdependence, and oversight.
Prior theory already indicates that human–technology agency can assume qualitatively different forms rather than one uniform pattern [2]. Learning algorithms also introduce organizational properties such as black-boxed performance, anticipatory quantification, and embedded politics that can alter expertise, coordination, and control without necessarily changing the nominal job title or formal reporting structure [3]. These observations imply that classification should not begin from the artifact alone. It should begin from the work relation in which the artifact is embedded and ask what humans and technologies are actually permitted, expected, and able to do. This shift also avoids treating a nominally identical system as organizationally equivalent across occupations or workflow stages.
A work-design perspective further suggests that organizational consequences depend partly on how digital technologies alter job demands, resources, autonomy, feedback, and other features of work rather than on technological presence itself [4]. This matters because identical labels can conceal different arrangements: an "AI assistant" may merely suggest text, may execute a complete subtask, may monitor an employee, or may participate recursively in a shared workflow. Treating these arrangements as equivalent risks conflating capability with authority and employee exposure with substantive collaboration. It also risks inferring organizational-level consequences from individual encounters with technology when the relevant work design, governance, and coordination structures differ.
This article therefore develops an Original Taxonomy Article that proposes four primary arrangements—assistance, substitution, oversight, and coworking—plus hybrid and transitional configurations. A relational view of emerging technology supports the premise that technologies acquire organizational meaning through evolving relations rather than fixed intrinsic effects [5]. Building on that premise, the proposed taxonomy classifies enacted relations, not technological brands or maturity stages. It is intended as a conceptual instrument for sharper theory development and empirical testing, not as a validated causal model, universal design prescription, or claim that one arrangement is inherently superior. Its central contribution is a common vocabulary for comparing configurations without treating collaboration form itself as an outcome.

Conceptual foundations and classification dimensions

The first foundation concerns technological agency. Artificial intelligence can differ from conventional information systems through varying degrees of autonomy, learning, and inscrutability, creating distinct coordination and control problems [6]. These properties matter for classification because a system capable of acting independently may still occupy an assistance role if humans retain consequential integration, whereas a less sophisticated system may exercise substantial oversight if it structures access, ratings, or workflow. Technical sophistication therefore cannot serve as a proxy for collaboration form. Nor does a system's capacity to generate an action establish that it possesses organizational authority to authorize that action.
The second foundation concerns delegation. Delegation to and from agentic information systems involves appraisal, distribution, and coordination of responsibilities rather than a binary choice between human and machine action [7]. Organizational decision structures likewise may allocate decisions fully to humans or AI, combine them sequentially, or aggregate their inputs [8]. Drawing on these distinctions, the taxonomy proposes four classification dimensions: focal task-execution locus, consequential decision-authority locus, reciprocal task interdependence, and oversight direction. Accountability allocation is treated separately because transferring execution does not itself demonstrate legitimate transfer of responsibility. These dimensions can operate at task, role, team, or organizational levels and should not be inferred across levels without evidence.
The third foundation is complementarity. Hybrid-intelligence scholarship conceptualizes value as arising from combinations of human and machine capabilities rather than presumed universal superiority of either actor [9]. The proposed taxonomy uses complementarity as a possible mechanism within arrangements, not as a category or outcome. An assistance arrangement may be complementary or ineffective; a coworking arrangement may be reciprocal but poorly coordinated. Classification therefore describes how work is organized, while explanations of performance, fairness, learning, or well-being require separate evidence. The dimensions are proposed analytic distinctions and do not constitute validated thresholds, mutually exclusive psychological states, or proof that any one configuration is universally preferable.

Assistance arrangements

Assistance arrangements are proposed here as configurations in which technology supplies bounded information, prediction, generation, analysis, or task input while a human retains consequential integration or authorization of the focal work. This definition is consistent with arguments that AI can extend analytical processing while humans contribute contextual judgment under uncertainty and equivocality [10]. Assistance therefore concerns the allocation of task contribution, not the desirability of the outcome. A technology can remain assistive even when its recommendation is rejected, creates extra work, or performs poorly. The proposed boundary is consequential human integration: the person must do more than remain formally attached to a process whose execution has effectively shifted elsewhere.

Evidence on reliance also cautions against equating availability with use. Experimental work on algorithm appreciation shows that people can weight algorithmic advice more strongly than human advice, but this tendency varies when individuals compare algorithms with themselves or possess relevant expertise [11]. Assistance is consequently enacted through both system capabilities and human uptake. Reliance may reflect perceptions of competence, task characteristics, confidence, organizational expectations, or interface design; it does not by itself establish that technological advice is accurate, legitimate, or beneficial. Conversely, low reliance does not prove poor technological capability, because users may reject advice for reasons unrelated to objective performance.

Organizational evidence further shows why assistance should be differentiated from simple "human plus AI" labels. In a field setting, sequential AI assistance reallocated portions of employee work and was associated with different downstream creativity effects across skill levels [12]. The arrangement therefore changed not only information availability but also the structure and sequencing of work. Such evidence supports treating skill as a boundary condition rather than assuming homogeneous augmentation. It does not establish that sequential assistance will produce the same outcome across occupations, technologies, or organizational contexts. Individual benefits also should not be automatically generalized to team coordination or organization-level performance.

Assistance can generate simultaneous resources and demands. Daily use of augmentation-oriented AI has been linked to learning-related benefits alongside information-overload challenges [13]. This duality suggests a proposed boundary principle: assistance should not be classified by whether it improves performance or employee experience. Those consequences are empirical questions that may vary with workload, expertise, openness, task complexity, and organizational support. Assistance is instead identified by retained human integration of technological contribution. When the system begins executing the bounded focal task itself, the relation approaches substitution rather than simply "more assistance," although the same workflow may contain both arrangements at different stages.

Substitution arrangements

Substitution arrangements are proposed as configurations in which technology assumes execution of a bounded work or managerial function previously performed by a human. This definition is intentionally narrower than job replacement. Algorithmic-management research shows that technologies can undertake functions such as monitoring, scheduling, goal setting, performance management, compensation-related administration, or termination-related processes [14]. The relevant taxonomic question is which focal function has moved to technological execution, not whether a whole occupation has disappeared. Human accountability, exception handling, or downstream judgment may remain even when execution shifts. Substitution is therefore a task- or function-level property before it can become a defensible role- or occupation-level claim.

Substitution also should not be equated with a simple loss of autonomy. Research on platform work demonstrates that workers may experience substantial algorithmic control while retaining discretion over when or where to work [15]. Autonomy can therefore persist in one dimension while technology substitutes for coordination, matching, evaluation, or other organizing functions in another. This distinction prevents the taxonomy from treating "human freedom" and "technological execution" as opposites. It also separates descriptive configuration from normative evaluation: a substituted function may be efficient, constraining, enabling, contested, or some combination of these depending on context. Formal choice over schedule, for example, does not establish consequential influence over allocation or evaluation.

Qualitative evidence from online labor platforms similarly shows that algorithmic matching and control can organize work while generating tensions around execution, compensation, and worker belonging [16]. The proposed category therefore focuses on transfer of bounded execution rather than presumed organizational consequences. Substitution may coexist with human oversight, employee discretion, or later human intervention, producing hybrid configurations that require more than one label at the workflow level. Transfer of task execution also does not establish transfer of legal, ethical, or organizational responsibility. A system can execute a decision rule while authority to justify, revise, or answer for that rule remains organizationally human.

A further proposed boundary concerns partial substitution. Work may be decomposed so that technology executes standardized components while humans retain exception handling, contextual interpretation, relationship work, or final authorization. Such arrangements should not be classified from the percentage of work automated or from vendor descriptions. The appropriate unit is the focal task component and its enacted authority structure. This permits substitution to be compared across professional, platform, administrative, and knowledge work without assuming that identical functional transfer carries identical consequences.

Table 1 organizes the evidence, constructs, relationships, uncertainties, and boundary conditions required for definitions, constructs, and conceptual boundaries for human–technology collaboration patterns across contemporary organizational work systems.

Table 1. Definitions, constructs, and conceptual boundaries for Human–Technology Collaboration Patterns Across Contemporary Organizational Work Systems.

Construct or component	Definition	Problem addressed	Distinction from adjacent concepts	Proposed role	Uncertainty	Boundary statement
Collaboration arrangement	Enacted human–technology work relation	Vague labels	Not technology type	Proposed umbrella	Temporal stability	Category ≠ quality
Task-execution locus	Who performs focal task	Automation ambiguity	Separate from authority	Proposed dimension	Task fragmentation	Execution ≠ accountability
Decision authority	Who finalizes, rejects, overrides	Capability conflation	Separate from execution	Proposed dimension	Informal authority	Capability ≠ legitimacy
Reciprocal interdependence	Contributions condition subsequent work	Assistance–coworking overlap	Beyond co-presence	Proposed dimension	Stage variation	Reciprocity ≠ synergy
Oversight direction	Who monitors, validates, constrains whom	Human-in-loop ambiguity	Separate from execution	Proposed dimension	Nominal oversight	Visibility ≠ performance
Assistance	Technology supplies bounded input; human integrates	Broad augmentation label	Human retains integration	Proposed category	Uptake variation	Benefit not assumed
Substitution	Technology executes bounded prior human function	Job-replacement conflation	Function, not occupation	Proposed category	Scope variation	Responsibility need not transfer
Oversight	Monitoring, evaluation, validation, authorization, or control dominates	Direction ambiguity	Not mere task execution	Proposed category	Influence may be nominal	Presence ≠ influence
Coworking	Recurrent reciprocal task contribution	Tool–teammate ambiguity	Beyond one-way advice	Proposed category	Reciprocity requires testing	Interdependence ≠ equality
Hybrid/transitional form	Categories coexist or shift across stage/time	Static classification	Attribute, not maturity tier	Proposed dynamic marker	Triggers uncertain	Movement ≠ progress
Accountability boundary	Responsibility remains analytically separate from execution	Responsibility conflation	Governance, not capability	Proposed safeguard	Formal/enacted gaps	Execution ≠ accountability

Note. Taxonomic definitions, proposed roles, uncertainties, and boundary statements are original synthesis; the Evidence basis column identifies literature used to discipline those proposals.

Oversight arrangements

Oversight arrangements are proposed as configurations in which the defining human–technology relation is monitoring, evaluation, validation, authorization, or control rather than primary execution of the same focal task. Algorithmic control can operate through restricting, recommending, recording, rating, replacing, and rewarding worker activity [17]. This evidence supports a technology-over-human subtype in which systems structure what becomes visible, consequential, or actionable. Yet visibility is not equivalent to performance, and algorithmically generated evaluations do not establish objective validity merely because they are systematic. The taxonomy therefore treats oversight direction as distinct from both task execution and decision authority.

Oversight also has a legitimacy dimension. Experimental evidence indicates that algorithmic human-resource decisions can be perceived as procedurally less fair when people experience them as reductive or insufficiently contextualized [18]. Such findings do not prove that algorithms are intrinsically unfair; they show that procedural experience cannot be inferred from technical consistency or intended bias reduction. A technology-over-human oversight arrangement may therefore vary in perceived legitimacy according to contextualization, explanation, contestability, and the organizational significance of the decision.

The reverse subtype is human-over-technology oversight. Field evidence from professional diagnostic work shows that meaningful engagement with opaque AI depends on practices through which professionals interrogate outputs and relate them to expert knowledge [19]. The proposed boundary is consequential influence: nominal review access is insufficient if humans cannot understand, challenge, redirect, or override what matters. “Human in the loop” should therefore not be treated as a taxonomic category by itself. Human presence may coexist with substitution, assistance, or coworking depending on what the person actually does. Neither subtype implies effective, fair, or accurate oversight; those are outcomes requiring separate assessment.

Oversight also requires level-of-analysis discipline. An employee may experience a rating system as controlling even when managers retain formal authority, while organizational policy may describe the same system as advisory. The proposed classification should record the enacted locus of intervention at the focal level and should not translate individual perceptions directly into organization-level claims. Where monitoring, recommendation, and final authority are distributed across levels, the arrangement can be coded as hybrid rather than forced into a single organization-wide label.

Coworking arrangements

Coworking arrangements are proposed as configurations in which humans and technology make recurrent, interdependent contributions to the same evolving work process, such that one party's contribution materially conditions the other's subsequent contribution. Research framing machines as teammates identifies collaboration questions that differ from passive-tool use, including coordination, communication, team design, and institutional implications [20]. The proposed definition is deliberately behavioral rather than anthropomorphic: coworking does not require attributing human social status, consciousness, or equivalent moral agency to technology. It requires reciprocal task interdependence.

Reciprocity creates allocation problems. Experimental work on human–AI collaboration shows that productive delegation depends partly on whether humans can accurately judge their own competence relative to AI; poor metaknowledge can prevent effective allocation even where complementary capabilities exist [21]. Coworking therefore should not be inferred simply because both actors contribute. The relevant question is whether contributions are coordinated in ways that allow task responsibility to shift or respond to relative competence. This distinction separates reciprocal collaboration from one-way advice delivery.

Coworking may also have consequences beyond immediate task performance. Multi-study evidence indicates that workplace interaction with AI can alter employees' social experiences and produce effects extending beyond the immediate work episode [22]. Such findings justify treating social and relational consequences as possible boundary conditions rather than defining properties of coworking. They do not establish that AI collaboration necessarily creates isolation, affiliation needs, or improved performance. The taxonomy therefore classifies the arrangement independently of its desirability: reciprocal interdependence can be productive, burdensome, socially compensatory, or socially disruptive depending on context and design.

A further boundary concerns symmetry. Coworking does not require equal task shares, identical expertise, or equivalent authority. A human may retain final authorization while an AI contribution repeatedly changes what the human does next, and the human response may subsequently alter the system's next input or task allocation. What matters is recurrent mutual conditioning of work. This allows unequal but genuinely interdependent arrangements to be distinguished from assistance, where technological contribution remains predominantly one-directional.

Hybrid and transitional forms

Hybrid and transitional forms address a limitation of static labels: the same organization, worker, or workflow can contain more than one collaboration arrangement. Longitudinal field research shows that introducing algorithmic technologies can alter regimes of knowing and organizational authority through an evolving process rather than an instantaneous switch [23]. This supports treating collaboration form as potentially temporal. A system initially used as assistance may later acquire substitution or oversight functions, while human authority can expand, contract, or be redirected as organizational practices stabilize.

Ethnographic evidence likewise shows that groups confronting analytical technologies may develop different validation and black-boxing practices despite operating in the same broader organization [24]. Formal implementation therefore cannot determine category membership on its own. The enacted relation may diverge across occupations, teams, or local routines. Hybrid status is proposed for simultaneous combinations across task components, whereas transitional status refers to movement across arrangements over time. Neither designation implies greater technological maturity or organizational progress.

Workflow stage provides another source of variation. Evidence from service-recovery settings suggests that different stages of a process can call for different combinations of human and AI capabilities [25]. Generalizing beyond that setting requires testing, but the logic supports a task-stage view in which assistance, substitution, oversight, and coworking can occur sequentially within one process.

Hybrid classification also prevents false precision at the job level. A role may contain assistive drafting, substituted scheduling, algorithmic performance oversight, and reciprocal human–AI problem solving at the same time. Calling the whole job "augmented" would erase these differences. The proposed taxonomy therefore recommends task-component coding first, followed by a configurational description at role or workflow level. Temporal claims should require repeated observation rather than inference from a single implementation snapshot.

Table 2 organizes the evidence, constructs, relationships, uncertainties, and boundary conditions required for proposed mechanisms, relationships, and organizational consequences in human–technology collaboration patterns across contemporary organizational work systems.

Table 2. Proposed mechanisms, relationships, and organizational consequences in Human–Technology Collaboration Patterns Across Contemporary Organizational Work Systems.

Mechanism or relationship	Antecedent	Mediator or process	Moderator	Expected consequence	Rival explanation	Validation requirement
Assistance–learning pathway	AI input	Knowledge acquisition	User openness	Learning resource	Self-selection	Longitudinal or experimental replication
Assistance–overload pathway	High AI information	Processing demand	Workload	Strain or reduced recovery	General workload	Separate AI-specific demand effects
Skill-differentiated assistance	Sequential AI support	Work redesign	Employee skill	Uneven creativity effects	Prior ability	Cross-context replication
Substitution–work redesign	Algorithmic execution	Shifted job demands/resources	Human influence	Changed job experience	Concurrent redesign	Task-level measurement
Oversight–legitimacy pathway	Algorithmic decision authority	Perceived reductionism	Decision context	Procedural-fairness concerns	Outcome favorability	Manipulate procedure separately
Human oversight–engagement	Opaque AI output	Interrogation practice	Expertise	More substantive review	Local professional norms	Compare professions/settings
Coworking–delegation pathway	Reciprocal allocation	Competence calibration	Relative capability	Coordination quality	Task familiarity	Behavioral delegation measures
Transition pathway	Technology implementation	Changing knowing/authority	Local practice	Configuration movement	Broader change program	Repeated configuration measures

Note. Expected consequences summarize evidence-informed possibilities rather than guaranteed effects. Category-to-outcome links not directly established by the cited study remain proposed and require independent validation.

Proposed collaboration taxonomy

The proposed Collaboration Taxonomy classifies enacted work relations rather than technology labels. Trust is treated as a moderator of enactment rather than a defining category because empirical research shows that trust in AI varies with characteristics such as reliability, transparency, representation, and context, while the evidence base remains heterogeneous [26]. Prior delegation, organizational decision-structure, and hybrid-intelligence accounts are consistent in showing that human and technological contributions can be distributed through different task, authority, and capability configurations [7-9].

Figure 1 presents the original conceptual synthesis for collaboration taxonomy, showing how the article's principal constructs, mechanisms, uncertainties, and decision boundaries are connected.

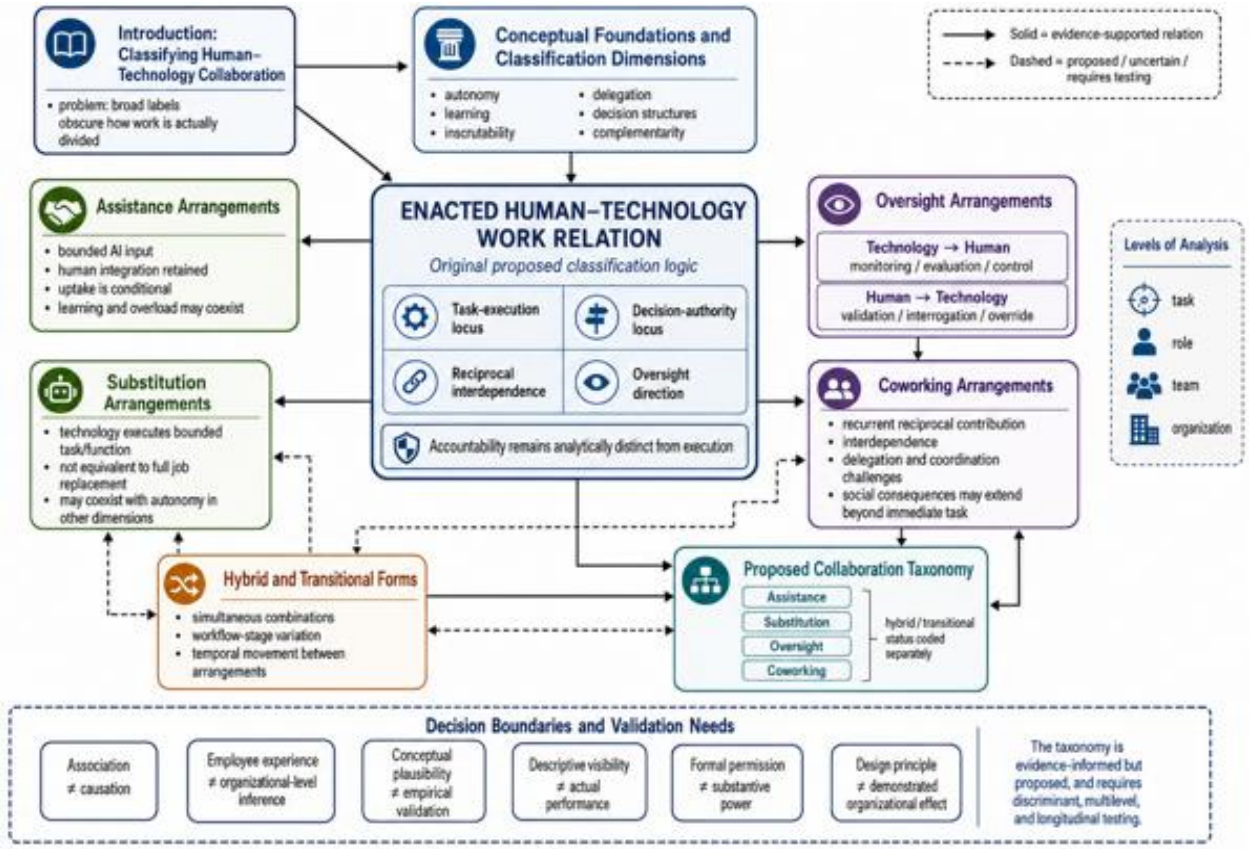

Figure 1. Collaboration Taxonomy.

The figure is an original conceptual synthesis developed for "Human–Technology Collaboration Patterns Across Contemporary Organizational Work Systems." Arrows and grouping indicate evidence-supported or proposed relationships rather than measured effect sizes. The figure does not represent a validated causal model, universal organizational prescription, regulatory determination, or deployment-ready system.

At its core, the taxonomy proposes four diagnostic questions: who executes the focal task, who holds consequential decision or override authority, how reciprocal task interdependence is, and who oversees or validates whom. Assistance describes bounded technological input with retained human integration; substitution describes technological execution of a bounded function; oversight describes directional evaluation, validation, or control; and coworking describes recurrent reciprocal contribution. Hybrid and transitional forms are recorded separately when categories coexist across task components or change across stages or time.

The categories are deliberately nonhierarchical. AI advice can improve individual decision accuracy while reducing diversity in uniquely human knowledge, illustrating why individual performance cannot establish organizational superiority of an arrangement [27]. Reliance also varies with task characteristics, including perceived subjectivity [28]. Organizational use further raises data, accountability, fairness, causal-inference, and employee-reaction constraints that cannot be resolved by capability alone [29]. The proposed decision rule is therefore to classify from enacted execution, authority, reciprocity, and oversight, then evaluate outcomes separately. The taxonomy remains a conceptual proposition requiring discriminant, predictive, temporal, and multilevel validation.

The taxonomy yields six proposed propositions rather than empirical conclusions. First, multidimensional classification should differentiate arrangements more precisely than a single automation–augmentation continuum. Second, assistance becomes substitution when consequential focal execution transfers to technology, even if accountability remains human. Third, oversight direction matters because technology-over-human and human-over-technology arrangements allocate intervention rights differently. Fourth, coworking requires reciprocal rather than merely sequential contribution. Fifth, category membership may change across stages or time. Sixth, no category should be treated as a maturity rank. Each proposition is falsifiable and should be revised if empirical category boundaries fail to hold.

Design and research implications

The first implication is measurement. Existing scholarship on advanced technologies and human resource management is heterogeneous across technologies, contexts, constructs, and outcomes, leaving substantial room for more discriminating multilevel research [30]. Empirical tests should therefore measure each proposed dimension directly rather than asking respondents whether their organization "uses AI collaboratively." Task execution, override authority, reciprocal dependence, and oversight direction should be observed or measured separately, and category membership should be established independently of performance, fairness, or well-being outcomes. Longitudinal designs are particularly important because transitional forms predict that the same system may occupy different categories over time.

The second implication is governance. Fair organizational AI design requires attention to multiple justice dimensions and to mechanisms through which affected employees can obtain explanation, influence, or redress [31]. Evaluation of human–technology arrangements should therefore extend beyond technical performance to procedural legitimacy, mechanisms for fairness and redress, and potential consequences for the quality of work [18, 31, 32]. These considerations do not make one taxonomic category universally preferable; they specify additional outcomes and safeguards that should be examined after the arrangement is classified.

Research designs should also distinguish formal permission from substantive power. An interface may technically offer an override button while incentives, time pressure, opaque reasoning, or organizational norms make override practically inconsequential. Conversely, workers may develop informal practices that restore influence not visible in policy documents. Studies should therefore combine system logs, observations, interviews, experiments, and policy records where feasible. Such triangulation would help determine whether stated collaboration architecture corresponds to enacted authority and would reduce the risk of classifying arrangements from organizational rhetoric alone.

Research should also test rival taxonomies. Experiments could manipulate task-execution locus, override rights, or reciprocal dependence while holding technology constant. Field studies could compare teams using the same system under different authority structures. Multilevel designs should separate employee perceptions from team coordination and organizational policy, while transition studies should identify events that move an arrangement between categories. Because organizational AI may create coexisting benefits and risks, work-quality consequences should remain explicit rather than being inferred from technological sophistication [32]. Evidence that the four categories lack discriminant validity, fail to predict distinct mechanisms, or add no explanatory value beyond simpler continua would constitute grounds to refine or reject the proposed taxonomy.

Design implications should remain conditional. Organizations considering changes in task allocation can use the taxonomy to specify which relationship they intend to create and which rights must accompany it, but the framework does not determine whether that choice is desirable. The same assistive or substitutive configuration may have different implications across occupations because stakes, expertise, institutional obligations, and opportunities for contestation differ. Research should therefore examine boundary conditions before translating conceptual categories into practice.

Conclusion

Human–technology collaboration is increasingly central to contemporary work, but broad labels such as automation, augmentation, and human-in-the-loop design do not reliably reveal how work is actually divided. This Original Taxonomy Article proposes a relational classification based on enacted task execution, consequential decision authority, reciprocal interdependence, and oversight direction. Those dimensions organize four primary arrangements—assistance, substitution, oversight, and coworking—while hybrid and transitional forms capture simultaneous or changing configurations.

The contribution is conceptual rather than validated. The categories are not maturity levels, performance rankings, or managerial prescriptions. Technology can execute without legitimately holding accountability; humans can remain formally present without exercising meaningful influence; monitoring can increase visibility without establishing performance; and reciprocal interaction can exist without producing beneficial collaboration. These distinctions create testable boundaries for future research and more precise comparison across organizational settings.

The taxonomy should therefore be judged by future evidence: whether its categories can be measured reliably, distinguished empirically, tracked over time, and shown to explain mechanisms or consequences beyond simpler classifications. Until such testing occurs, it offers a proposed vocabulary and research architecture for examining contemporary human–technology work relations rather than a universal model of how organizations should design them.

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