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PUSHING THE FRONTIERS OF INNOVATIVE RESEARCH

Defence Research in European Universities
A Conceptual Framework

Professor Geraint Rees
UCL, Vice-Provost (Research, Innovation & Global Engagement)

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LERU Office
Minderbroedersstraat 8
3000 Leuven, Belgium

Defence Research in European Universities: A Conceptual Framework

1. Introduction

This paper identifies the core structural tensions that LERU research-intensive universities face when considering defence and security-related research. Rather than offering prescriptive solutions, it seeks to clarify where genuine value conflicts exist and why procedural improvements alone cannot resolve them. The framework is intended to help institutional leadership articulate their position more coherently and identify which trade-offs they are willing to make.

2. Central Challenge

We are experiencing significant changes in societal expectations of universities in relation to defence research, accompanied by very different views about the legitimacy of participation in such research. The current debate in universities regarding these issues typically confuses three distinct questions: what universities should do (normative), what they are entitled to do (legal/governance), and how they should decide (procedural). Most institutional discussions focus on the third while disagreeing fundamentally about the first two. This can produce endless procedural refinement without resolving underlying conflicts.

A more productive approach may be to acknowledge that European research-intensive universities face six structural tensions where legitimate institutional values genuinely conflict. Different universities will resolve these tensions differently based on their historical traditions, national contexts, and institutional missions. The goal should perhaps be explicit articulation of principles rather than attempts to reach an elusive (or unrealistic) consensus.

3. Two Fundamental Ambiguities

Before examining the six core tensions, we need to describe two underlying ambiguities that pervade all contemporary discussions of defence research and make traditional policy frameworks increasingly difficult to apply.

3.1. Ambiguity 1: Dual-use research

It has become increasingly difficult to categorise research definitively as either 'civil' or 'military' in scope, but this difficulty operates across three different domains that are worth distinguishing.

- **Legal.** Specific research activities are governed by export control legislation including the EU Dual-Use Regulation and national law which sets precise criteria for controlled technologies and materials.
- **Strategic.** A far broader range of research is considered relevant to national or alliance security by defence planners, without falling under formal legal controls.
- **Prospective.** Almost any area of knowledge may, over time, find unanticipated security applications.

The tensions that universities face arise most acutely in the second domain, where legal frameworks provide limited guidance but security agencies and funding bodies express clear interest. The erosion of the civil-military boundary stems from two recent developments. First, the changing nature of warfare itself. Modern conflicts increasingly involve drone and autonomous vehicle operations, cyber operations, information warfare, supply chain disruption, and social resilience in addition to conventional military capabilities. Research on social media algorithms, semiconductor supply chains, or pandemic preparedness may have profound strategic implications without any obvious weapons application. Second, defence experts and military strategists now recognize that strategic advantage can emerge from an extraordinarily broad knowledge base, encompassing not just traditional defence-relevant domains like materials science or propulsion, but also disciplines like behavioural psychology, climate science, urban planning, and biosecurity. What defence forces consider strategically relevant in the longer term now extends well beyond what would traditionally have been classified as military research.

If virtually all knowledge can serve strategic military purposes, the distinction between civil and military research becomes increasingly semantic at the level of ultimate application. However, it does not follow that the distinction has no operational consequences. Legal dual-use controls remain precise and enforceable. The important governance challenge is the second domain; strategically relevant research that falls outside formal controls but attracts security funding and interest. It is here that institutional policies attempting to draw clear lines face the greatest difficulty.

This ambiguity fundamentally undermines the "clean hands" position that depends on maintaining clear distance between studying weapons and building them. It equally complicates institutional policies that attempt to draw clear lines around prohibited research areas. For example, when fundamental capabilities in quantum computing serve both civilian and military ends indistinguishably, or when AI research on autonomous systems spans civilian transport, healthcare robotics but also weapons guidance, categorical prohibitions become incoherent.

A further issue is that data storage and transfer rather than publication per se often represent the more legally significant dual-use risk. This may be particularly important given shifting assessments of which partner countries constitute security concerns. The attempt to distinguish acceptable from prohibited research based solely on the source of funding (for example, refusing to accept money from defence ministries while accepting identical work funded through civil agencies) also has challenges if it is considered as a principled boundary. Where research outputs are openly published, the funding source does not determine their availability for security application. And as security considerations increasingly affect the priorities of civil government research programmes, the distinction between 'civil' and 'military' funding sources becomes less reliable as a proxy for the nature of the research itself.

3.2. Ambiguity 2: Fluidity of Strategic Relationships

Determining who counts as a 'friend' and who as an 'enemy' for purposes of international research collaboration has become increasingly fraught. During the Cold War, the NATO-Warsaw Pact division provided relatively clear guidance about permissible and problematic partnerships. The contemporary landscape offers no such clarity. For many countries China is simultaneously a major research partner, an economic competitor, a strategic rival, and—in certain domains—a security threat. Russia occupies different positions for different European states. Middle Eastern states, Turkey, and many others resist simple categorization.
This has generated a proliferating vocabulary of political descriptors such as 'strategic competitors,' 'systemic rivals,' 'countries of concern,' or 'trusted partners'. Unfortunately, none provide clear guidance for research collaboration decisions. A university collaborating with institutions in a 'systemic rival' nation state on quantum computing may be criticized for strengthening potential adversary capabilities; yet refusing such collaboration may be criticized as abandoning scientific openness and international dialogue. Similarly national frameworks such as the UK Research Excellence Framework may incentivise behaviours (like scientific openness) that are seen as problematic by other national authorities. The assumption that collaboration with 'friends' is unproblematic while collaboration with 'enemies' is prohibited is extraordinarily challenging to maintain when almost no country fits cleanly into either category and when strategic relationships shift.

These two ambiguities have implications for governance. If one cannot clearly distinguish civil from military research, and cannot clearly distinguish friend from adversary, then traditional approaches that permit "peaceful research with allied partners" while prohibiting "weapons development with rivals" become impossible to operationalize. Nearly all research partnerships with nearly all countries become contestable. Such a state of affairs leads universities into case-by-case judgment about strategic implications, geopolitical risks, and dual-use potential for every significant collaboration. This is a level of security assessment that many institutions lack the expertise to conduct and that can sit uncomfortably with academic values or some conceptions of academic freedom.

The six tensions that follow must be understood against this backdrop. Each tension is harder to navigate because the fundamental categories on which policy frameworks typically rest—civil versus military research, friend versus adversary—no longer provide stable or persistent foundations for long-term decision-making.

4. Six Core Tensions

1. Individual versus Institutional Academic Freedom. European traditions vary significantly in how they conceptualize academic freedom, but all face a fundamental problem: the freedom of individual researchers to pursue knowledge can conflict with institutional autonomy to shape collective identity. When a researcher claims academic freedom to accept defence funding, but the institution claims academic freedom to refuse such positioning, both are making legitimate appeals to the same principle but meaning different things.

This tension is particularly acute in contexts with constitutional protections for academic freedom, such as Germany's *Wissenschaftsfreiheit*. In such circumstances, institutional policies restricting defence research must overcome a high bar of justification. In systems where academic freedom is a professional norm rather than legal right, institutions have more flexibility but less principled grounding for their decisions. The question is not whether academic freedom matters, but whose academic freedom takes precedence when individual and institutional claims conflict.

The erosion of civil-military boundaries amplifies this tension. When a computer scientist working on machine learning can argue that their research is fundamentally civil even though it has obvious autonomous weapons applications, institutional attempts to restrict such work must either make contentious judgments about ultimate use (which may be unknowable) or apply restrictions so broadly that they constrain vast swathes of legitimate science. Either approach invites challenge on academic freedom grounds.

2. Clean Hands versus Critical Engagement. Universities face fundamentally different moral frameworks about their relationship to defence research. The "clean hands" position argues that moral distance matters. Universities can study weapons without building them, and maintaining such a distance can preserve the intellectual independence necessary for critical scholarship. Historical precedents of militarized universities losing their autonomy strengthen this view. The "critical engagement" position argues that abstention is itself a form of complicity, that someone will do this work regardless, and that universities have a responsibility to embed ethical frameworks and critical reflection into defence technology development.

These positions rest on incompatible theories of institutional moral agency. They cannot be reconciled through better process because they disagree about what universities are for. The practical consequence is that identical research proposals

e.g. work on autonomous systems verification protocols will be seen by one tradition as ethically essential engagement and by another as corrupting complicity.

However, the clean hands position becomes harder to maintain as the boundary between civil and military research becomes obscured. When nearly all advanced research has potential defence applications (from synthetic biology to quantum computing to social media analysis) then the claim to maintain moral distance through selective abstention loses coherence. If a university accepts funding for AI safety research from civilian agencies but declines identical work from defence agencies, is it maintaining principled distance or engaging in symbolic gestures that make little practical difference to weapons development?

A third framing, emerging particularly from Nordic policy discourse, views university engagement in defence-related research through the lens of societal resilience and comprehensive security. National frameworks in Finland and Sweden use the concept of 'total defence' or 'comprehensive security' (totalförsvar/kokonaisturvallisuus) to situate a wide range of societal actors within national preparedness. The practical implications for universities vary. For example, in Finland, this framing operates primarily through institutional culture and leadership engagement in national defence courses rather than through formal legal obligations or directed research funding. For institutions in this tradition, the question is less about complicity versus engagement and more about what constitutes responsible contribution to societal resilience while maintaining academic integrity.

3. National Security versus International Collaboration. Research-intensive universities derive their legitimacy from internationalism and open knowledge exchange. This is reinforced by national research evaluation frameworks like the UK Research Excellence Framework that reward such behaviours. However, defence research pulls toward nationalist framings and restricted collaboration. This tension is particularly sharp in Europe, where universities increasingly face conflicting demands from EU strategic autonomy frameworks, national security requirements, and international partnership networks.

The practical manifestations are pressing: can a university maintain research partnerships with defence-related universities in countries that are global security rivals while conducting (for example) nationally funded quantum research? A deeper problem is that universities are being asked to serve as instruments of geopolitical competition while maintaining their identity as spaces transcending national borders. Most universities have not articulated a coherent principle for when security concerns legitimately constrain international research values. A further complication is that universities are multi-mission institutions that involve both education, research and innovation. This means that a partnership with an institution in a country classified as a strategic competitor may be entirely appropriate for student exchange or taught programmes while raising legitimate concerns for research collaboration or technology transfer. The security assessment of a relationship is typically mission-specific, yet universities rarely

maintain the governance architecture to make these distinctions systematically, and individuals within institutions commonly move between missions in ways that blur boundaries in practice.

The fluidity of strategic relationships makes this tension particularly acute. Universities attempting to maintain broad international collaboration find themselves navigating a minefield of shifting designations. Is collaboration with universities in foreign states on quantum computing permissible if the research is framed as fundamental science but prohibited if explicitly applications-focused? What if the partner institution has undisclosed defence links? What if that foreign government mandates that all quantum research contributes to national strategic objectives, regardless of its original framing? Similar questions arise for partnerships with institutions in numerous states that resist simple friend-adversary categorization.

Export control regimes compound this difficulty by imposing restrictions based on technology domain, partner nationality, and end-use in ways that create complex matrices of permitted and prohibited collaboration. A European university might find itself permitted to collaborate with Institution A in Country X on Topic 1, prohibited from collaborating with the same institution on Topic 2, permitted with Institution B in the same country on Topic 2 but not Topic 3, and facing different rules depending on whether the work is funded nationally, by the EU, or by third parties. The administrative burden of navigating these distinctions can itself become a barrier to international collaboration, even when no clear security rationale supports the restrictions.

4. Democratic Legitimacy versus Expert Judgment. Public funding and social consequence create democratic claims on university decision-making about defence research. Students, staff, local communities, and civil society organizations argue they should have a voice in decisions about weapons development or surveillance technology. Simultaneously, research decisions require technical judgment, understanding of long-term scholarly implications, and some insulation from short-term political pressure.

The governance challenge is determining which constituencies have standing on which questions. For example, in some German states, student governance rights could theoretically enable blocking defence research through majority vote. European universities face additional complexity through dual accountability to national governments and European frameworks. When these democratic sources of legitimacy conflict, most institutions lack clear principles for resolution.

The ambiguity about what constitutes defence-relevant research makes democratic governance particularly fraught. If a university community votes to prohibit weapons research, does this extend to AI algorithms with potential autonomous weapons applications? To materials science that might improve body armour? To psychology research that could inform military recruitment? Or to bone healing research that might help military as well as civilian hospitals? Different communities will draw these lines differently, but the ambiguity means that almost any decision can be

challenged as either too permissive (effectively allowing military research) or too restrictive (constraining legitimate civil research and scholarship).

5. Institutional Autonomy versus Funding Dependency. European research-intensive universities are predominantly state-funded but increasingly expected to diversify resources. Defence and security budgets are growing faster than civil research funding, creating financial pressure to engage with military research precisely when other resources stagnate. Universities with institutional commitments against military research face particular pressure to reconsider these positions.

One important structural challenge is that defence funding, as other types of funding, creates path dependencies. Secure facilities, security cleared personnel, governance infrastructure, and research programs establish constituencies with vested interests. The costs of exit, whether financial, reputational, or human, can become significant. In such circumstances diversifying funding can become strategic capture when institutional autonomy is constrained by resource dependencies. Once defence research capacity exists, can institutions make genuinely free choices about whether to continue it?

The blurred civil-military boundary creates a particular trap. Universities might accept funding for research framed as civilian (for example cybersecurity, supply chain resilience, pandemic preparedness) only to find that successive funding iterations increasingly emphasize strategic and defence applications. The research questions remain similar, but the framing and restrictions shift. At what point should a university recognize that the research agenda of its academic staff is being shaped by evolving security priorities rather than scientific logic? Each incremental move may seem manageable and minor, but cumulatively they can transform an institution's character without any single decision appearing to cross a clear line.

The commercialisation of dual-use technologies introduces a further dimension of this tension that European research-intensive universities are increasingly navigating. Spinouts and licensing arrangements represent a pathway through which universities contribute to national security and strategic autonomy without conducting classified research or accepting defence ministry funding directly. Technologies developed for civilian purposes e.g. AI algorithms, quantum sensors, robotics, advanced materials or synthetic biology tools carry inherent dual-use commercialisation potential. When a university licenses such technologies or supports spinouts with security applications, it contributes directly to European technological sovereignty while maintaining the open research environment on which its reputation depends. This pathway is not without its own governance challenges: defence customers typically require higher technology readiness levels than civilian markets, meaning defence contractors often act as intermediaries in ways that can obscure the ultimate application of the underlying research. Universities need frameworks that make these commercialisation routes explicit, including clear governance for licensing decisions, equity arrangements, and ongoing relationships with companies whose customer base shifts over time toward

security applications. The EU's strategic autonomy agenda has made this question more pressing: universities that would hesitate to accept defence ministry funding may find themselves holding IP whose most commercially significant applications are also those the EU is seeking to retain within European hands.

In some national contexts, notably Sweden's, there is growing policy interest in formally assigning resilience roles to universities within national security architecture. Where this occurs, a related funding tension can arise in that expectations of contribution to national resilience may not come with commensurate resources. Indeed, this can also occur even in the absence of formal resilience roles. Universities that find their work reframed as serving total defence objectives may face implicit pressure on research directions without corresponding support. In Finland, by contrast, the constitutional protection of research freedom and the absence of formal legal obligations under comprehensive security doctrine mean this dynamic may be less acute, though the broader political discourse around strategic research priorities creates its own pressures on funding allocation.

6. Transparency versus Security. Academic legitimacy is typically taken to require transparency, open publication, and peer review. Defence research requires classification, restricted access, and publication controls. UK and European public accountability norms (and research evaluation frameworks and national funders) demand transparency about institutional use of public resources, creating additional pressure. The problem is that classification decisions are typically made by funders rather than universities, meaning institutions can lose control over whether research remains open. Work can also be retrospectively classified, preventing publication and creating structural constraints on academic freedom that most governance frameworks fail to address. And when work cannot be published, this can impact on researcher careers where promotion frameworks explicitly reference publication outputs.

Export control regimes further complicate this picture, restricting publication and collaboration even in ostensibly civil research. The boundary between sensitive and open research is increasingly unclear, particularly in dual-use domains like artificial intelligence, quantum technologies, and engineering biology. Universities must navigate conflicting legal frameworks where freedom of information laws and public accountability requirements can conflict with security classifications and export controls.

The expanding and rapidly changing scope of strategically relevant research means that export controls and classification can be applied to domains previously considered purely civilian. For example, machine learning techniques developed for medical imaging may trigger controls because of reconnaissance applications. Social science research on behaviour change may be classified because of information warfare implications. Universities can find themselves unexpectedly constrained by security requirements in research areas they considered removed

from defence concerns, discovering only after work is underway that publication will be restricted or collaboration prohibited.

5. The European Union Dimension

The EU creates a distinctive institutional and political layer that both shapes and complicates these tensions. EU research funding represents the largest coordinated international research fund globally. For example, the Horizon 2020 program that ran from 2014-2020 attracted one million applications from 177 countries. More recently, EU policy increasingly frames research through security and strategic autonomy lenses. However, the EU's relationship to defence remains ambiguous: defence is formally a member state competence, yet EU institutions increasingly drive research agendas with explicit security objectives. This creates novel governance challenges for universities across Europe, including ones outside EU membership.

EU policy discourse increasingly emphasizes "strategic autonomy" and "open strategic autonomy" which represent the capacity to act independently in critical domains. This framing positions research in semiconductors, quantum computing, artificial intelligence, biotechnology, and advanced materials as serving European sovereignty rather than narrow(er) military objectives. The European Chips Act, quantum and AI flagships, and similar initiatives blend civil and security rationales, making traditional distinctions between defence and civilian research increasingly untenable.

For universities, this creates conceptual confusion. For example, is Horizon Europe-funded quantum research classed as defence research if its explicit purpose includes maintaining European technological sovereignty vis-à-vis China and the United States? The EU frames such work as serving European values, economic competitiveness, and security simultaneously. Universities that would refuse national defence ministry funding might potentially accept EU funding for functionally equivalent research because the framing differs. This suggests institutional positions may rest more on political symbolism than principled distinctions about the nature of research.

The EU's approach illustrates the collapse of civil-military boundaries. Strategic autonomy explicitly blurs civilian and security objectives, treating them as inseparable elements of European sovereignty. This makes it very challenging for universities to maintain that they accept civil research funding while declining military funding if EU funding frameworks assume these are the same thing.

The establishment of the European Defence Fund (EDF) represents new EU involvement in defence research and capability development. The EDF explicitly funds defence and dual-use research, coordinating member state investments and creating EU-level defence research programmes.

Two features of EDF and related defence funding programmes deserve explicit attention in universities' advocacy and governance discussions. First, defence research typically operates outside the open publication norms that define scientific practice in research-intensive universities: results are often restricted, classified, or available only to national or alliance partners. EU funding directed toward defence or dual-use research is therefore not simply additional resource for universities — it comes at the cost of displacing open, curiosity-driven research that generates the publicly available knowledge base from which future innovations, including dual-use innovations, emerge. The trade-off is real even when individual projects seem contained. Second, the concept of excellence applied in EDF and similar instruments is not equivalent to the peer-reviewed scientific excellence that governs Horizon Europe funding. Defence capability relevance, technology readiness level, and national strategic priority are the operative criteria. Universities that engage with EDF funding should be clear that they are operating in a different quality assurance environment and should be alert in their advocacy to conflation of the two frameworks under the shared label of European research excellence.

Thus, universities face increasing EU funding opportunities explicitly directed toward defence-relevant research, often framed through strategic autonomy rather than military capability. Institutions must decide whether EU-level defence funding differs meaningfully from national-level funding, or whether the distinction is cosmetic.

In EU frameworks, there are different categories of institutions with different relationships to EU funding. Each needs to be considered separately in terms of their implications:

EU Member State Universities participate fully in Horizon Europe and can access EDF funding (though EDF has restrictive participation rules around ownership and control). They face the full weight of EU strategic autonomy framing and potential pressure to align research with EU-defined priorities. They benefit from substantial funding but potentially sacrifice autonomy over research directions.

Associated Country Universities (including Norway, Iceland, Switzerland and the UK) participate in most Horizon Europe programmes but face restrictions on security-related research. They cannot lead EDF projects and face exclusions from sensitive pillars. They navigate an awkward middle ground: dependent on EU funding but excluded from EU strategic initiatives, creating pressure to develop bilateral national arrangements that may be less transparent or coordinated.

UK universities represent one of the most significant non-EU third countries in European research, and their position perhaps merits examination in its own right. Post-Brexit, UK institutions retain strong defence research traditions and operate with greater flexibility from EU governance frameworks while remaining embedded in European scientific networks. This creates a distinctive dynamic. UK universities can develop bilateral partnerships and position themselves as trusted research partners for security-relevant work in ways that EU-associated institutions cannot,

unconstrained by EDF participation rules or EU classification requirements. At the same time, they lack the formal governance rights of member state institutions and must navigate EU frameworks from outside when collaborating on Horizon Europe projects. They face EU classifications, UK national classifications, and UK-EU data sharing agreements simultaneously. Whether reduced EU integration enables more explicit defence partnerships, or whether it increases pressure to avoid controversial defence positioning in order to protect remaining European scientific ties, remains genuinely contested and will likely vary by institution.
For LERU as a network, the UK institutional position raises a broader question: whether European research-intensive universities should aspire to common frameworks across EU and non-EU members, or whether the divergence in national contexts now makes this aspiration less tractable than it once appeared.

A final consideration is that EU strategic autonomy creates an intermediate category between "national" and "international" that doesn't fit cleanly into traditional university frameworks. When universities claim to transcend national borders through international collaboration, what does it mean that the EU increasingly defines research priorities through a lens of European sovereignty and security?

EU membership means accepting that some research directions will be collectively determined at European level, not by individual institutions or even member states. The EU's push toward "technological sovereignty" implies research serving collective European interests even when these conflict with broader international openness. For universities, this raises difficult questions:

- Is European-level direction more acceptable than national-level direction because it's more multilateral, or does it still constrain institutional autonomy?
- When EU priorities emphasize restricting technology transfer to strategic competitors (China), does this differ from national security export controls?
- Can universities maintain their internationalist identity within a framework increasingly organized around EU strategic autonomy?

The EU's approach to strategic relationships reflects the broader ambiguity about who counts as friend or adversary. EU policy simultaneously pursues "de-risking" strategies toward China while maintaining research collaboration in some domains. It emphasizes partnership with the US while seeking technological autonomy from US platforms. Different member states have different threat perceptions and strategic priorities, requiring the EU to navigate internal contradictions in its external research posture. Universities caught between these contradictions lack clear guidance about which partnerships support or undermine European strategic objectives.

Classification and Export Control Complexity.

The EU operates its own classification system (EU RESTRICTED, EU CONFIDENTIAL, EU SECRET) alongside member state classifications. Universities participating in EU-funded defence or dual-use research must navigate:

- Multiple classification regimes that may not align
- EU-level export controls alongside national and international (e.g. Wassenaar, MTCR) regimes
- Varying rules for different member states on the same project
- Uncertainty about which authority makes classification decisions

For non-EU universities participating in specific projects, matters become even more complex. A UK university collaborating on Horizon Europe research faces EU classifications, UK national classifications, UK-EU data sharing agreements, and third-country participation restrictions simultaneously. The administrative burden alone may deter engagement even when formally permitted.

Democratic Accountability and the EU

The EU adds another layer to the democratic legitimacy tension. EU research priorities are set through processes involving the European Parliament, Council, and Commission—each with different democratic mandates. For a university community debating defence research, it is unclear whose democratic authority matters:

- The EU institutions determining strategic autonomy priorities
- National governments negotiating EU frameworks
- Regional/devolved administrations (e.g. Catalunya, Flanders)
- Institutional governance bodies (senates, councils)
- University communities (students, staff)

Each can claim some democratic legitimacy, yet they may reach different conclusions about appropriate research directions. EU member state universities face the additional complexity that refusing EU-funded defence research may violate national commitments to EU programmes, while accepting it may violate institutional values or community preferences.

Non-Member Perspectives

For Swiss and UK universities, the EU dimension creates distinctive challenges. Both have historically participated extensively in European research collaboration but now face various degrees of exclusion from EU programmes. This affects the defence research questions considered here in several ways.

Swiss universities have historically operated within a tradition of neutrality that created strong institutional resistance to explicit defence research engagement.

This position is now changing. In December 2025, the Swiss parliament voted to relax restrictions on arms exports. The Federal Department of Defence, Civil Protection and Sport is actively expanding its collaboration with Swiss universities, indicating a policy shift toward more systematic university engagement in national security research. Switzerland's relationship with Horizon Europe is also in flux and newly negotiated agreements are expected to go to parliamentary vote in autumn 2026, with a popular referendum anticipated in spring 2027. The outcome will determine Swiss universities' access to EU research programmes, including those with dual-use and strategic autonomy dimensions. Swiss institutions currently face a combination of domestically shifting norms around defence engagement but continuing uncertainty about their European research access. This makes their governance choices particularly consequential and difficult to finalise.

UK universities face a different challenge. After Brexit, they retain strong defence research traditions and government provides significant funding for defence-relevant research. They are less constrained by EU frameworks but also now less integrated into European research collaboration. For UK institutions, it is not yet clear whether reduced EU integration enables more explicit defence partnerships (because they are less constrained by concerns of European partners) or whether it increases the imperative to maintain European research ties by avoiding controversial defence work that might alienate EU partners.

Funding Dependency Revisited

The scale of funding provided by EU programmes creates distinctive dependency dynamics. Horizon Europe represents many billions in annual research funding, dwarfing most member states' national research budgets. When this funding increasingly incorporates dual-use and strategic autonomy objectives, universities may face a difficult trade-off of either accepting research directions shaped by EU security priorities or sacrificing access to essential funding.

For non-EU universities, the dependency works differently. They face pressure to align with EU priorities to maintain association status or project participation, without the formal governance rights of member states. This creates a form of dependency where influence is minimal, but conformity pressure is high.

6. Mission Coherence

Underlying these six tensions is a more fundamental question most universities avoid articulating: what is their relationship to state power and in the European context, what is their relationship to supranational power through the EU?

Institutions implicitly claim multiple incompatible positions. They frequently claim to serve national strategic priorities, while also contributing to European strategic autonomy, maintaining critical distance from state objectives, pursuing knowledge

autonomously, and reflecting democratic community values. These coexist peacefully until defence research forces choices between them.

Different European national traditions rest on different implicit answers, often unarticulated. For example:

French research-intensive universities operate within a distinctive ecosystem shaped by the coexistence of universities and national research organisations — principally CNRS and other large public research bodies — within shared laboratory structures. Joint laboratories (laboratoires communs or unités mixtes de recherche) are a defining feature of this system: they operate under unified leadership, with academic staff from both universities and national research organisations working side by side on programmes that may include areas relevant to defence. Because national research organisations are centrally structured and have often signed formal agreements with military branches and government agencies, this model enables significant state influence over research priorities, though this can prompt local resistance within laboratories where academic culture and state strategic direction sit in tension. The broader French tradition, shaped by both the grandes écoles and the role of the state in directing national industrial and technological capability, means that defence partnerships are generally viewed as a legitimate extension of serving the public interest rather than a departure from academic values. French universities tend to engage actively with EU defence research initiatives when national and European strategic objectives align with their institutional culture, which they frequently do.

German universities carry post-1945 commitments to autonomy from state strategic purposes, rooted in historical experience of universities serving Nazi military objectives. The constitutional protection of *Wissenschaftsfreiheit* and institutional *Zivilklauseln* reflect deep skepticism about aligning universities with state security apparatus. This tradition prioritizes intellectual independence even at the cost of influence over defence technology development. However, the *Zivilklausel* tradition is neither uniform nor stable: several German universities have in recent years revisited or formally abandoned their civil-only clauses under political pressure, and others are engaged in active internal debate. German universities face increasing tension as EU-level strategic autonomy initiatives gain momentum, and the institutional response across Germany is diverging rather than converging.

British and Dutch institutions practice pragmatic case-by-case engagement, viewing defence partnerships as one legitimate research funding source among many. Without strong constitutional frameworks for academic freedom or historical trauma around militarization, these universities assess defence research opportunistically based on scientific merit, funding conditions, and institutional capacity. This tradition values flexibility but can lack principled boundaries. Brexit has given UK universities greater autonomy from EU frameworks while potentially increasing their dependence on national defence funding. But whether this represents genuine autonomy or strategic capture remains contested.

Nordic countries have developed distinctive national security frameworks that are variously termed 'total defence' or 'comprehensive security' (*totalförsvar*/*kokonaisturvallisuus*). These position a wide range of societal actors, including universities, within whole-of-society preparedness for complex security threats. However, the implications of these frameworks for universities differ significantly across the region and should not be treated as a uniform Nordic model. For example, in Finland, universities are not formally defined as security actors under the Universities Act, and there is no legal mechanism through which comprehensive security doctrine directly shapes research funding or priorities. The contribution universities make to Finnish national resilience is better understood as indirect, through educating people for critical roles in both public and private sectors, and by participation in national defence courses that bring institutional leaders into contact with security policy, rather than through any systemic production of defence-related research. In Sweden, the legal and policy position appears to be evolving toward explicit university roles in national resilience, though the precise implications remain subject to ongoing clarification. Finland's constitutional guarantee of research freedom means that the risk of security frameworks capturing research agendas, though real in principle, is structurally constrained in practice in ways that may not apply equally in other Nordic contexts. What distinguishes the Nordic tradition from French or British models is its emphasis on societal resilience and preparedness rather than (for example) state service or military capability per se. For institutions in this tradition, the relevant question is less about complicity versus engagement and more about how universities can contribute to societal resilience while protecting the open and independent character of academic research.

It is worth noting that in the Finnish experience, the direction of pressure described above may run in reverse. The dominant concern for Finnish research-intensive universities is not that security frameworks are crowding out open and curiosity-driven research, but that policy and funding discourse does not adequately recognise open research as foundational to the security outcomes those frameworks seek. The contribution of universities to national resilience through fundamental research, knowledge generation, and the education of people for critical roles is undervalued in current discussions of research and innovation funding. This might not be because security doctrine has captured the research agenda, but because the security value of open science is systematically under-acknowledged. The broader European debate about allocating research funding according to security and competitiveness potential could be seen in this sense as a missed opportunity as much as a threat. Indeed, such an approach could, if properly framed, support the case for curiosity-driven research rather than redirecting resources away from it. This inversion matters analytically because it illustrates that the civil-military boundary dissolves from both ends simultaneously. If open, fundamental research is itself a national security asset that generates the knowledge base from which dual-use innovations emerge then the distinction between civilian and defence research becomes unstable not only because military applications broaden, but because the civilian knowledge base is by its nature strategic.

A fifth tradition, less fully developed in European policy discussion, encompasses universities in countries with constitutional or long-standing commitments to neutrality. This includes Ireland, Austria, and Switzerland. Institutions in these countries have generally been able to (should they wish) maintain greater distance from defence research by virtue of their countries' non-alignment, though this position is under increasing pressure. EU strategic autonomy frameworks create implicit expectations of participation that are difficult to reconcile with formal neutrality and Swiss re-engagement with Horizon Europe illustrates the trade-offs this involves. Ireland's position within the EU but outside NATO also creates a particular tension between European solidarity and military non-alignment that Irish research institutions must navigate without the settled national frameworks available in either fully NATO-integrated or historically neutral-state-affiliated systems.

These different traditions explain why similar research proposals may receive different institutional responses across Europe, but the underlying principles rarely surface explicitly. The challenge for institutional leadership is not to choose one tradition but to articulate clearly which model (or hybrid) guides their institution, and to acknowledge honestly when their operating practices diverge from their stated principles.

However, all five traditions now confront the same two fundamental ambiguities. When it is not possible to distinguish cleanly between civil and military research then French comfort with state service, German emphasis on autonomy, British pragmatism, and Nordic total defence all face the same question of what research funding to accept or decline. When strategic relationships are fluid and contested, all traditions struggle to operationalize their principles—whether those principles emphasize sovereign service, critical distance, case-by-case assessment, or societal resilience.

The EU layer adds further complexity. Universities must now consider not just their relationship to national state power but also to European supranational governance. When these align, the path is clear. When they diverge e.g. when national governments push for defence research that EU partners question, or when EU strategic autonomy initiatives exceed what national communities support then universities face choices that reveal which authority they ultimately privilege.

7. Implications for Institutional Governance

Identifying these tensions matters not because they can be resolved but because they clarify what is at stake. The primary value is enabling institutions to articulate which values they prioritize when conflicts arise, allowing stakeholders to distinguish substantive disagreements about values from procedural concerns about process, and permitting decisions to be made with full awareness of what is being traded away.

However, analytical clarity about tensions is insufficient for governance. Leadership must also provide frameworks for making explicit trade-offs, establishing decision-making authority where consensus is impossible, and creating legitimate processes for contested choices. Different universities will make different trade-offs based on their historical missions, national contexts, EU membership status, and strategic positioning. The goal should not be uniform policy across European research-intensive universities but rather explicit, defensible principles that acknowledge what is being prioritized and what is being sacrificed in each context.

The two fundamental ambiguities discussed above i.e. the erosion of civil-military boundaries and the fluidity of strategic relationships, mean that traditional policy frameworks based on categorical distinctions (civil vs military research; friendly vs adversarial partners) are increasingly incoherent. Universities must shift from attempting to draw bright lines to developing principles for navigating genuinely ambiguous cases. This might include:

- **Presumptive positions with case-by-case override:** Rather than categorical prohibitions, perhaps establish presumptions (e.g., "we generally decline research on weapons delivery systems") with clear criteria and processes for exceptions, acknowledging that categorical rules cannot address the ambiguity.
- **Transparency about uncertainty:** Acknowledge publicly when a research partnership or funding source falls in genuinely ambiguous territory, explaining the competing considerations and how the institution balanced them. This builds legitimacy even when stakeholders disagree with specific decisions.
- **Dynamic review mechanisms:** Accept that what seems unproblematic today may become controversial as strategic relationships shift or dual-use applications emerge. Build in periodic review of major partnerships and funding arrangements rather than treating initial decisions as permanent, or every decision as establishing long-lasting precedent.
- **Distributed expertise:** Develop institutional capacity for strategic assessment that goes beyond traditional research ethics review, potentially including expertise on geopolitical risk, export controls, and technology security implications.

One dimension of these governance challenges that deserves explicit attention is the compliance burden they impose. Export control, security vetting, data governance requirements, partner-screening obligations, and the management of multiple overlapping classification regimes all carry quantifiable and sometimes significant institutional costs. These costs fall unevenly across the sector. As the scope of strategically relevant research expands and if EU frameworks layer additional requirements onto national ones, then the administrative demands will grow. Universities that wish to engage with defence and security research need to plan explicitly for this capacity and should consider whether national-level support mechanisms (from research councils, government departments, or sector bodies)

could reduce duplication of effort across institutions facing identical regulatory environments.

The EU dimension requires universities to consider an additional factor: whether they treat EU-level research priorities as meaningfully different from national priorities, or whether the distinction is primarily rhetorical. Institutions that would refuse national defence funding but accept EU Defence Fund or strategic autonomy-framed research must articulate why the European level provides moral or political distance that the national level does not. Conversely, institutions that treat all security-framed research equivalently regardless of funding source should acknowledge this principle clearly.

8. Next steps

Several priorities emerge for the work that follows from this analysis. The heterogeneity captured here, across national traditions, institutional missions, and the character of the relationship between universities and defence establishments in each country, is not a problem to be resolved but a starting condition to be worked with. Working with heterogeneity requires different approaches from those suited to uniform networks, both within institutions and across sectors and countries. A significant gap in the current analysis is its focus on research and innovation to the exclusion of teaching and education. Questions about what universities can and should teach in relation to national security and defence, whether civil resilience, military ethics, or dual-use technology, raise distinct issues of academic freedom and institutional responsibility that merit treatment in a successor document. These issues may not map directly onto those facing research and innovation. A second priority is to develop more fully the relationship between academic freedom and academic responsibility, which this paper treats as a tension but which may be better understood as a pairing: freedom and responsibility as jointly constitutive of what academic engagement means, with human rights providing a substantive ethical floor for decisions about dual-use research. Finally, a third is the question of institutional decision-making authority: who decides the university's position on these matters, how explicit that decision should be, and what legitimate processes look like when communities disagree. The goal for future work is thus not further elaboration of the conceptual landscape mapped here, but practical guidance that helps institutional leaders navigate these questions in their own contexts, drawing on shared vocabulary and mutual recognition of different institutional approaches elaborated in this paper as legitimate rather than divergent.