Interview – William Goodhind

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William Goodhind is an investigator and researcher with Contested Ground, an open-access research project that conducts satellite imagery analysis on war and armed conflict. William previously worked with the OSCE Special Monitoring Mission to Ukraine as a Monitoring Officer, patrol leader and imagery analyst between 2015-17 and 2020-22. He was also an OSCE observer in Ukraine's presidential elections in 2019. Since the outbreak of Russia's full-scale war in 2022, William has worked on war crimes investigation and military analysis. He is a deployable civilian expert with the Foreign and Commonwealth Office. Earlier in his career, William was a civil servant with the UK Ministry of Defence and Cabinet Office.

Where do you see the most exciting research/debates happening in your field?

Digital technologies are having a profound effect on how we, as members of the public and civil society, can observe, track, and analyse armed conflict. Russia's war against Ukraine has seen the rapid democratisation of data – an exponential growth in the availability of images, videos, datasets and mapping, each detailing wartime developments at an intimate and often first-hand level. These technologies are not new, but there has nonetheless been a seismic shift in the ubiquity of data, in digital inter-connectivity, and the simple bandwidth capacity to share multimedia files between handheld devices. This is therefore an exciting time for data analytics – how we collate, interpret, and use this data, with implications for academic scholarship, legal practice, and journalism.

Through Contested Ground, my work centres on the analysis of open-source satellite imagery to document observations that hold military, political or humanitarian significance. Just as with other digital technologies, the remote sensing field is also facing questions of best practice, data integrity and novel approaches to its application. In academia, a lot of research has been done on methodological innovations, such as in object identification, change detection, and Artificial Intelligence-assisted processing. But I have seen less of an emphasis on the primary data potential of satellite imagery. I am encouraging scholars in international relations to consider how imagery as an empirical resource can support or challenge theories and conceptualisations of war: its origins, causes, junctures, characteristics, and the timing and consequences of state actions.

How has the way you understand the world changed over time, and what (or who) prompted the most significant shifts in your thinking?

A seminal moment for me was 9/11 and watching on TV as planes hit the World Trade Centre in New York. It was a horrifying, tragic and enraging spectacle. Up until that point, international affairs, and politics in general, was on the periphery of my interests. Afterwards, I started to follow international relations more closely. At the University of Sussex, I learned about securitisation, the humanitarian imperative, democratic peace theory, genocide studies, and the politics of rentier states. However, looking back at that time, my reflections on armed conflict thereafter were too narrowly focused. What with the invasion and occupation of Afghanistan and Iraq, counter-insurgency and counter-terrorism took centre stage in academic and public discourse for the best part of a decade. I was a product of that time, where asymmetric warfare and 'small wars' dominated thought and practice.

Russia's illegal annexation of Crimea and invasion of Eastern Ukraine in 2014 prompted a sea-change in my thinking. Hybrid and non-linear warfare were now the in-vogue terms, and the insurgency/terrorism duo were

comparatively old news. We were back to covert operations, tank battles, artillery barrages, trench warfare, and territorial conquests, all bound up in Russia's '(im)plausible deniability' that it had nothing to do with these events. My appreciation of geopolitics and military strategy broadened, moving beyond the Afghanistan and Iraq epoch. But it was my deployment to Eastern Ukraine with the OSCE Special Monitoring Mission that really brought it all together.

Being a Monitoring Officer on the ground in Luhansk and Donetsk Oblasts saw theory and practice coalesce. This was the most significant shift in my worldview. My first two years in Ukraine, spent almost entirely in separatist-held territories, gave me a unique and sobering perspective on the realities of war. It taught me, for example, that peacebuilding as a hypothetical topic in a classroom is very different when on the frontline, at minus 20 degrees Celsius and with gunfire nearby. This is not to devalue academic endeavour, quite the opposite. To become a better, well-rounded practitioner, you need to have both sides of the coin: a foundation of theory and knowledge, complemented by real-world experience.

What inspired you to create the website "Contested Ground" and focus on satellite imagery investigations in the Russia-Ukraine war?

I felt that more could be done to bring satellite imagery into the public domain. A wealth of information is freely available online, but it can be difficult to know where to look for specific case studies and how to interpret what you find. I am helping to bridge this gap. Contested Ground as a research series is all about knowledge capture and creation. I take raw satellite imagery and package it in an accessible format and with contextual detail that adds analytical value.

Of course, Russia's full-scale war was a singular driver in my decision to create Contested Ground. Given that I had lived and worked in Eastern Ukraine, I was well placed to publish imagery analysis on Luhansk and Donetsk Oblasts. It was a skillset I had already tried and tested. Before I evacuated to the UK in February 2022, I was assigned to the OSCE's Imagery Analysis Cell in Kyiv. It was here that I analysed UAV and long-range drone footage taken by monitoring teams in the field. Having returned to the UK, and newly inspired by civil society's surge of support to investigate Russia's war crimes, I wanted to do the same, but using satellite imagery.

What do you consider to be the broader role of international organizations in monitoring and reporting on conflicts, particularly in the context of the Russia-Ukraine war?

International organisations have a hugely important role in determining ground truth. The OSCE Special Monitoring Mission to Ukraine, for example, had access to areas, officials and affected peoples well beyond the reach of most governments, journalists, and NGOs. Without this international presence, the occupied territories of Eastern Ukraine would have been a near-total information blackout. Whereas the OSCE Mission closed in 2022, the UN Human Rights Monitoring Mission in Ukraine continues to operate, and its country reports are highly regarded. Likewise, the International Atomic Energy Agency's (IAEA) monitoring of Zaporizhzhia Nuclear Power Plant keeps a running watch on Russia's illegal seizure of the plant and associated safety concerns. And I would be remiss if I didn't mention the OSCE's Moscow Mechanism, a fact-finding and expert assessment tool, which has been invoked five times since 2022.

Taken a face value, this monitoring and reporting activity is at risk of being reduced to simply recording and verifying events (albeit in complex and sometimes dangerous settings). But to frame it as solely reportage omits another important dimension: influence. Having a physical presence on the ground, and publishing for an international audience, can influence the behaviours of state and non-state actors engaged in fighting. This second-order effect of multilateral deployments is not always given the credit it is due. Monitoring can have a tangible, positive impact in conflict management at the local level, in addition to its role as a feed for diplomatic discussions in New York, Vienna and elsewhere.

What types of information and evidence do you aim to uncover through your investigations? How do you believe satellite imagery contributes to a better understanding of the conflict?

Satellite imagery offers an invaluable opportunity to observe places that may be inaccessible due to political, logistical or security challenges. In conflict environments, it is an essential tool in understanding the geospatial and temporal dimensions of hostilities. Moreover, having the ability to view locations across time helps to cut through the information warfare at play in government statements, social media, and the press. It is, if you like, an antidote to dis-, mis- and mal-information. We can interrogate the veracity of claims and see for ourselves how certain events occurred or developed.

I predominantly research Russia's invasion of Ukraine, from 2014 to present. Most of my analysis is on military affairs: identifying concentrations of troops, the location of firing points, changes along the front line, damages caused to civilian objects, or establishing a baseline understanding of activity in an area. The reports I publish help to illustrate behaviours or actions, serve as reference points to aid imagery analysis, or shed light on noteworthy case studies. These could be used, for example, to support academic enquiry into Russia's military strategy, to probe the concept of New Generation Warfare, or review the, now defunct, Minsk peace processes. Alternatively, the reports highlight satellite imagery that could be used as direct or circumstantial evidence in legal proceedings. In this context, they are a form of open source evidence, providing building blocks or starting points for investigations and case building.

Can you share some examples of significant findings you have made through your satellite imagery analysis in relation to the Russia-Ukraine war? How do you ensure the accuracy of your digital evidence?

My pleasure! One subject I have explored in detail is evidence of Russia's materiel support to the so-called 'People's Republics' in Luhansk and Donetsk Oblasts. As my remit includes the earlier years of Russia's military campaign in Ukraine, I draw on an archive of imagery that goes all the way back to 2014. This aligns with the International Criminal Court's investigative timeframe of "alleged crimes committed in the context of [the] situation in Ukraine since 21 November 2013", as well as ongoing cases in the European Court of Human Rights (ECHR). For almost a decade, the Russian state held firmly to the line that it was not an active participant of the war and that the 'Republics' were a homegrown phenomenon. Observations in satellite imagery show otherwise. A more detailed study is ongoing, but I have published on a Russian supply base on the international border that was active between 2014 and 2018, as well as significant caches of ammunition and delivery convoys in occupied-Luhansk. These case studies, among others, point to a sophisticated cross-border logistical operation that sustained, trained and equipped Russia's proxy forces in Ukraine.

Turning to events since the full-scale war, I have mapped out artillery and rocket firing points during the Siege of Mariupol in April 2022, which help us to understand the types of forces present and when certain actions took place. And, in my first reports for Contested Ground, I analysed Russia's rapid militarisation of the Zaporizhzhia Nuclear Power Plant (ZNPP) between March and July 2022. Other reports have more of an illustrative purpose than an investigative one. Intended to situate the reader, I have published on Morozovsk Airbase, Russian Navy in Sevastopol and Novorossiysk, and Russian trench systems in Zaporizhzhia Oblast.

For all my reports, I ensure that the findings can be verified and replicated. I include detailed technical metadata on the image's source, satellite positioning, and scene specifications. I also cross-reference with open-source analytical reporting, such as from the Institute for the Study of War, and military control mapping of the front line.

How do you collaborate with academia, policymakers, legal practitioners, or other sources to further your research? What implications does this collaboration have for them?

Most recently, I have been collaborating with The Washington Post and their visual forensics team as they conduct investigations on the war in Gaza. I analysed imagery for two articles – one concerning an airstrike on Palestinian journalists, and another on the death of a young girl. In both cases, I was given only rudimentary details on the story being researched, which allowed me to approach the task in an objective, unbiased manner. I think this is where satellite imagery analysis has a real strength in that it can be done independently by third parties and with a fresh perspective.

Separately, I was interviewed earlier this year by Visegrad Insight, a Warsaw-based policy analysis platform, on the future direction of war crimes investigation. This was part of my efforts to promote imagery analysis as a methodology. And, in a similar vein, I delivered a workshop on 16 May for the British International Studies Association (BISA), discussing the data potential of satellite imagery for academics and illustrating with examples from Russia and Ukraine. All of this, including outreach with journalists and networking with legal teams, is done to foster connections across communities and facilitate information sharing.

What challenges or obstacles have you encountered during your satellite imagery investigations? How do you address these issues?

If using commercial imagery, the main challenge is cost. A single image can have a price tag of anything from £500 to £1000 (€585-€1170), and there is no guarantee that it will yield results. Moreover, many of the larger imagery suppliers currently have an embargo on coverage of Ukraine, for security reasons. By contrast, Google Earth has Very High Resolution (VHR) imagery, which is classed as a pixel size of $50cm^2$ or lower, and an extensive back catalogue of data. The imagery is free to use and distribute for non-commercial purposes. But there is a catch – it is not recent; there is typically a one- or two-year lag in coverage, depending on the country. For individual projects, the budget and how an output will be used (whether public or private) will largely dictate which resources can be brought to bear.

From an analytical perspective, challenges in identification and interpretation boils down to image quality. For example, the spatial resolution, extent of cloud cover, positioning of the sun (creating varying lengths of shadow), and whether the image is clear or has been blurred by atmospheric distortion. Viewing the same geographic area over time, where better imagery gives context and clarity, can help avoid false positives and negatives. Likewise, having high quality reference images and 3D modelling of, say, military vehicles can improve confidence when identifying and labelling observations.

What are your future goals and aspirations for "Contested Ground"? Are there any specific areas of the Russia-Ukraine conflict that you plan to focus on in your upcoming work?

There is a lot more to be done! As I mentioned above, in this new information age, there is an abundance of publicly released data at our fingertips. For the time being, and as new imagery is released, I will continue my focus on Russia's war against Ukraine, with the intention of creating more substantive written analysis that fuses findings with other open-source investigations. And, as I delve deeper into a variety of case study types, I am growing increasing interested in tradecraft best practice. It for this reason that I am developing learning aids to help others working in this field.

Concurrently, I am busy establishing connections with stakeholders in the UK and internationally. I want to hear from the full spectrum of end users – from the deep subject matter specialists taking a historical perspective on war and conflict, to those at the forefront of current affairs, verifying events, developing policy options, and pursuing legal redress. Longer term, I plan on expanding my analysis to include other countries and time periods. Where I look next will depend upon the needs of civil society and the availability of imagery to get my teeth into.

What is the most important advice you could give to young scholars of International Relations and Politics?

It is crucial to understand how government and international organisations operate in practice – the waypoints, gatekeepers, and mechanisms that sit behind collective and unilateral decision making. Committees, resolutions, white papers, and memorandums may sound dull and bureaucratic, but they underpin the policy architecture and processes that lead to real world effect. If you can create a mental map of these system of systems, you can better navigate where you fit into the wider picture. Visit parliament, congress, or wherever executive decisions are discussed and made. Learn how governance, diplomacy and military strategy is applied in practice, and use this to situate your studies. Having this grounded awareness will give you a much better vantage point to shape thinking and create impactful, data-driven research that can inform debate.