

## [Trust and verification in an age of misinformation Malachy Browne Interview](#)

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**Craig Silverman:** hey everyone welcome to week three of the MOOC I'm really excited to have Malachy Brown here with us, He is a producer at the New York Times, he does amazing kind of forensic reconstruction videos and analysis. And he also previously worked at a project called reportedly and at a company called Storyful. So he has been doing really high-level grape verification work with social information with video footage and other things for a long time thank you for joining us

**Malachy Browne:** okay stay with you Craig thanks for bringing me in.

**Craig Silverman:** yeah! So we're gonna talk about a few things. And we're gonna try and do kind of a more detailed chat about the amazing video that you and some colleagues did about the Las Vegas shooting. But to start with is somebody who's been doing verification for a while now, one of the things that I always kind of talk to people about is like there's the tools you use, but there's also, like there's the mindset that you need to have to do this work. And I'm just wondering for you like how do you think about and how do you approach verification projects? Is there some consistent way you look at them?

**Malachy Browne:** yeah I mean, you know whatever the inputs as I call it, like I think of all of this in data terms. But like whatever the inputs are you know the leads that you might get it. Could be a tweet, it could be a sentence in an article, it could be a source just dropping you an email. What I'm thinking about well, what are the variety of sources and ideally visual sources that gives us a unique look at this problem. The story you know that might allow us to investigate it a little bit deeper. Break news or two to bring something additive to an existing story, and really what we're trying to do is I mean it could be a scoop. But if it's an existing news story kind of probe official accounts ask you know new questions about a certain event and what visual evidence and open source evidence is out there. That's available for us to interrogation, essentially and try to come up with answers that's essentially it, and it could be anything from shipping documents, to satellite imagery, to fire data that NASA is collecting, that's useful for kind of monitoring scorched earth policies. OpenStreetMap data sometimes we will combine active fire data would OpenStreetMap data to look to isolate fires in populated areas and then order that satellite imagery to see what's going on there. That's very useful for accessing remote areas but also in Western countries and anywhere where there's proliferation of smartphones. You can gather all sorts of it--with and cell phone footage

basically and analyze that for multiple different angles. We've run several stories using all of those sources of information.

**Craig Silverman:** how do you stay up to date in terms of information sources and tools. I mean how do you stay on top of this stuff.

**Malachy Browne:** by following the open source community. Basically they're really active on Twitter, I have an OS. It's called open source intelligence OS. It is what this community calls it and people are out there finding new tools like strata and finding clues in activity maps that are posted and Strava in sort of four-hour reaches of the world which kind of arouses people curiosity. Why are people training in the middle of the Nigerian desert? That community is kind of a community that's based on generosity. They find things put things out there on Twitter, ask questions of each other it's very collaborative and just by keeping in touch with that community following each other's work usually that type of journalism is very explanatory and people it's educational because people share this the tools that they use. So that's one way that I do it ,and then just you know really by emails and phone calls and just touching in with that sort of community of sources and collaborators that I built up through the years. And basically what's cooking what are you looking at, how are you doing us, you know that kind of thing at the times. I think we're lucky here because some of the technology providers and satellite imagery providers want to work with us. They'll often come in and showcase some of the things that they're using new tools or new advances that are happening out there. Also just looking at people like investigators who spend months and months and stuff and who are at the forefront of this like sit you research and forensic architecture and you know basically just studying the work that they do and how they do it.

**Craig Silverman:** Now for the folks who've been doing this course we've done a this week we've looked at what I consider to be like some of the core kind of techniques and tools and approaches to doing this kind of work for you when you think about the toolkit of the stuff that you would consider to be essential for people. What are some of the things that come to mind.

**Malachy Browne:** TweetDeck straight off the bat. Organize your lists and your searches. Just learn Twitter advanced search operators, that is really useful. We use a pay-for tool called Sam desk. It's not free so that might be used not my that might not be useful to too many people. Any map like all of the mapping websites you know Google Maps Google Earth, being, Yandex, all of those ones for geolocation. Even just you know sort of polygons that people mark on wiki mafia things like that. I have my own

sort of open source - or start - Emmy and that's actually public people can use that. There's a whole list of tools out there that I use. But yeah basically, Twitter mapping. I mean learning Facebook Graph search at the moment is still available. But learning how to use that effectively is quite useful to mine data look for sources going to Talk to people that kind of thing.

**Craig Silverman:** Now you you know you worked at Storyful which i think was a really pioneering place when it came to gathering and verifying user-generated content. You work to reportedly which was trying to do that in kind of real-time and curate. Now you're at the times. So I'm just curious over that period of time, which is you know several years. What's the stuff that has changed in terms of doing this work. But I'm also curious like what doesn't change as well?

**Malachy Browne:** yeah I mean I think the real-time element of it has changed. Twitter users are so adept at finding information that services that once we're available on Twitter or we're providing and trying to provide information first on Twitter that's definitely changed. I think the other big change is that people are communicating privately more often. That makes the verification challenge all the greater. The first thing that you always try to verify in any piece of content or information is who's the source and then who's the second source it was the third source you know triangulate. And with so much information being shared on closed networks that's difficult. The burden on verifying date and location and context and all of that is much greater. I think that finding the right people and eyewitnesses and sources to talk to going back to traditional old journalism is really important now. I think that's really what we've been doing here. We've been combining these relatively new sources of information and techniques with the reporting muscle of the New York Times and this sort of the in-country correspondence who have those networks and have that knowledge, we're lucky to have that. But there are others out there, there are you know human rights groups who have broad networks for people who want to to work with them and partner and stuff like that yeah.

**Craig Silverman:** yeah, so why don't we why we talked about the Las Vegas shooting. you know (the) reconstruction an investigation that you folks did. I know you have some stuff you want to talk about. I think it's it's a perfect kind of pickup because you're talking about combining some of these techniques and information sources with just on-the-ground reporting and there were a lot of times in that video where you're narrating it and you say "our reporting has confirmed this" or "our reporting found that" It's clearly not just the cell phone videos of people and why not there's also other efforts you guys made. So I would love to hear about that piece too.

**Malachy Browne:** yeah, and I mean the Las Vegas piece, you know we experimented and tried new things on that. So you know in this kind of work you're always kind of pushing your own limits and using new tools that I'll talk about that through it. Essentially with the Las Vegas shooting, we were a few weeks in and we still didn't have a lot of information from official authorities about what had happened. In fact the timeline for what happened had shifted several times as well. The police gave different start times, their response was under scrutiny they were accused of covering it up. Essentially in the absence of a solid timeline of events we wanted to establish that throw and there was loads of videos, dozens of videos. I think 45, I gathered videos of that event and around 35 of the shooting itself. I gathered all of those and organized them by location inside the fairgrounds outside in Las Vegas Boulevard on jet pilot street where lots of the injured were taken over at the Mandalay hotel and in the surrounds of there. That's a really important thing is to try to know what questions you're answering from the outset and organize the evidence as you're gathering it because it can become quite messy. As I started you know listening to the videos of shooting I could detect patterns in those videos. So for instance, the duration of a burst, the interval to the next burst. Several of the videos cover three or four bursts and so. I was able to begin start lining up and saying, maybe that's four to the first, four to six that might be bursts you know five to nine and so we did that. Then very technically so we open we used Adobe Premiere, which is a video editing software, and we extracted the audio waveforms for each burst of gunfire and each one essentially had its own fingerprint. The rate of fire, how guns my bullets might have jammed, the number of bullets fired and then the interval to the next one right. So imagine matching these up then, reconstructing the entire shooting from multiple different videos covering different parts of that shooting. What that gave us was a multi location view of the shooting as it unfolded twelve bursts of fire and those twelve bursts kind of were the scaffolding around, which we built our story So this is really dense material but so you need to organize it and sort of carry people through. Then for each sort of minute of the shooting we're able to analyze how the police responded, where they first arrived, how people in the fairgrounds bonded. Then by overlaying the police scanner audio and the medical technicians EMT scanner audio over it, we were able to see what they were saying and how they were reporting what was happening around the fairground. Then because in the fairground itself where he was targeting you could hear the bursts of fire, but over at the hotel you could hear extra bursts of fire as well that weren't picked up on the fairground. We were able to determine that that was him firing in doors. If you remember the story there was a engineer and the security man stuck in the hallway and he was firing at them as well. All those details kind of a lot gave us new insights into what was happening and I can talk as well if you want and like really fine details if you want.

**Craig Silverman:** I mean one of the things that I think as an overall approach to it sounds like the there were the the burst of gunfire gave you not only these fingerprints that came at certain times but it gave you kind of a timeline to match stuff up against. An event like that it sounds like setting the timeline and figuring out where all of these videos you collected and the scanner traffic and all of those things fit on it that's that seems like a really important piece of it.

**Malachy Browne:** Exactly, it gave us down to the second when he started his attack actually and because we were able to establish that second we were able to go minute by minute across what at what an unfolded afterwards. We were able to identify when he was firing those single rounds. Also through the audio analysis we've got three Marines here on staff who looked at it and there were CJ troopers is one of the experts on ak- 47 and machine guns. They listen to the audio we took spliced down every burst from multiple different angles and those guys listened to it and we had a shared document and we were asking questions of it and what does this mean. Now all of that didn't end up in the final product but it allowed us to kind of state one line about where he was aiming at a particular time. We did things like we took that audio that I described and used Adobe Audition or any audio software to just stretch it right out and isolate the pings or the cracks or the bullets flying overhead from the thud of the gun in the distance. like three bullets would pass before he would hear the third or the first gun our first bullet yeah from the chamber just because of the the distance he was from his targets. That allowed us to do get an accurate bullet count. Even doing that exercise of understanding the bullet count we could tell at one point he was firing 90 plus rounds every burst but up one stage of his running firing 50 rounds and that was the time when he fired first fire down the hallway at the engineer. So perhaps that or the security man so perhaps the security man distracted him right you know you know things like that. It just gave us a whole other level of context about what happened, and who responded and, where they were.

**Craig Silverman:** one of the pieces for doing work like this is you know you talked about all the videos that you're able to get. Now some of those were shot by people who were there at the concert. Talk to me about how you approached people to get their footage in these kinds of scenarios because there's a lot of times especially in breaking news where somebody has video or a photo that's really newsworthy and you look in their replies to their tweet or what have you and it's just all news organizations saying "can we have this, can we have this, can we have this" you've been in those scenarios a lot. So for this one, and in general what kind of advice or direction would you give.

**Malachy Browne:** yeah, I mean first piece of advice is I mean don't hound people like that. Particularly if it's in a stressful situation like mass shooting or any event like that. And particularly be mindful of minors. Approaching minors, for us my first stop together videos was Storyful we work with storyful. Here still and AP and the wire services and that was the first round of events that we got. Then I cast the net out wider I started looking across all the platforms myself to find things that maybe Storyful didn't think that it was visually compelling or newsworthy but there was evidence for me that was quite useful in it and if I couldn't get in touch with the person myself usually I'll try to establish a relationship or connect with them so that we can private you know message privately DM or Instagram messages or Facebook messages or you know find their phone numbers or email address and contact them. I did that with several of the people who were able to be the raw files directly from their phones and those files contain metadata that are is stripped out from the by two platforms one is social media platforms so the exact hour minute and second that that piece of footage started rolling and so that also helped with the timeline and calculating when things happens.

**Craig Silverman:** Yeah, I mean that's an important point that I I'm making some of the materials for folks this week. You have to try and get that camera original, whether it's a video or a photo as much as possible because once it's uploaded the metadata is gone. But for you, for establishing that timeline once you could find the people and get them to send it to you then I guess the exif data or what-have-you is there and you're able to really see if it's a photo what was going on. I guess for video is it the idea of when they uploaded the video it gave you a sense of the timeline of when they had shot it.

**Malachy Browne:** Actually, I think most of the videos that were raw videos that were sent to me had metadata in them. And I used invit, which is a great extension that has all sorts of tools built into it. And I just uploaded it there and that gave me when the person pressed record for that piece of video. And so by using the fingerprint of the of the bullet, sorry the burst of fire, I was able to plot it on my timeline and say oh when they started filming here at 10:05:21 and by doing that with like five different videos. I was able to went back to the same three second window of the the event starting. So it's just valuable evidence.

**Craig Silverman:** So from people who as well..

**Malachy Browne:** Just one other thing. In contacting those people I was explaining what I was trying to do with it. I think there was a lot of dissatisfaction with how the event was covered by the media. But I was explaining that I was you know explaining what we were trying to do and people were very helpful.

**Craig Silverman:** Yeah, so for folks who are kind of getting started in this area, getting started of trying to gather and verify information. Other things that you would just recommend if they keep in mind as kind of starting points.

**Malachy Browne:** yeah, you know put yourself in the uploaders shoes is one thing that that I always say to people. They may feel that their social circle is knows that they're in I don't know Tehran or wherever, so they may not Tiger posters Tehran but they may tag it as whatever the local slang for polices or that square that they're in or that kind of thing. So just think about how people might tag content. You use geo search but use combine geo searches with keyword searches. I would say is well kind of whatever your area of interest is start curating Twitter lists and engaging with that community and understanding who the reliable sources are, and who the best sources are of information for whatever that beat is. Yeah I mean they're the main the main things. Also if it's breaking news that your beat is look, for the earliest mentions of that particular event because they're your eyewitnesses. There are the people who are closest to the story and people that you want to talk to. I mean, these are sort of the basics of social journalism or any journalism really but yeah that kind of thing.

**Craig Silverman:** Awesome, well thanks so much for taking the time to chat, and I'm sure folks will be looking for the next projects that you guys are putting out.

**Malachy Browne:** Ok great, thanks Craig

**Craig Silverman:** Thank you!

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