The rise of ROBOJOURNALISM

Journalists may be quaking in their boots just a little more than usual with the phasing in of robojournalism and innovations like QuakeBot, a computer programme that can collect data on an earthquake that's just happened, pull it together into a story and publish it online within seconds.

By Michael Salzwedel

As the world races onwards into an increasingly dizzying cacophony of content, news publishers are having to fight harder than ever for relevancy and their slice of the shrinking revenue pie. They have to churn out more news in less time, dangling content bait in a fishing frenzy for clicks and eyeballs.

Newsrooms are generally pretty dire places to be right now. Staff are being let go, sales and standards are dropping and salaries are under strain. Publishers are looking everywhere for new ways to do more with less. Newsrooms need journalists, but journalists cost money, take lunch breaks (if they're lucky) and mostly take hours to write stories. Computers cost less money, don't need lunch breaks and can write stories in seconds. Yep, computers are now writing and publishing stories, how about that?

So what exactly is robojournalism?

No, it's not the Iron Giant, Gort and Evil Maria wandering around danger zones doing risky interviews, snapping InstaPulitzers and live tweeting. Robojournalism, still very much in its infancy, involves computers compiling data into story templates, based on pre-programmed algorithms, and then publishing them to the web, without requiring any human involvement in the process.

Not too long ago, morning newspapers and evening TV news bulletins were the flagship products of newshouses. Now, to wait is to wither. Immediacy is the name of the game. You've got to be quick as a fox – or a bot. If you're an online news publisher and you've got a robot that can spit out a sensible story quicker than a human can write a headline, you've got a headstart on your competitors.

Probably the most talked-about example of robojournalism is a short piece about an earthquake, which was published by the *LA Times* in March this year, three minutes after the earthquake occurred. Journalist and programmer Ken Schwencke designed an algorithm – QuakeBot – that draws on trusted data sources, such as the US Geological Survey, to gather factual data as soon as it becomes available and insert it into a pre-written template.

The *LA Times* also uses another algorithm that compiles stories about crime, and other news organisations are experimenting with robojournalism for stats-heavy beats like sport and economics. No-one appears to be experimenting with robojournalism in South Africa just yet – any bets on who will be first?

Companies that provide robo-reports are starting to spring up around the world. In the US, Narrative Science supplies Forbes.com with financial reports. In Germany, Aexea focuses on sport reports, with an additional layer of context beyond the hard numbers. In a basketball game, for example, Aexea's 'news machine' could factor in results and stats from previous games. "It could look at whether the top scorer had disappointed," says prototype designer Frank Feulner.

Yes, but...

While a computer may be able to spit out formulaic fact-laden news faster than any human, the formulas used are restricted to hard data. Perhaps robo-reporters like QuakeBot are, for now, little more than dehumanised interns or assistants, doing the straightforward fact-gathering work for stories that fit neatly into a template. But what about in a few years' time?

Bob Marley would tell you that "everything's gonna be alright", and it would be great to agree with him in this case, but journalists need to acknowledge that while bots can obviously be beneficial to their work, as they get smarter and tell better stories they could also become a threat to the profession, at a time when we really don't need yet another.

For now, there's one big reason that disillusioned journalists shouldn't be looking around for the nearest high-rise building just yet: robots can't think like humans (yet). Journalists and editors are paid to think, to discern, to make decisions about which data to use to produce specific information to tell specific stories and place them in specific contexts. Robots just aren't quite there yet. Artificial intelligence is getting more impressive by the day, but we're still some way from having a robot being able to make intelligent decisions

CAUTION!

ROBOJOURNALIST AT WORK

This is the article generated by the LA Times algorithm:

A shallow magnitude 4.7 earthquake was reported Monday morning five miles from Westwood, California, according to the U.S. Geological Survey. The temblor occurred at 6:25 a.m. Pacific time at a depth of 5.0 miles.

According to the USGS, the epicenter was six miles from Beverly Hills, California, seven miles from Universal City, California, seven miles from Santa Monica, California and 348 miles from Sacramento, California. In the past ten days, there have been no earthquakes magnitude 3.0 and greater centered nearby.

This information comes from the USGS Earthquake Notification Service and this post was created by an algorithm written by the author.

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about when, how and why certain pieces of information should be crafted into a story.

Robo-journalists are great for creating simple stories in seconds, but they can't pick an angle, investigate inconsistencies or controversies, provide analysis or a nuanced sense of context, and they have none of the swag of Hunter S Thompson.

Robo-editing

Not only can computers write stories, they can also play the role of an editor by determining content mix and placement. Computers are learning more and more about our news consumption behaviours, patterns and preferences. The Google News homepage and category pages (which aggregate stories from many news websites) are robo-edited according to what Google thinks is most important and/or will be of most interest to you, based on your location and data trail (the same data trail Google uses to select which ads to show you). Unlike most news websites, Google News doesn't have a team of humans behind the scenes deciding which stories to put where.

Google and others are doing an okay job of automatically determining what it is you might be most interested in, but it's still humans who are writing (most of) the stories, and human editors are still better able to use their knowledge of their audiences to determine the relevance of stories and how and where to insert them into the content mix at any point in time.

As members of the journalism profession, we're faced with a few hard-to-answer questions. Are robo-editors threatening human editors more or less than robo-reporters are threatening human reporters? When will these robo-roles start to have a tangible effect on newsroom staffing, and to what extent? Will robojournalism ever match human journalism for quality and relevancy?

Robo-visualisations

A big buzzword being bandied about these days is data journalism. This is the science (and art) of finding, refining and analysing data to find patterns and trends, and then visualising the findings with (often interactive) charts and maps in a way that maximises the meaning of the story for the audience.

While robojournalism already is a form of data journalism, in that it uses data as the building blocks of stories, the next frontier for robojournalism will be robo-visualisations: auto-generated stories that include interactive visual elements that convey the key aspects of a story. It's going to take some impressive work to get robots to the point where they can determine which kind of visualisation is best suited to the data and story at hand, but that's where it's heading, and publishers who get that right will be smiling.

Robo-research

It's not just news that's being pushed out by bots. More and more (completely farcical) robot-produced research papers are being accepted at academic conferences. In 2005, three curious MIT students wrote a programme to spew out nonsense academic papers, and submitted one under their names, which was accepted at a science conference.

Now, the creators have made the programme – SCIgen (http://pdos.csail.mit.edu/scigen/) – available as a free download. Within seconds, it will spew out random computer science research papers, including graphics including graphs, figures, and citations. "Our aim here is to maximise amusement, rather than coherence. One useful purpose for such a program is to auto-generate submissions to conferences that you suspect might have very low submission standards," the creators state on the website.

In February this year, French researcher Cyril Labbé revealed in *Nature* that 16 nonsense papers created by SCIgen had been used by German academic publisher Springer. Similarly worrying is the fact that more than 100 other fake SCIgen papers were published by the US Institute of Electrical and Electronic Engineers.

FLYERS – HILLBROW, JOHANNESBURG: from the series Life under Democracy – Dale Yudelman

If computer-generated 'research papers' are slipping through as the real deal in academic circles, in which standards are supposed to be high, there's not much prevent dishonest publishers spitting out never-ending slews of cunningly-constructed, computer-generated fake news (as opposed to human-generated satire), all in the name of making a quick advertising buck from the gullible masses they attract.

At the time of writing, very few – if any at all – South African news publishers are publically experimenting with robojournalism. It's hardly a secret that when it comes to technological innovation in news media, we tend to lag behind our more modern counterparts.

There, robo-journalism is only just starting to peek its head out from the future and into the present, so it will likely still be a number of years before it begins to be factored into business models in this corner of the world. Here, it's often a case of "let's see what works elsewhere in the world, and then jump on that bandwagon". For now, the robo-journalism bandwagon is still being built, but when it starts picking up speed, we may be in for an interesting ride.

In a June 2012 Daily Maverick piece (*Robojournalism: How afraid should we be?*), Hein Marais points out that large volumes of news are already being churned out by "harried, dynamic but befuddled drones", and that "the line separating algorithmic news from the current state of things is fuzzier than we realise." Where does that leave us? Perhaps *we* are the befuddled ones – more so than we realise.

Journalism has many guises, but its bare essential – telling stories – remains the same. Journalists have gathered facts and told stories since before the first crackle of radio and they will gather facts and tell stories until Google controls our planet (which may not be too far off). Technological innovations like robots will make it easier for us to tell more and better stories, and in less time, but they could leave junior journos out of jobs in the not too distant future.

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