AI Driven Creative

Summary:
Although recent advancements in natural language processing and proliferation of vendors touting AI-driven creative tools suggest that we are in the age of automated creative development and testing, at scale, a closer look reveals that we are not there yet. A review of the industry news and case studies show that AI-driven creative is still mostly dynamic creative optimization and primarily for emails, digital and social. Campaigns like the Lexus ES' film, which was scripted by IBM Watson, are rare, and indicative of cases where the use of the AI in the creative development or in the actual ad as an interactive feature, is to garner attention through its novelty and innovation. The Lexus case study also highlights the sheer amount of data, as well as additional resources, required to pull off an AI-developed video spot on that scale.

In terms of copy testing, there is one paper published in the Journal of Advertising (Chen, Xie, Dong, & Wang, 2019) that suggests that dynamic creative optimization (DCO) would be a more cost-efficient testing method than traditional pre-testing, but this argument seems to be more theoretical than based on any real-world examples. We did not find any published case studies or discussions of using DCO or other AI/ML tools as an alternative to traditional copy testing methods, especially for non-dynamic creatives or beyond versioning.

The following project includes an overview of the current uses of AI/ML in creative development, emerging trends, best practices and case studies.

Key takeaways:

- **Advanced algorithms can help identify themes, patterns and differences in data that can assist humans in developing ad creative, but they cannot autonomously come up with great creative ideas** (Benson & Joffe, 2020).
  - **This is line with current practice in ad agencies.** A number of advertising agencies are embracing AI but they are mostly using the technology for behind-the-scenes workflow. For instance, San Francisco-based Heat became the latest agency to unveil a dedicated AI practice in June of this year. The co-heads of the unit said it will **focus mostly on back-end applications, like surfacing creative trends and personalization**, using services acquired or developed by parent consultancy Deloitte Digital. (Kulp, 2019)

- In addition, **it is still early days in the application of AI and ML to analyze ad creative.** Many of the most advanced applications draw on the established use of algorithms in programmatic buying – matching ad
creative elements (messages, offers, images, language) to targeted market segments (Benson & Joffe, 2020).

- **Dynamic creative optimization (DCO)** has some advantages over A/B testing. DCO can measure both the independent effect of each creative element and the interaction effects of the creative element mix. However, it is important to note that **AI-programmatic advertising evaluates only the immediate impact of advertising because it is easier to track the short-term behavior of users** (Chen, Xie, Dong, & Wang, 2019).

- **Programmatic Creative Platforms (PCP)** are making progress in automatic copywriting. For instance, **Alibaba has offered an AI-enabled copywriting service to its business partners.** This AI copywriter can produce 20,000 lines of copy per second (Chen, Xie, Dong, & Wang, 2019).
  
  - In addition, Chase made headlines after the company announced a five-year deal with Persado for creating **marketing copy on display ads, Facebook ads and in direct mail.** Chase says that **ads created by Persado’s machine learning performed better than ads written by humans,** with a higher percent of consumers clicking on them—more than twice as many in some cases. (Pasquarelli, 2019)

- However, George Slefo reports in *Ad Age* that "many companies say they can achieve these granular interactions—claiming that AI and machine learning will enable millions of ads to be served using only a handful of creatives, while increasing engagement and return on investment—but they often oversell their capabilities" (Slefo, 2019). For instance:
  
  - Simon Lejeune, Head of User Acquisition at Hopper, a hotel- and flight-booking app, **shifted its entire budget toward so-called personalized ads after seeing performance double compared to the running of "generic" ads.** However, Lejeune pointed out that the high performance was **likely due to the personalized ads being mainly promotional: "The deals 'are very good clickbait.'"**

- **Lexus made headlines after creating the first ad scripted by an AI.** While the AI review of 15 years of Cannes Lion-winning ads was the backbone of the creative process, it was supplemented by several other data and insight injections, as well as human guidance. What’s more, the film was directed by an Oscar winner, Kevin Macdonald. (Griner, 2018)
  
  - According to David Griner of *Adweek, in terms of copywriting and overall creative, it’s not a stellar ad. That said, it’s a worthwhile project for the industry to take a close look at.** While its storytelling ability is still relatively primitive, AI-driven creative shows an eerie amount of potential.
The following Deep Dive covers:


II. Use of AI in Creative Development: Case Studies & Campaign Examples.

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Deep Dive:


Painting by Numbers: Ad Creative and AI

At the ARF's North by Northeast (NxNE) conference, Kerry Benson of Kantar, and Michael Joffe of Google, discussed key questions surrounding the role of AI in the creative process: can AI generate good advertising? Can machine learning supplant human creativity? What are the best practices for harnessing the power of sophisticated computer algorithms in the creative process?

Key Takeaways
Kerry and Michael agreed on most points:

- Advanced algorithms can help identify themes, patterns and differences in data that can assist humans in developing ad creative, but they cannot autonomously come up with great creative ideas.
- The algorithms provide a wider view and facilitate quicker iterative feedback loops that enable human teams to make better decisions.
AI and ML mostly serve as tools for humans, rather than as machine substitutions for human creative inspiration – much as art directors have come to use Photoshop as a tool.

It is still early days in the application of AI and ML to analyze ad creative. Many of the most advanced applications draw on the established use of algorithms in programmatic buying – matching ad creative elements (messages, offers, images, language) to targeted market segments.

Uses of AI and ML still need to be driven by human-stated hypotheses and problem formulations. This usually is managed by supervised learning algorithms, but even unsupervised ones are subject to the disciplines of hypothesis testing.

There is a high risk of human biases seeping into algorithmic solutions. Biases enter from the data when historical creative treatments are taken as inevitable. Biases also enter when humans make unconscious or conscious choices about how to frame the problems or enable the analytics.

Norms are still elusive in that they require a vast number of cases with comparable measures of dependent and independent variables.

Clients continue to be interested in AI-based methods of developing, testing and iterating ad creative. Clients pursuing data-driven creative span the spectrum of categories. They tend to be large companies, but also include some smaller ones – especially in DTC – that seek competitive advantage from data-driven approaches to ad creative development.

Though AIPAC is farther ahead in ways of integrating ecommerce with video, it is incorrect to claim that any part of the globe has a huge lead in applying AI to advertising. In addition, most creative trends are still originating in North America and Europe.
Understanding Programmatic Creative: The Role of AI

While artificial intelligence (AI) has already automated the media buying process, the advertising creative process still requires extensive human effort. In this paper, the authors argue that such discrepancy calls for AI to transform the advertising creative process. They provide a framework for understanding and investigating programmatic creative by drawing evidence from the advertising industry in China.

Key takeaways:

- **Programmatic advertising should consist of both programmatic buying and programmatic creative:**
  - Programmatic buying integrates the data management platform (DMP) and the demand side platform (DSP) to resolve "the core challenge of finding the best match between a given user in a given context and a suitable advertisement."
  - Programmatic creative integrates the content management platform (CMP) and programmatic creative platform (PCP) to facilitate or automate the creative process in this consumer-centered and data-driven marketplace.
  - PCP consists of dynamic creative optimization (DCO) and programmatic advertisement creation (PAC). The ultimate goal of PCP is to generate large-scale personalized and contextualized ad messages in real time.

- **Because current AI technology alone is not able to "understand" or "judge" an ad, it must rely on real user feedback to determine its effectiveness.** DCO can test in parallel the performance of many variations of advertisement design in different contexts at the same time. By analyzing the real-time performance data using machine learning algorithms, DCO can help PAC improve ad content quality on the fly. (Slefo, 2019)

- **DCO vs. A/B testing:** Traditional A/B testing lets the advertiser compare the performance of advertisement designs in the field. However, the results can merely suggest which advertisement works better without demonstrating the independent contribution of each creative element and their synergy effect when they are combined with the rest of the creative elements.
  - On the other hand, because DCO is closely integrated with PAC. So, it can measure the independent effect of each creative element and the interaction effects of creative element mix. By repeating this optimization process, PCP pushes advertisement designs to converge to the most effective level.
- The authors argue that **comparatively, DCO has two advantages over traditional pretesting**. First, DCO allows advertisers to test real market response from real customers. The test results have strong external validity and robustness. This lets advertisers confidently apply the advertisement to a large audience group. Second, it is a low-cost testing method. Because DSP allows advertisers to bid for individual impression opportunities, advertisers can test advertisements with a small number of potential consumers.

- **However, AI-enabled programmatic advertising currently focuses on effectiveness/performance-based advertising because it is easy to track the short-term behavior of users** and evaluate the immediate impact of advertising; **but, the long-term impact of programmatic advertising is unclear**. How would programmatic advertising affect brand attitude, loyalty and equity?

- **PCP is also making progress in automatic copywriting.** Now PCP can insert or replace certain keywords in an advertisement according to the user’s big data. For example, PCP can add the location name in the advertisement text to make the target audience member feel that the message is relevant to him or her.

  - **Alibaba has offered an AI-enabled copywriting service to its business partners.** This AI copywriter can produce 20,000 lines of copy per second.

  - **However, AI copywriting technology is still in its early stages.** It is recommended only for creating promotion-oriented copy for small businesses due to the limitations of natural language processing (NLP).

- But the authors believe that the technology will gradually improve and eventually, take over more sophisticated tasks and serve larger clients. For example, Facebook AI and the University of Washington developed RoBERTa, an NLP model that sets the standard in AI reading comprehension.

- **PCP can automatically pull creative elements from CMP according to tags and arrange them in a creative format.** For example, Luban, Alibaba’s programmatic advertisement creation service, is able to automatically adjust the content, design style, information complexity, colors and so on. During the 2018 "Double 11" shopping festival, **Luban designed about six million banner advertisements for 200,000 merchants.**

  - However, when it comes to traditional creative templates, **human effort is still required** to choose templates and select creative elements to fill them up.
Another key point to consider is that programmatic creative varies greatly in design styles - an area for improvement is ensuring a consistent brand identity for an advertiser.

- **PCP can be applied to both display advertisements and video advertisements.** For example, Kuaizi Technology can break down a video advertisement into several shorter clips and rearrange the clips in different orders to create new video advertisements.

- **But these advertisements are not pulled from thin air.** Because an advertisement is a creative combination and arrangement of creative elements, **PCP needs an even larger number of creative raw materials, including pictures, video, and so on.** The quality standard of advertisement content requires advertisers to adopt CMP in order to collect and manage content big data.
  
  - Similar to DMP, CMP also aggregates creative elements from multiple sources, creates tags for the elements, and provides them to PCP to generate user-specific and context-specific advertisements. None of these results can be achieved without state-of-the-art AI algorithms.

- **Currently, programmatic creative lags behind because content big data and machine learning algorithms in this field are underdeveloped.**
  
  - **First, programmatic creative needs a better computer vision solution** to build larger, richer and more structured content big data, to provide searchable creative visual elements.
  
  - **Second, programmatic creative needs better machine learning algorithms to create high-quality arrangements of creative elements.**
  
  - **Third, programmatic creative needs better NLP models to comprehend and compose text content.**
  
  - **Fourth, programmatic creative needs more general AI to cover video and audio media formats** and to integrate them with graphical and textual elements, in order to create a richer advertisement experience for the user.

- **Although we are seeing advancements in AI, it is obvious that we cannot fully replace human designers with AI at this stage.** It is more appropriate for human designers to use programmatic creative to reduce their workload, increase efficiency and improve the quality of advertisements. Alternatively, it can serve as a cheaper substitute for small businesses who cannot afford to hire a professional, in-house advertising team.

- **However, there are technological, regulatory and legal challenges faced by programmatic creative.** For instance:
o Programmatic creative cannot be fully automatic because advertisers still need to approve the ads before publication. Although computer vision can help censor explicit content and NLP can help detect inappropriate wording in advertisements, such solutions are not perfect. **Advertisers rely on human auditors to manually inspect advertisements because of the high-stakes legal and public relations consequences. AI still has room for improvement in terms of reliability.**

o Programmatic creative needs content big data to provide creative elements. CMP must decompose traditional media material. It is worth emphasizing that **CMP should work very carefully to avoid copyright infringement issues**, because PCP will use a large number of creative elements in the PAC process.

o DCO needs to work closely with DSP and DMP to get real-time feedback from users. Access to accurate user profiles is also crucial for generating relevant advertisement messages. **Users are increasingly concerned with how their data are being collected, shared and used.** How do advertisers legally and ethically obtain, utilize, and protect user big data without hurting the interests and experiences of users?

o Strict regulation can also create strong incentives to develop new technologies, protocols and practices to enhance the foundation of programmatic creative, while protecting user privacy. For example, Xiaomi, a Chinese technology giant, developed a **blockchain-based DMP technology**. It allows advertisers to achieve better targeting accuracy, prevent fraud and protect user data by encryption.

- **New theories and methods are needed to conduct research in this area and provide guidance for the advertising industry.** We need collaboration between advertising scholars and computer scientists to investigate the following questions: What is the relationship between AI creative and human creative? Do they complement or replace each other? How should advertising agencies react? What will the development of 5G and Internet of Things technology bring to programmatic creative?

**Artificial Intelligence in Marketing Report**


This report, developed by the IAB AI Working Group, was formed to help marketing and technology executives navigate the impact AI and machine learning will have on the world of digital advertising. The guide offers a full picture of the benefits of AI in marketing, real-world use cases, best practices and key takeaways for marketers looking to leverage AI to better engage with customers at scale.
Key takeaways:

- **Over the next five to 10 years we expect this trend to accelerate as marketers** learn how AI can not only make their programmatic advertising smarter and better, but also **optimize performance, personalize marketing, automate ad creation, target new audiences, fine-tune their media mix** and more. They may even use AI in ways we can’t yet imagine as technologies like 5G and IoT come into their own.

- **In addition to the opportunities AI presents, it also poses challenges.** The ethical challenges our industry faces with AI are far-reaching. As smart as AI is, **we need to be sure it’s not inadvertently discriminating against people** in ways that are not intended — and that all the data it takes to power it isn’t also putting customers at risk.

- **AI is already an integral part of the business landscape,** particularly in the U.S. **In a recent Deloitte survey of 1,100 U.S. executives from companies considered to be early AI adopters, 82% reported a positive return on investment for AI initiatives.**

- When it comes to marketing and advertising, AI is extremely pervasive, with **at least 80% of the digital media market likely to be using some kind of AI in advertising this year.** In fact, modern digital advertising as we know it today wouldn’t exist without it. AI is used to profile visitors to a website or app, then that information is used to target and deliver ads to a network of platforms and services that play different roles at each stage of the advertising supply chain.

- **AI-powered systems can automate the process of creating ads, based on your goals.** For instance:
  - Social media ad platforms already do this with intelligent automation, which suggests ads you should run based on the links you’re promoting.
  - There are also **third-party tools that use natural language processing and natural language generation**, both AI-powered technologies, to **write ad copy** that performs as well or better than human-written copy — in a fraction of the time and at scale.

- For marketers looking for a longer tail relationship through media mix modeling, advertisers **can use AI to identify the consumers who would be most receptive to their campaigns** and have a high lifetime loyalty value for their brand. This lets them optimize their audience strategy by channel. AI can continuously issue recommendations for how to refine the media mix based on how consumers are responding to messaging on different channels. This lets advertisers determine their optimal media mix strategy and **increase digital advertising ROI.** In this way, brands and agencies can completely automate their marketing mix allocation — saving valuable time and money.
The “Artificial Intelligence in Marketing” report includes real-world examples. The following ones include the use of AI in the creative:

**Toyota Prius Prime: Turbocharging Engagement with Cognitive Ads.**

- IAB Artificial Intelligence in Marketing 4Toyota, in collaboration with Watson Advertising, sought to reach and engage auto buyers interested in the Prius Prime. Since the Prius Prime is a technologically advanced car, Watson Ads provided the perfect avenue for engaging and educating this tech-savvy audience.

- **Watson Advertising and Toyota launched the first cognitive ads for the auto industry with Watson Ads.** Watson was trained on product information and Toyota Prius Prime FAQs and used natural language processing to enable 1:1 dialog with users. Watson Ads engaged in real-time conversations, allowing consumers to interact with Toyota Prius Prime via dynamic ads across The Weather Channel app and website.

- Results: Toyota saw a 37% higher engagement with audience-based location targeting and a 20% purchase consideration for men ages 35 to 49.

**IKEA: Voice-Enabled Interactive Ads that Learn**

- IKEA and media agency Wavemaker tapped Instreamatic to launch a new, voice-enabled ad campaign that could take advantage of Instreamatic’s AI-powered dialogue advertising platform. The campaign sought to promote IKEA’s new line of bedding products. To do so, the IKEA campaign used audio ad creative that prompted listeners to interact in a conversation with the brand, browse a list of new products, and hear IKEA sing a lullaby — a catchy jingle — about the products selected. The ads were played on music apps in mid-roll positions, and on digital radio apps in the pre-roll position.

- Using natural language understanding (NLU), the voice AI core within Instreamatic’s platform enabled listeners to interact with audio ads through natural and conversational dialogues. The ad creative for IKEA’s campaign made smart use of these capabilities to prepare a range of responses, depending on the user’s reaction to certain prompts. The Instreamatic platform’s AI technology uses deep learning to continuously increase its vocabulary, its understanding of user intent and its predictive power. **These capabilities let IKEA iterate on ad creative that optimizes both ad experiences and campaign performance.**

- Results: IKEA’s campaign achieved an engagement rate of 7.68%, a total engagement rate of 14.13%, and an interest rate of 4.28%. IKEA’s voice-
enabled campaign also achieved a stellar 58.3% reach metric, far surpassing the 25-35% historic norm for audio-only advertising.

**Campbell’s: AI Cooks Up Personalized Results**

- Campbell’s collaborated with Watson Advertising on the first-ever consumer use of IBM Watson technology for advertising. **Watson Ads lets consumers interact with the ad experience** by allowing them to ask questions via voice or text and receive highly personalized information in response.

- Chef Watson analyzed thousands of recipes to understand how ingredients are used in different dishes, commonly paired ingredients and varying cooking styles. Chef Watson then combined this knowledge with machine learning specific to Campbell’s recipe library and ingredients, to **generate unique recipes based on a consumer’s tastes**. Because this first campaign was a proven success, Watson Advertising and Campbell’s applied these insights into another Watson Ads campaign.

- Results: Campbell’s saw a 1.9x increase in desktop ingredient submissions rate throughout the campaign and a 27% mobile app video completion rate.

**Agencies are Embracing AI and Making It Part of Their Workflow: Artificial Intelligence, once a futuristic novelty, is becoming a utility**


This article provides an overview of how creative agencies are using AI/ML in their organizations and work:

- **When R/GA first rolled out its dedicated artificial intelligence practice, Brand AI, last July**, the global agency touted its potential to **produce branded chatbots, voice apps** and other projects that **put new, AI-related technologies front and center.**

- **A little over a year later, the division’s role has changed considerably, according to R/GA chief technology officer Nick Coronges**. While it has certainly created campaigns with explicit AI elements—a chatbot for the Cosmopolitan of Las Vegas, for instance—the **agency found the tech to be of much more use in the behind-the-scenes workflow of its operations.**
  
  - Coronges: "our mission now is really to have data strategists and engineers plugged into all the work we do, rather than be a separate door into the agency."
  - The agency has found **AI particularly useful for more rote applications** like machine learning-powered decision trees and predictive analytics tools that can hone the user experiences of digital products.
“Most projects where AI techniques were effective weren’t designated as AI projects from the outset,” Coronges said. “If you start with AI, it puts people in the mindset of fitting a tech solution to a problem that doesn’t really exist. Instead, we use AI techniques to solve real problems we’ve identified.”

• **This evolution mirrors a broader shift in how ad agencies are treating AI and data science.** As recent breakthroughs in machine learning have galvanized the business world, agencies like Epsilon, Heat, R/GA and Wunderman have formed internal units in the past couple of years, dedicated to integrating newly available AI tech into campaigns.

• **Software that makes machine-learning tech easier to navigate for the non-coding layperson has also contributed to its proliferation across agency departments,** according to Ian Beacraft, VP and Group Director of Digital Strategy and Creative Technology at Epsilon. “This has helped us break data out of the sole domain of analysts and data scientists and directly into the hands of planners, accounts and creatives,” Beacraft said.

• San Francisco-based Heat became the latest agency to unveil a dedicated AI practice in June of this year. The co-heads of the unit said it will focus mainly on back-end applications, like surfacing creative trends and personalization, using services acquired or developed by parent consultancy Deloitte Digital.

• According to Jocelyn Lee, co-head of Heat’s AI practice, “We are teaching and learning. And all of our different creative teams are using AI to help enhance the things they are doing so that we have a leg up with predictive insights and not just latent insights.”

• In one project for a major shoe brand that the agency said it couldn’t name publicly, the unit used engagement and clickthrough data to tap into simmering trends tangential to sneakerhead culture in areas like gaming and tech.

• The creative team then used those conclusions to produce online ads that exceeded the client’s goal of 30% net new audiences within 30 days, according to Lee. “This shoe retailer felt like they didn’t have the brand permission to speak to people in the way that would make them feel like they were relevant,” Lee said. “It really allows us to place bets on things we know are going to be huge.”
The Reality of Machine Learning in Marketing

According to Sachin Puri, VP, Growth Marketing, McAfee:

- **Dynamic creative**, the ability to develop and test different combinations of creatives and copies in real time, is a perfect example of where human creativity and machines complement each other.
- Essentially, marketers can build a library of images, headlines, messaging and promos, while machines via ML can run tons of multivariate tests to optimize creative performance by creating a unique personalized ad with varying image, copy, headlines, color and call to action.
- **Many platforms, especially social and search, already offer solutions to run dynamic ads at scale**, including Facebook’s Dynamic Creative Ads and Google’s Responsive Search Ads.
- In addition, dynamic creative optimization and creative management platforms are merging into a unified platform which seems to offer end-to-end solutions to advance productivity, translation, formatting, optimization, testing via iterative creative generation and reporting.
- This will continue to unlock the power of dynamic creative for display advertising.
- **AI-based natural language processing is already powering chatbots, and it’s only a matter of time before marketers also adopt machine-driven dynamic copy generation as well.**

Individualized Video Ads Promise Unprecedented Connections—but Hurdles Remain

Companies such as Publicis, S4 Capital, Interpublic Group of Cos., Adobe, Salesforce, Google, Facebook and Amazon are **all investing heavily in the personalization arena, but there are challenges to overcome**, especially in terms of achieving the scale marketers desire in areas such as video.

Key takeaways:

- According to George Slefo of Ad Age, "many companies say they can achieve these granular interactions—claiming that AI and machine learning will enable millions of ads to be served using only a handful of creatives, while increasing engagement and return on investment—but they often oversell their capabilities."
Simon Lejeune, Head of User Acquisition at Hopper, a hotel-and flight-booking app, concurs: "I could see a future where Coke has 200 different versions of a specific product and lets Facebook pick the best-performing creative," however; “issues will happen.”

Hopper shifted its entire budget toward so-called personalized ads after seeing performance double compared to the running of “generic” ads. The deals “are very good clickbait,” he says. “When someone from Chicago sees they can go to Hawaii for $299, it gets a lot of engagement.”

Chris Pierantozzi, Executive Creative Director at Saatchi & Saatchi, who has been making personalized ads on behalf of Toyota for years, starts the process in the production stage, such as shooting video with the intention that it will be spliced into multiple different forms of creative. There are two big hurdles to true personalization at scale, according to Pierantozzi:

1. "We’re still waiting for ad tech to get to the vision for purely personalized content, because right now it’s a terrible system and not advanced; banners have been dynamic for 10 years now and video would be next, but we’re waiting for it to catch up. Some tech can enable it, but not all."
2. “We’re constantly dancing between scale and personalization ... Scale is always an important part for mass brands in trying to make sure we’re hitting enough people in the process pool.”

The concept of so-called “personalization at scale” doesn’t mean each person will see an ad customized to their particular personality. It’s more the creation of very specific consumer segments based on a variety of attributes, such as job, location, hobbies and purchase history.

According to Mikko Hagelberg, Global Head of Industry and Retail at Smartly.io, “[There’s] always going to be some level of segment customization." Someone who works in construction, for example, might like more information than someone who works at home with tools.

“We like to think that we’re unique and that we need one single message for us,” says Hagelberg. “But we’re a lot more boring [than that] and advertisers need to create variations [of consumer segments] at scale and learn what works and what does not.”

The following two articles discuss the developments in the use of AI in the wider creative industry and functions.
You Can’t Spell Creative without A.I.

There has been a rapid set of advances based on new language processing techniques, leading a variety of technology firms and research groups to introduce competing programs known as language models, each more powerful than the last.

- What has been, in effect, an A.I. arms race reached a milestone in February, when Microsoft introduced Turing-NLG (natural language generation), named after the British mathematician and computing pioneer Alan Turing. The machine-learning behemoth consists of 17 billion parameters, or “weights,” which are numbers arrived at after the program’s training. This training consists of access to an immense library of human-written texts, effectively more than all the written materials available on the internet.

- A.I. researchers who have worked in the field for decades say that it is important to realize that the programs are simply assistive and that they cannot create artistic works or make other intellectual achievements independently.

- According to Jerry Kaplan, an artificial-intelligence researcher who was involved with two of Silicon Valley’s first A.I. companies (Symantec and Teknowledge) during the 1980s, “creativity is still entirely on the human side.” Kaplan pointed out that the new language modeling software is actually just a new type of database retrieval technology, rather than an advancement toward a kind of “thinking machine.” “All this particular tool is doing is making it possible to get insights that would otherwise take years of study.”

The State of AI in the Creative Industry: from Watson to WhatTheFont

Companies have been using AI to quietly optimize their business for years, and its presence seems only set to grow—with its vast potential touted as the future of the automotive industry, a replacement for manual labor and even the answer to loneliness.

AI and machine learning serve a valuable practical purpose for many industries, but it has a more uncertain relationship with the creative world. Creativity and ingenuity are often seen as uniquely human qualities that can’t be replicated by machines, and as such, some have viewed AI’s place as a creative partner with suspicion.

- In many cases, AI’s most useful role has been one of a behind-the-scenes helper. A 2015 ad campaign by M&C Saatchi surprised even its own creative team, when its artificially intelligent poster examined how
long people looked at different creative iterations and evolved accordingly, reaching a peak effective poster within just 72 hours.

- **AI is also hard at work optimizing ad buys, making sure the right creative is seen by the right people.**
  - Olapic’s Photorank algorithm helps brands decide which photos are most likely to drive conversions in an e-commerce environment.
  - In 2016, Shutterstock abandoned keywords, and instead started using machine learning to analyze its database of 70 million images and four million video clips—everything from colors and shapes to tiny details—to more accurately make recommendations to users.

- **In addition to automate some of this grunt work and improve outcomes, some uses of AI suggest that it may also force us to reconsider our understanding of creativity.**
  - In 2016, ad agency J. Walter Thompson used machine learning to produce a “new” Rembrandt, based on the painter’s previous works. AI has also been used to transform photos into paintings in the style of Van Gogh.
  - Also in 2016, Sony unveiled an AI-composed pop song based on an analysis of thousands of different tracks.

- The world of design is also experimenting with such technology. For instance, AI system ANGELINA has been busily designing experimental video games since 2011, while San Francisco startup The Grid, uses AI to design complete websites.

- At Monotype, machine learning and AI isn’t quite designing typefaces yet, but it is being investigated as a creative partner, used both to identify typefaces and to understand the qualities that humans perceive in them. It’s given rise to the new WhatTheFont app, which identifies typefaces instantly using photos taken by the user.
  - The research team has also created machine learning-based technologies that suggest font pairs and recommend similar typefaces, potentially saving graphic designers hours of digging through font libraries. Other AI projects include teaching the computer to understand the more emotional qualities humans perceive in typefaces, whether it’s confident, happy, casual or dozens of other emotional states.
  - While humans still hold the reins when it comes to creating typefaces, all these examples show how AI could become an indispensable assistant in the creative process. It’s easy to see how it can encourage designers to think outside their (possibly biased) creative choices and consider new solutions.
II. Use of AI in Creative Development: Case Studies & Campaign Examples

AI Is Changing How Brands Develop Creative – Here’s What the Future Is Looking Like


According to this article from Joline McGoldrick, the Chief Product Officer at VidMob, (which offers AI-driven creative versioning tools and optimization services), AI is already helping brands develop a number of creative, engaging advertising experiences. For example:

- **The fitness chain Orangetheory used an AI breakdown of its audience’s online browsing habits** to learn why its customers frequently gravitated to the chain via ads on college sports content and music platforms, rather than health and wellness sites. Orangetheory then applied this information by producing video ads that linked the gym to the audience’s hobbies outside of working out.

- **Meanwhile, other brands are using AI to edit and optimize their ads while their campaigns are ongoing.** VidMob uses AI to evaluate how different aspects of an ad are driving advertising success (e.g., Is a nature scene more engaging than an urban landscape?). The insights it discovers are used to optimize the campaign’s creative via their network of designers. Through creative versioning tools "companies like AB InBev are using AI to pursue the most effective ad for every campaign."

- **The Chinese video site Tencent is testing a new feature that would allow advertisers to serve personalized ads as native product placements while people are watching its shows.** For instance, if an on-screen character is waiting for the bus, a brand could cover the bus stop with an ad relevant to the viewer’s interests.

However, the author cautions that:

- **While ad agencies have released a few pieces of video content created entirely by AI, these have largely been experiments designed to push creative boundaries and impress award show judges.**

- **A more likely outcome is that brands will use increasingly effective AI technology to free their human staff from the rote grunt work of data analysis and campaign optimization**, giving them more time for creative conception, campaign strategy, and other more interesting tasks.
An AI Tried to Write the Perfect Lexus Ad. Here’s a Scene-by-Scene Look at What It Was Thinking

This article discusses the campaign by Lexus which is described as the first ad both written by an AI and directed by an Oscar winner (Kevin Macdonald, who won Best Documentary for One Day in September in 2000).

CREDITS:
Brand: Lexus Europe
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The ad tells the story of a Lexus engineer putting the finishing touches on the new ES model, which then enjoys a scenic drive before being subjected to an odd and highly publicized crash test.

According to David Griner of Adweek:

- **To be clear, in terms of copywriting and overall creative, it’s not a stellar ad.** While shot beautifully and compellingly by Macdonald, the spot’s script is definitely like a Sunday drive through the uncanny valley, with disjointed ideas forming a storyline that’s less of a narrative than a series of checked boxes.

- **That said, it’s a worthwhile project for the industry to take a close look at.** While relatively primitive in its storytelling ability, the technique shows an eerie amount of potential.

More details about how the development of this film:

- **“I thought I’d be writing an ad with the assistance of AI,” says Dave Bedwood, creative partner at The&Partnership London. “Instead, it took over and wrote the whole script:** a machine telling the story of a machine coming to life. A lot of other AI work to date has been interesting because of the process itself. This has been fascinating–maybe scary–because the end product is good in its own right.”
• **While the AI review of 15 years of Cannes Lion-winning ads was the backbone of the creative process, it was supplemented by several other injections of data and insight.**
  
  - Emotional intelligence data from **Unruly** helped the machine learning process understand which parts of ads sparked responses from viewers.
  
  - The agency then attempted to coach the AI on “intuition” and how intuitive viewers respond to ads, through an experiment run with applied science lab **MindX**, based at the University of New South Wales.

• According to The&Partnership London’s CEO Sarah Golding: “It’s fascinating to see how the AI has absorbed and drawn on Cannes Lions’ most prized car and luxury ads–but the dollop of magic sauce is in our AI’s insights into human intuition, and how to provoke an emotional response in an audience.”

• “**Some of the key findings from the AI in terms of the ingredients for a perfect car advert were that:** the car doesn’t need to drive at all, unless this is part of the story; the driving should be peripheral to the story; characters in the story should have an emotional designator, for example a husband or father over driver or engineer; and the use of children helps increase the emotionality of an advert. Additionally, strong facial expressions are more powerful than strong language; ads are most effective where use of the spoken word is limited; use of a midpoint or twist is important to keep the story moving and to maintain interest; and the midpoint should involve an unexpected event, for example a crash or near miss.”

The following case study submission to the Account Planning Group (APG) was written by IBM Watson, the same AI that scripted the film for the Lexus ES campaign. Below is a summary of the case study, focusing on the details about what it took to enable Watson to write the script.

**Lexus: Can an AI write an award-winning paper?**


The process for enabling IBM’s Watson to write the script:

• **MindX** [the applied science division] at the **University of New South Wales created a bespoke experiment**. This experiment identified the individual preferences of intuitive humans when viewing automotive adverts (vs. the general population). This meant that the AI could weight preferences most prevalent to intuitive individuals.
• **Key findings from MindX:**

  - **The AI watched 15 years of Gold Cannes Lions.** This part of the experiment meant understanding how an award-winning advert should be structured. This was an essential part of writing the script. The **AI created parameters for data collection focusing on elements such as the actions, objects, locations and emotional highs or lows to find commonalities**; then tracked where in the adverts they occurred and in what combinations.

  - Since the only way the AI can understand emotion is through facial features, speech recognition and natural language processing, the company, **Unruly** [online video marketplace], **was brought in to help the AI identify the key emotions that drive the best response. It did this by aligning audience emotion against parameters of popular digital advertising.** For example, Unruly data showed crying is a popular human emotion, triggering positive responses.

    - The AI then plotted this against its own data which showed what the audience response would be to different triggers in the script.

**Results of the campaign:** The Lexus AI script sold out cars in most major European markets, pushed sales 40% above target, drove 478,307+ visitors to the website, and created £2m in earned media.
Chase Commits to AI After Machines Outperform Humans in Copywriting Trials

JPMorgan Chase announced that it has signed a five-year deal with Persado, a New-York based company that applies AI to marketing creative. Chase began testing a pilot relationship with Persado three years ago, by using the tool for its card and mortgage businesses. That relationship has now expanded across the financial giant’s platforms.

- **Chase says that ads created by Persado’s machine learning performed better than ads written by humans**, with a higher percent of consumers clicking on them—more than twice as many in some cases.

- **Chase plans to use Persado for the ideation stage of creating marketing copy on display ads, Facebook ads and in direct mail**, according to Yuval Efrati, chief customer officer at Persado.

- **According to Kristin Lemkau, CMO of JPMorgan Chase, machine learning can actually help achieve more humanity in marketing.** “Persado’s technology is incredibly promising,” she said in a statement. “It rewrote copy and headlines that a marketer, using subjective judgment and their experience, likely wouldn’t have.”

- **Persado executives say that while Chase is the first brand to employ its AI across platforms, other brands are planning to expand their use of the technology.** The company already works with 250 marketers across categories including retail, finance and hospitality, and with brands such as Dell, Williams Sonoma, and Expedia.

Air Canada: Air Canada

Air Canada, the largest Canadian airline, approached Persado, to apply artificial intelligence to their online marketing to improve the effectiveness of their copy.

- Air Canada faced a challenge common to online marketers: finding ways to cut through the noise and deliver marketing messages that truly resonated with consumers.

- Traditional A/B tests don't reveal the precise wording and formatting that generate maximal impact, and tailoring language to different groups is difficult, without a way to capture audience-specific language insights. Scaling learnings across marketing channels is nearly impossible.
• Persado's strategy focused on analyzing historic email content from Air Canada to understand their unique brand voice, before generating and testing emotionally intelligent variations on that content.
  o In one experiment, they created 16 versions of a piece of copy, representing 1,024 different ways to deliver the message.
  o Persado's platform breaks copy into five segments: emotion, formatting, description, call-to-action, and positioning. Then it analyzes impact across those variants.
  o They utilized machine learning and data science by developing a greater understanding of which variation combination and emotional triggers and would best appeal to Air Canada's customer base and compel them to take action.

• Air Canada focused its efforts on improving the relevance of communications sent to customers by incorporating emotional language that was most likely to inspire a response, based on past interaction with the brand, through more compelling email offers.

• Persado utilized multi-variant, experimental design to analyze how components of a subject line or email body contributed to Air Canada's customer response rates. Through repeat testing as the campaign progressed, Air Canada learned which emotions resonated with customers across channel, audience and season.

• The company found that, particularly in the travel space, companies tend to treat emotional appeal as an afterthought, despite evidence which reveals that copy utilizing emotions based in anxiety perform best.
  o For example, a headline reading "you should know about this" sparked a 3% lift in engagement, versus a 3% drop for a "we got your back" headline utilizing safety language and a 5% drop for a "you're on the list" headline using exclusivity language.

• The strategy to deepen customer relationships through emotional language led to better performance and bottom-line results, as well as a more human and personal customer experience.

Dell Uses AI to Increase Conversions +45%

Dell partnered with Persado to harness the power of words in their email channel and garner data-driven analytics for each of their key audiences. Excited by their success and learnings with email, the computer technology giant was eager to elevate their entire marketing platform with Persado. Dell now uses AI to improve
the marketing copy of their promotional and lifecycle emails, Facebook ads, display banners, direct mail and even radio content.

**Clorets (Mint Tab): A.I. vs. Human Creative Battle**  

This case study describes how **Clorets Mint Tab, a Mondelez Japan candy brand, used the world's first artificially intelligent creative director to make a new commercial.**

- The Japanese market is saturated with similar products, which made it difficult for Clorets Mint Tab candy to differentiate itself from their competition. Clorets Mint Tab, a tablet-type, mint candy sold by the confectionery-maker Mondelez Japan was looking for a campaign that would effectively communicate the product's benefit of "instant refreshment that lasts for 10-minutes" through an approach that was as refreshing as the product itself.

- The solution was to build the world's most innovative creator from scratch, focused on the insight that people are interested in "world's firsts."

- Specifically, McCann Erickson Japan, the brand's lead agency, built the world's first-ever artificial intelligence creative director, as it has the ability to give creative direction to make commercials. Its name, AI-CD β. The campaign envisaged the A.I. creative director competing against a human creative director for the best Clorets Mint Tab commercial. This competition soon became a reality. The two directors were given the same creative brief, staff and budget. The ultimate winner was to be decided by viewers in a nationwide poll.

- In order to develop the A.I., McCann Erickson Japan looked at ten years' worth of ACC winners, a highly prestigious advertising award in Japan. The agency went through the winning works, putting original tags on them, and deconstructing and analyzing the elements to develop an algorithm, which was installed into the A.I. The A.I. was to use this database to give creative direction during the making of an advertising video.

- Over 20 million people were reached in the campaign. The leading 97% of those who watched the commercials and took part in the poll said they would buy the product. Other outcomes: the public relations effect was worth $500,000 in media value; the ROI based on PR and earned media: 1.5:1.