



PLAYGROUND^{XYZ}

Context, creative and attention

Using attention signals
as a feedback loop for
context-advertisement
alignment



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An introduction from Playground xyz

Pressure from consumers has led the ad industry to address its reliance on identifier-based approaches and instead consider how audiences can be granted privacy-conscious ad experiences. As a result, Apple retired the 3rd party cookie in 2021. Google is scheduled to follow in late 2023.

With all this playing out, discussion about the resurgence of contextual advertising solutions (which inherently don't rely on cookies) has been pronounced. The promise of an identity-free, privacy-forward way to deliver ads at scale is appealing indeed. However, a number of challenges are holding contextual targeting back.

The premise of matching the right ad to the right context is seemingly easy in theory but executionally quite complex and often flawed. Some approaches use semantics to determine where that brand should appear (i.e. a sportswear brand should run in sports environments) - but this is often overly simplistic for the majority of advertisers. Others use intuition or 'best guess' efforts (i.e. smartphone ads should run in technology environments) but these are prone to individual or historical bias. Others feel like they don't have a natural context at all (i.e. washing powder) and don't know where to start.

So how can we better guide these decisions? The answer, of course, is data. But to date, we haven't had the right data: Viewability is almost entirely driven by the publisher and placement of the ad slot, making it a poor signal for ad relevance. And Click Through Rate (or any further downstream metric) is much too sparse to form a view on the myriad of contexts available. In short, we've been missing the right 'feedback loop' to understand this fascinating subject matter properly.

And that's where attention measurement comes in. Recent advances that blend opt-in eye-tracking panel data with AI now allow advertisers to quantify attention on their campaigns at scale. For the first time, we are able to really get down in the weeds to better understand what's happening. And, as it turns out, it's fascinating.

A growing body of research from companies like Playground xyz, Lumen, Amplified Intelligence and Adelaide continue to show the positive relationship between greater attention and both brand and performance outcomes. In this study, we leverage that groundswell to address the specific topic of context and its role in delivering more attention on ads.

We have long theorised that Attention Time (the length of time, in seconds the ad is looked at) could be the missing feedback loop to supercharge contextual approaches. To investigate we engaged in a large, structured research project to understand the relationship between context, creative and attention. The investigation took the form of a number of key questions:

- Can Attention Time act as a feedback loop on contextual relevance?
- Is there a correlative relationship between context, creative and attention?
- Is this relationship static or dynamic?
- To what degree could the relationship be optimised on behalf of advertisers?

This paper sets out to answer these questions and provide a springboard of learning for future research into the topic. We hope it's timely, useful and informative.

Rob Hall
CEO // Playground xyz

Executive Summary

This large-scale research into context, creative and attention delivers some novel insights and actionable strategies for brands, agencies and publishers who are using contextual advertising and want to get the most out of their advertising spend. Key findings include:

1. The context an ad is delivered in has a large bearing on the attention it receives with the top-performing context receiving **94% higher Attention Time** than a baseline. By controlling for other factors we are able to posit that this large increase signals that a context-advertisement alignment / match has taken place.
2. Brands cannot expect that the top-performing context will stay consistent across multiple creatives or campaigns. **Only 8% of the time** will a brand have the same top-performing context for all their creatives. This points to a need for brands to be able to better measure and understand the impact of contextual targeting at a creative level.
3. There is a large opportunity to optimise contextual delivery to maximise the Attention Time the campaign receives. By targeting the top-performing IAB Tier 1 and Tier 2 contextual categories for that creative the brand could **increase Attention Time by 93% and 132%** respectively.

Methodology

In this study we examined the relationship between the contextual categorisation of a given page and the measurement of viewer Attention Time (the average time, in seconds, an ad was actually looked at) of a range of creatives displayed on that page.

Large-scale measurement was recorded across **59** advertisers, **683** creatives, **2,263** domains, **26,006** unique URLs and over **27 Million** impressions during the period 18th of February to 3rd of March 2022.

The attention data was collected via our Attention Intelligence Platform, which uses opt-in, panel-based eye-tracking data fused with AI models to measure Attention Time on the ads.

The contextual features of those URLs were then determined using **Verity™**: an AI-based natural language processing and image recognition engine developed by GumGum that allows for accurate contextual categorisation across the IAB v2 categorisation taxonomy from Tier 1 to Tier 4 in specificity.

Combining data from these two technologies across the large scale data set allowed us to confidently draw conclusions about the relationship between creative, context and attention.

Part 1: Attention Time as a feedback loop on contextual relevance

The primary metric referred to in this paper is **Attention Time: the length of time in seconds that an ad was actually looked at**. It's a quality-based and inherently human metric, and an incredibly effective indicator of a consumer's relative interest in an advertisement. And, when compared to existing proxy metrics like Viewability and Time in View, Attention Time is a far more accurate and actionable measure of ad effectiveness.

Attention Time: the length of time in seconds an ad was actually looked at.

The technology to measure Attention Time combines real eye-tracking data from opt-in panels with AI to measure it at an impression level. Unlike CTR, which captures a comparatively tiny snapshot of users who were inclined and able to take action at a given moment, Attention Time records consumer interest at scale, thus providing far more statistically significant data at a granular level.

Our previous research¹ has shown Attention Time's importance in predicting key performance indicators, especially when compared to Viewability; namely that it is **7.5x more important an ingredient of driving Awareness** and **5.9x that of Recall**. Through further research and in-market application for hundreds of global brands across thousands of campaigns, we've also found that optimising campaigns towards Attention Time results in positive uplift to many other brand KPIs. When baselined correctly, Attention Time provides an unrivalled signal of ad relevance.

Attention Time is a powerful feedback loop for ad relevance as it's predictive of brand and performance outcomes.

All of this makes Attention Time a powerful feedback loop on whether we've put the right ad in the right context. But of course, there are many factors that can influence the attention an ad gets - the environment, the placement, the creative etc. So we first asked ourselves how we could make sure that we were measuring what we thought we were.

To do this, we need to understand what is happening from a marketing science perspective. There are two important phenomena at play:¹

Attention Transfer

The notion of 'Attention Transfer' posits that the environment in which content is being consumed, plus the content itself, is a predictor of how much (or how little) attention a consumer will pay to the advertisement. It shows that "with all other things being equal, an advertisement seen or heard in a context that a consumer pays more attention to (i.e. is more involved in, excited about) is more likely to be seen".²

Priming

Priming, by contrast, aims to explain the "cognitive or emotional responses to the context (that) affect advertisement perceptions and response".¹

¹ <https://www.playground.xyz/whitepaper.pdf>

² Horst Stipp, Advertising Research Foundation: How Context Can Make Advertising More Effective, 2018

Attention Transfer and Priming are two effects that impact the relationship between context and creative.

Put simply, Attention Transfer is like a tide that can raise or lower all boats (in this case, the attention all ads will receive). The Priming effect created by the content then facilitates a context-advertisement alignment which further drives attention up or down for specific creatives (based on the level of alignment).

For the purposes of our study, our hypothesis was that, at scale (and across many brands and creatives) the presence of a strong relationship (i.e. increased Attention Time) between a given advertisement and certain contexts demonstrates that the Priming effect is taking place.

Part 2: The relationship between context, creative and attention

Our first goal was to see if the contextual properties of a page in which an ad is shown exerts influence over the amount of attention the ad receives. We have seen from our inspection of large numbers of campaigns that the ad format and media platform will have different average Attention Time, so we need to control for those factors. In addition, as shown in Figure 1 there can be wide variation in both the mean attention and distribution of attention that is received on specific URLs. This further helps baseline the notion of Attention Transfer and supports the thesis that the Priming effect is in play.

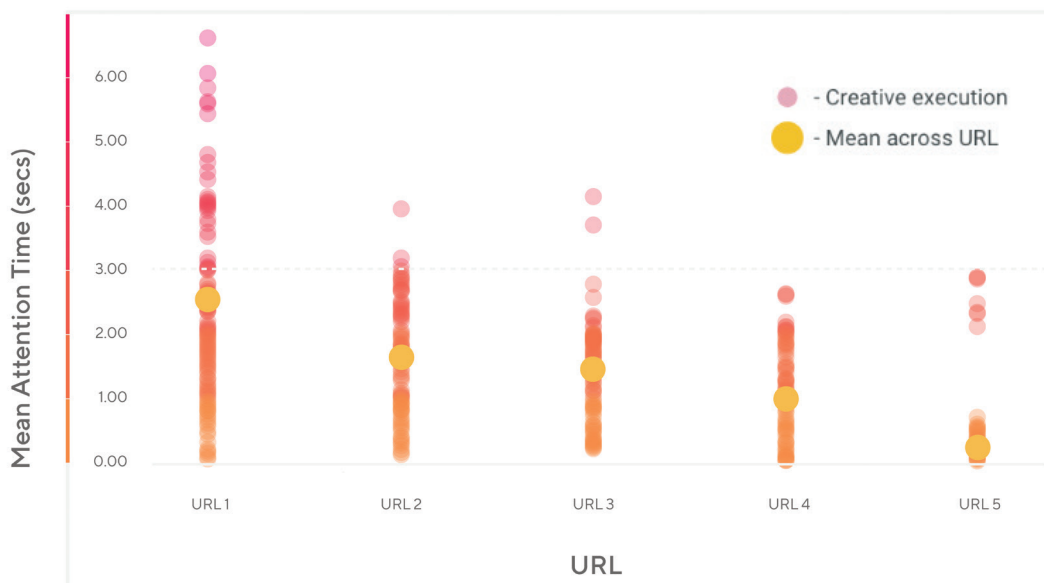


Figure 1: Mean Attention Time across sample URLs

This study involved looking at large numbers of impressions across many brands and creatives. As mentioned earlier, we took data from Feb to March 2022 for 683 creatives across 59 advertisers. With this large dataset we next looked specifically at

the impact the top-performing contexts have to the Attention Time the ad receives. In this case we call the contexts in order of their ranking, i.e. Context #1 = the highest performing context, Context #2 = the second highest performing context, Context #3 = the third highest. We use All Contexts to serve as the baseline for comparison.

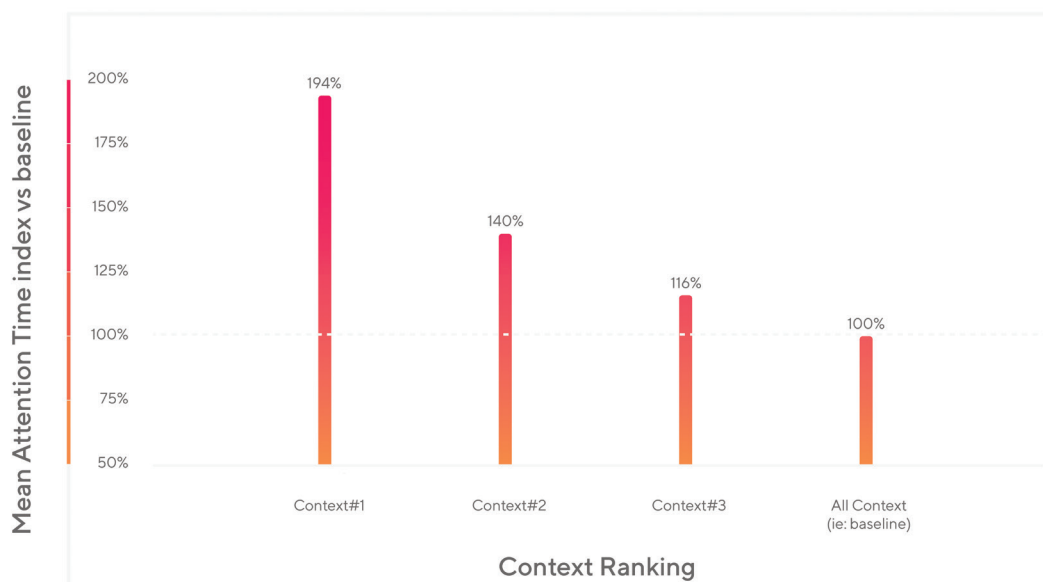


Figure 2: Mean Attention Time Index for Top-performing Contexts vs a Baseline

As seen in Figure 2, the top three contexts for a creative achieve a considerably higher Attention Time than the average or baseline with **Context #1 achieving a 94% increase** and **Context #2 a 40% increase**.

The top-performing context for a creative receives 94% more Attention Time than the baseline.

Given the variety of campaigns, creatives and inventory in this dataset we believe these increases signify the impact of congruence or alignment between the creative and the context (i.e. Priming). As these increases in attention are potentially predictive of brand and performance outcomes, there is a large opportunity for brands to identify and target these top-performing contexts. In the next section we seek to understand how reliably advertisers can achieve this.

Part 3: The dynamic nature of context

Once we have identified that the contextual category can influence the expected Attention Time, it is natural to ask whether this relationship will remain static for a given brand or change based on their various campaigns and creatives.

We investigated this topic by asking a specific question of our data: to what extent can a brand expect the top-performing contextual category to remain constant across all of their campaigns and creatives?

We looked at the advertisers in our dataset that had two or more creatives running during the research period and analysed the proportion of times that the brand could rely on any of the top 3 performing categories for a given creative to also be one of the top-performing categories for the advertiser's other creatives.

We call this **contextual continuity**. A high proportion or incidence would indicate strong contextual continuity, where brands could confidently expect their ads to secure similar Attention Time across the same contexts, no matter the creative execution. A low proportion would indicate the opposite.

LIKELIHOOD OF CONTEXTUAL CONTINUITY	Majority of Creatives (>50%)	Most creatives (>75%)	All creatives (100%)
Any of the top 3 contexts	81%	37%	15%
Top context only	30%	14%	8%

Figure 3: The likelihood of the top contexts (IAB Tier 1) being the same across a brand's different creative executions

In Figure 3, we see that a brand could expect the top 1st, 2nd or 3rd context to be the same across the majority of their creatives **81% of the time** - i.e there is a good likelihood that data from one piece of activity could positively drive targeting for some of the following campaigns.

70% of the time a brand cannot expect the same contextual category to deliver the highest Attention Time for the majority of their creatives.

However, when the requirement becomes the ability to do this on Most Creatives (>75%) and All Creatives, the likelihood drops to **37%** and **15%** respectively.

However, if that same brand was wanting to only target the top context, they could only expect it to be the same for the majority of their creatives **30% of the time**. And if wanting to do this across all creatives, the figure drops to **just 8%**.

Recalling that in Part 2 of this paper we saw that Context #1 will deliver far more Attention Time than Context #2 and #3 this presents a challenge for brands who want the optimal outcome.

Just 8% of the time will a brand have the same top-performing contextual category across all creatives.

Another cut of this data revealed a similar pattern shown in Figure 4. As the number of creative executions increases the proportion of campaigns that share the same top-performing context decreases. In other words, the more creative executions a brand runs, the more they should expect attention to peak across a variety of different contexts.

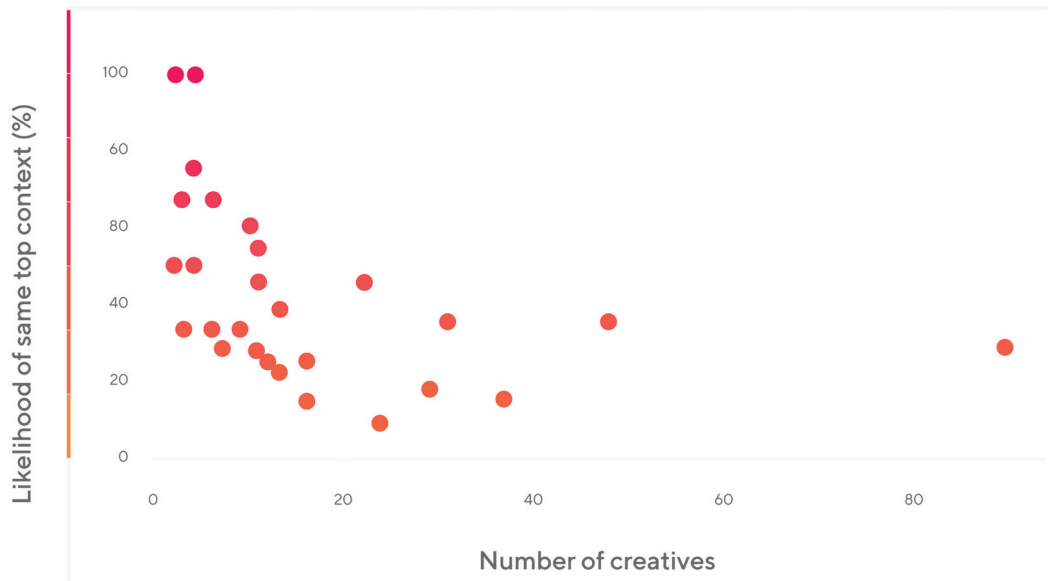


Figure 4: The likelihood of the same top context for brands running multiple creatives

Are these results surprising? Perhaps at first, but we believe they highlight how nuanced and multidimensional the quest for context-advertisement alignment really is. Industry research corroborates this notion saying that the ‘key is that the consumer experiences congruence between the context and the advertisement—on a cognitive level, emotionally, or even regarding the “energy level” in the advertisement’.³

With so many factors at play both across the creative and the context, finding alignment to maximise attention is quite dynamic, with our data pointing to the fact that while brands can do a solid job using the same contextual targeting across different creatives/campaigns, for maximum results the targeting should be considered at an individual creative level.

³Puccinelli, Wilcox, and Grewal, 2015 - Consumers’ Response to Commercials.

Part 4: Optimising contextual delivery to maximise Attention

So far, we have concluded that there is a relationship between a creative execution and the contextual environments in which it attracts attention. We have also seen that these contexts can be quite dynamic for a given brand with multiple creatives. These observations prompt the question: how can brands act on this information to achieve better results?

Our final experiment was aimed at estimating the lift in Attention Time a given brand could receive if it could successfully target its top-performing categories during the campaign.

Optimisation is predicated on an ability to predict. For this component of the research, we designed the study over time to measure the extent to which the combination of contextual categories and attention measurements within an initial period predicted the ability to increase Attention Time in a subsequent period.

We look at each creative individually (controlling for ad format and platform) and then use contextual categories as the grouping factor for comparison. For example, we want to examine the extent to which knowing how much attention a beauty brand received in a lifestyle context in period one predicts the attention it will receive in period two.

As mentioned earlier, we used a large dataset from Feb to March 2022 for 683 creatives across 59 advertisers. Each individual study required that a creative was exposed to at least four identical contextual categories across the two periods. These criteria typically resulted in a dataset of 200 creatives or less.

To control for the fact that some URLs naturally drive higher attention Attention Time than others (i.e. Attention Transfer), we conducted this study such that all URLs in the second period were not present in the first period. In other words, we are examining our ability to predict attention on novel URLs and domains, using only information about their contextual category and the attention previously received in that contextual category.

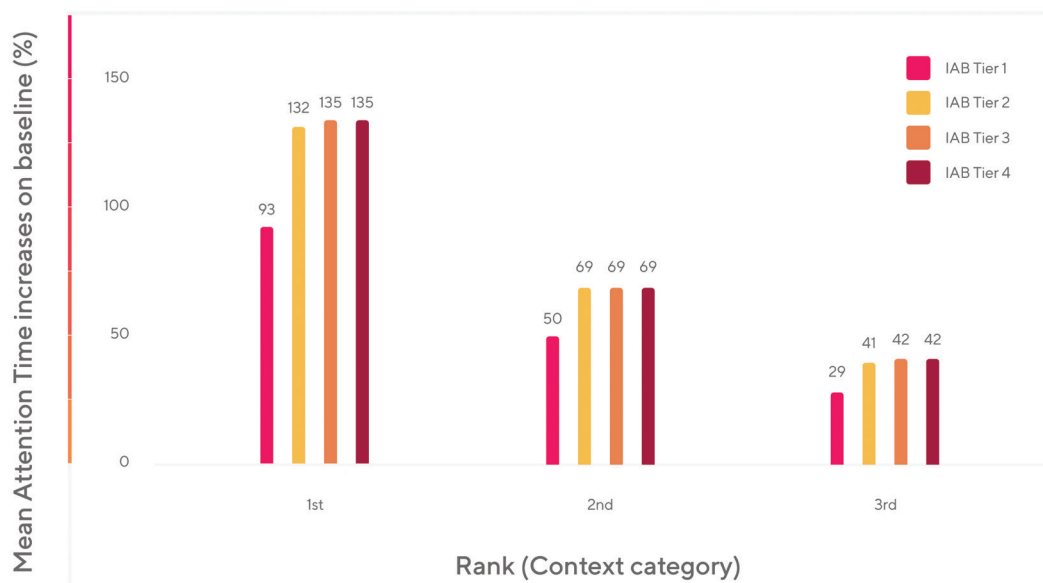


Figure 5: Mean increase in Attention Time when optimising to top contexts

We illustrate the outcome in Figure 5, in which we see the expected increase in Attention Time for a given creative. The 1st, 2nd and 3rd categories in this instance mean the top 3 performing categories from the control period. The Mean Increase on Baseline refers to the estimated gain in Attention Time the ad would receive had it targeted that category exclusively in the second period.

The Tiers 1-4 refer to the IAB Contextual Category Hierarchy with 1 being the broadest and 4 being the most specific. For instance: Style and Fashion (Tier 1), Women’s Fashion (Tier 2), Women’s Clothing (Tier 3) and Womens Sportswear (Tier 4). While this experiment doesn’t precisely factor in delivery concerns of the campaign, the IAB Tier 1-4 categories give us a useful yardstick as each step in specificity comes with a theoretical reduction in inventory availability.

Targeting the top-performing category across the IAB Tier 1 or Tier 2 rankings would drive a 93% or 132% lift in Attention Time respectively.

The data shows some interesting results, as shown in Figure 5. If the advertisers from the experiment could target the top-performing category for their creative there would be an estimated **93% lift in Attention Time** possible at the Tier 1 targeting. At Tier 2 the lift increases to **132%**.

Moving to the 2nd performing category shows us that a **50% lift in Attention Time** is possible at the broadest targeting and then a modest increase to **69%** if we go to Tier 2.

It is interesting to note that in this study we did not see much additional lift beyond the Tier 2 targeting across the top-ranking categories and more work needs to be done on this topic to understand why.

For now, we can confidently say that there is a very solid ability to use predictive analytics and optimisation to help brands reach the top-performing contextual categories to drive large gains in the Attention Time their ads receive.

Takeaways

While there is lots more to learn, we think this deep dive into context, creative and attention yielded a number of key findings that benefit brands, agencies and publishers alike:

Attention Time is a powerful feedback loop for contextual advertising as it is a potent signal of ad relevance and predictive of brand and performance outcomes.

There is a strong relationship between context, creative and attention. Delivering your ad into the right contexts is key to maximising Attention Time and taking advantage of both Attention Transfer and the Priming effect.

There is a fairly low degree of contextual continuity for brands across different creatives. Finding the best context(s) once and delivering to those for subsequent campaigns will not give the brand the best outcomes - the relationship between context and creative is nuanced and dynamic.

There is a large opportunity for in-flight optimisation to the top-performing contexts which could drive very significant increases in Attention Time for the campaign.

We hope this study was useful and that these insights lead to more discussion and research around this fascinating topic. Thank you for taking the time to read it.

The Playground xyz team

References

1. Horst Stipp, Advertising Research Foundation: How Context Can Make Advertising More Effective, 2018
2. Nancy M. Puccinelli, Keith Wilcox, Dhruv Grewal: Consumers' Response to Commercials: When the Energy Level in the Commercial Conflicts with the Media Context. 2015

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