

Dr.-Ing. Andreas Kraushaar, head of prepress technology and 20 years at Fogra – the research institute for media technologies based in Aschheim near Munich.



# Prepress is key

Andreas Kraushaar initially had ‘no idea about printing’ when he started at Fogra 20 years ago. He did however, bring one thing above all: a passion for color. As a media technology student, he was so fascinated by the lecture of a professor of lighting technology that color would shape his career from then on. Today, as head of prepress technology, Kraushaar is almost an old hand – his enthusiasm for color remains.

**TrueColors: Mr. Kraushaar, anything to do with color seems to trigger your curiosity. What makes your work so special to you?**

Andreas Kraushaar: Essentially, it's this insane interdisciplinarity. The unbelievable number of applications and touchpoints. Everyone is somehow affected by color, right? What grabbed me during my studies was first the technology. But one fascinating lecture was, for example, about Goethe and what he would make of the modern color theory.

**And today? What characterizes your day-to-day? What does Andreas Kraushaar's normal Monday look like?**

I have to backtrack a little – Fogra is an institute that was founded as a registered association 70 years ago by companies that were unable to conduct their own research. To this day, it is our mission to support our 900 member companies with scientific research and know how. That's what I'm trying to do. And not just on Mondays.

**Do you conduct research on behalf of companies?**

That's exactly the core idea of our institution. We work on relevant topics that promise concrete economic benefits. Fogra does not do theoretical research but application research.

**Similar to a service company?**

As an association, we are not-for-profit but most definitely market-oriented. We define our projects on the problems and challenges of our member companies in order to then develop tools, programs, standards, algorithms and methods that specifically benefit those companies. My job is to manage these projects. But first, it is a matter of identifying relevant problems.

**Problem-solving sounds better**

Yes, but because we want to solve problems that not only interest a particular company, but an entire industry, we first have to identify these issues. Fogra does research for companies, but unbiased – like a referee who is there for everyone.

**And who makes the rules?**

First of all, it is important that rules apply equally to everyone. Acceptance is key. As an active soccer referee, I know what I'm talking about. This works so well in the printing and media industry because we at Fogra design our rules together with the member companies.

**What is it like as a referee – in soccer?**

Well, if you like soccer as a sport but don't play that well yourself, then you become a referee. It's great. I move and stay fit. By the way, you learn to read people pretty quickly. Oh yes, as a referee – and there are 80,000 of us in Germany – I can attend every Bundesliga game free of charge.

**Champions league too?**

Indeed, this privilege was, of course, created to enhance the status and attraction of the job. To come back to the topic of color again – a fun fact comes to me spontaneously: referees apparently show more yellow cards to teams wearing red.

**Does that also apply to you?**

I don't actually know, but I will analyze that. All game data is saved after all. Let's see if my decisions are also influenced by color. I'm curious.



Test series: Fogra offers research results you can touch – printed on an in-house printing machine.



Fogra's release lists ensure that printers don't take any risks with important materials and chemicals. Here in the picture: The testing of dampening solutions.

**As an application researcher who works with incorruptible measured values on a daily basis, wouldn't you rather avoid the psychological effects and interpretations of color?**

It's important to remember that color is a human sensation. As such, the viewer always has the first and the last word, specifically the normally sighted 90% of the male and 99.7% of the female population. Firstly, we need to objectify this sensation. Then we consider which measures and methods are best suited to the specific task. In reality, there is a certain degree of discretion and personal opinion to this approach. We represent the interests of our members with the standards that we develop. If possible, a company like GMG would like the same rules to apply in Germany, Austria or the USA.

**One rule for all?**

Unfortunately, that's not realistic. The world is too complex and dynamic. Each standard has an application area that is as compact and precisely defined as possible. Nevertheless, tasks that require the use of several different standards are being brought to us. Some use a standard of some kind and ask us for a rating. That doesn't work. For Fogra, the task must be clearly defined. Fortunately, most situations can be objectified clearly. Nine out of ten of our expert reports occur where standards or procedures customary to the industry are simply not adhered to.

**But how can that be? Adhering to industry standards and issuing color-binding proofs before production should be of interest to all process partners. Can you explain that?**

Difficult. Some customers don't want a proof for cost reasons. I adopted my predecessor's position in these cases. It reads: "The absence of a color binding test print or

proof is a clear indicator that quality was not a priority for this project."

**Is that the inconvenient truth?**

Sure, and then unfortunately, you have to endure it. Arguments like "we don't have time for it" or "the customer doesn't pay for it" don't help afterward. Printers who do not vouch for standards and color accuracy should not be surprised if this comes back to haunt them in form of complaints.

**Costs are always relevant, but quality remains an essential criterion. There are definitely customers for whom every detail and absolute precision count. GMG is at home here. What do you think – is it the right approach to have such high standards?**

There is the 80/20 rule, which says that you can achieve a quality of 80% in 20% of the time. Conversely, you need 80% of the time to reach the last 20% in quality. There is no getting around agility – even software developers have to be pragmatic and accept some compromise.

**Efficient processes and solutions are required. What do you think of the statement: "For more efficiency in the pressroom, you have to take care of prepress"?**

That hits the nail on the head. Printing technology is becoming more and more industrial and, therefore more stable. I heard the following sentence from a well-known flexo printing machine manufacturer: "Our machines are best managed by an operator and a dog. The job is made ready by the operator, then the dog guards the machine to ensure no one gets near it to make any changes". A nice picture, in my opinion and that, of course, means that the data must be optimally prepared for these specific print conditions.



Color in 3D: Fogra is researching how to improve the accuracy of color and colorimetry – from 3D scan to 3D processing and finally graphic 3D printing.



Photos: Fogra

Research and application in conversation: Andreas Kraushaar, Fogra and Henning Kramer, GMG (from left).

**So, prepress can make a difference ...**

Yes, and GMG's experts are leading the way as color management pioneers. Also, as part of the Fogra Color Management Café. This is our format for innovative ideas, and it is of course great that GMG is actively participating with many great speakers.

**That sounds visionary, but how do printers apply these ideas?**

Prepress is the key, especially as we come to work media-neutral and process-independent. All developments in workflow optimization head in this direction.

**Do you think GMG is well positioned for these new challenges?**

GMG is undoubtedly very well positioned. I have been in close contact with numerous employees for years and therefore know that GMG certainly knows color. GMG is clearly playing in the proofing Champions League.

**Being in front is good.**

**But how does it look across the industry?**

There are, of course, different requirements across the industry. We also support printers in fulfilling less demanding jobs with reasonable economic outlay. Simply put: For less demanding customers, text must be legible, and green must not be red. The 80/20 rule applies again as soon as a customer has higher quality requirements. For the top 20 percent of clients, printers have to spend a correspondingly greater amount of time using norm lighting, measuring devices and solutions from GMG. We usually maintain in regular exchange with these companies.

**Does that mean that quality isn't that important for 80 percent of the print industry?**

On the contrary! The nice thing is that a printer who has built up 100 percent know-how can not only convince demanding customers. This printer will be successful across the board. The motto "Printing the expected!" is not only justified in the high-end segment.

**There are not only demanding customers but also demanding printing materials, especially in packaging. With Prototype Proofing, GMG brings together accurate colors and real haptics. An exciting field – also for research?**

Oh yes, I am very interested in the topography of a substrate. "Appearance" is one of my favorite topics – because it's about more than color. If a proof can accurately represent the appearance, that is unbeatable.

**Finally, a little bit of magic: you meet the color fairy and have been granted a wish.**

An appearance match solution would be great. With proofs that depict color, gloss, translucency, structures, etc. to be able to measure and evaluate all of this precisely would be a huge thing.

**Thank you for this challenge and thank you very much for the multifaceted discussion.**

My pleasure.