

“Unknown Symbols”: Online Legal Research in the Age of Emoji

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Abstract: Over the last decade, emoji and emoticons have made the leap from text messaging and social media to legal filings, court opinions, and law review articles. However, emoji and emoticons’ growth in popularity has tested the capability of online legal research systems to properly display and retrieve them in search results, posing challenges for future researchers of primary and secondary sources. This article examines current display practices on several of the most popular online legal research services (including Westlaw Edge, Lexis Advance, Bloomberg Law, Fastcase, HeinOnline, and Gale OneFile LegalTrac), and suggests effective workarounds for researchers.

Keywords: emoji; emoticons; kaomoji; online legal research; technology; Unicode

I. Introduction

In April 2018, an entry in the Kansas Bar Association journal’s regular “Substance and Style” legal writing column was entitled, simply, “🤔🤔🤔.”¹ Three “thinking face” emoji icons adorned the issue’s table of contents and the top of the article, whose author examined the proliferation of emoji in legal evidence and the associated problems with varying online displays and reader interpretations. The entirely-graphical article title included an explanatory footnote: “In text, this essay might be called ‘Thinking About Emojis.’”²

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¹ Joyce R. Rosenberg, 🤔🤔🤔 [*Thinking About Emojis*], J. KAN. B. ASS’N (Apr. 2018), at 37.

² *Id.* at 38 n.1. Both “emoji” and “emojis” are acceptable plural forms, according to the Unicode Consortium. See *Frequently Asked Questions: Emoji and Pictographs*, UNICODE CONSORTIUM, https://unicode.org/faq/emoji_dingbats.html [https://perma.cc/28L6-HUU6]. Unless quoting other authors, the remainder of this article uses the plural form “emoji,” in accordance with the preferences of *The Chicago Manual of Style* as well as Unicode. See UNIV. OF CHI. PRESS, CHI. MANUAL OF STYLE § 5.250 (17th ed. 2017).

But none of the online legal research services that carries the full text of the *Journal of the Kansas Bar Association* described it by that alternate title, nor did any database attempt to display the trio of titular emoji. Conducting a search for the author’s name reveals that the majority of legal research databases (Westlaw, HeinOnline, and Index to Legal Periodicals & Books) assigned the series name “Substance and Style” as this article’s title, even though other entries in the same series can be retrieved by a search for their individual article-level titles.³ Another database, Gale OneFile LegalTrac, provided only a parenthetical summary description in the title field for the article: “(Admissibility of emoji and emoticons as evidence).”⁴ (The other legal research services consulted, Lexis Advance, Bloomberg Law, and Fastcase, do not contain the full text of the *Journal of the Kansas Bar Association*.)

This state of affairs would likely come as no surprise to the article’s author, who noted that the major legal research databases commonly exclude emoji from their versions of primary and secondary legal content, and stated that “[a]s these issues begin to arise more frequently, it will be important for LexisNexis, Westlaw, and others to find a way to fix that omission.”⁵ With the number of recognized Unicode emoji now exceeding 3,000,⁶ and references to them in court filings and law review articles continuing their steady growth,⁷ a review of current research service practices seems particularly timely. This article compares display limitations for emoji and

³ See Rosenberg, *supra* note 1 (Westlaw version). Index to Legal Periodicals’ entry omits capital letters. See Index entry for ‘substance and style,’ *Journal of the Kansas Bar Association*, vol. 87, no. 4, pp. 37–38, viewed 27 June 2019, <https://search.ebscohost.com/login.aspx?direct=true&db=ift&AN=129089181&site=ehost-live&scope=site>.

⁴ See Rosenberg, *supra* note 1 (LegalTrac version); http://link.galegroup.com/apps/doc/A535326687/LT?u=duke_law&sid=LT&xid=0c88eef5.

⁵ Rosenberg, *supra* note 1, at 38.

⁶ *Emoji Counts*, v. 12.0, UNICODE CONSORTIUM, <https://www.unicode.org/emoji/charts/emoji-counts.html>.

⁷ See Eric Goldman, *Frequency of Courts’ References to Emojis and Emoticons over Time*, TECH. & MARKETING L. BLOG (Jun. 21, 2017), <https://blog.ericgoldman.org/archives/2017/06/frequency-of-courts-references-to-emojis-and-emoticons-over-time.htm>; see also *infra* notes 26–32 and accompanying text.

emoticons on several of the most popular online legal research services, and identifies several potential workarounds for users.

II. A Brief History of Emoji

Emoji are small pictographs commonly found in electronic communications, such as in text messages and on social media platforms.⁸ The Unicode Consortium, a non-profit organization that maintains standards for interoperability of software and data, began issuing approved emoji its hexadecimal codes in 2010.⁹ While operating systems can and do vary in their presentation of the same emoji icon, Unicode's oversight ensures at least some standardization.¹⁰ Emojipedia, an emoji search engine and directory, highlights the available categories as well as the most commonly-used emoji.¹¹ One of the most popular emoji, 😄 (“Face with Tears of Joy”), was crowned Oxford Dictionaries’ 2015 “Word of the Year.”¹² The move was not without controversy (“not even a word”¹³ being the most common complaint from detractors), but was intended to reflect the explosion of emoji use in online communication between 2014 and 2015.¹⁴

Most readers would likely consider emoji to be a 21st-century development, although their historical roots extend far deeper. In 1881, the American humor magazine *Puck* featured a short

⁸ *Emoji*, OED ONLINE, <https://www.oed.com/view/Entry/389343?redirectedFrom=emoji&> (accessed June 28, 2019). On mobile devices, available emoji are usually easily accessible via the on-screen keyboard. On Windows desktop computers, the keyboard shortcut *Windows logo key + period (.) or semicolon (;)* will retrieve the emoji panel. See Microsoft, *Keyboard Shortcuts in Windows*, WINDOWS SUPPORT, <https://support.microsoft.com/en-us/help/12445/windows-keyboard-shortcuts>. The equivalent shortcut in Mac operating systems is *Control–Command–Space bar*. See Apple Inc., *How to Use Emoji, Accents, and Symbols on Your Mac*, OFFICIAL APPLE SUPPORT, <https://support.apple.com/en-us/HT201586>.

⁹ See Laurence Bich-Carrière, *Say it with [A Smiling Face with Smiling Eyes]: Judicial Use and Legal Challenges with Emoji Interpretation in Canada*, 32 INT’L. J. SEMIOTICS L. 283, 286 (2019).

¹⁰ See *Full Emoji List – v 12.0*, UNICODE CONSORTIUM, <https://unicode.org/emoji/charts-12.0/full-emoji-list.html> (illustrating variations in emoji display across browsers, operating systems, and social media platforms).

¹¹ See EMOJIPEDIA, <https://emojipedia.org/> (last visited Aug. 19, 2019).

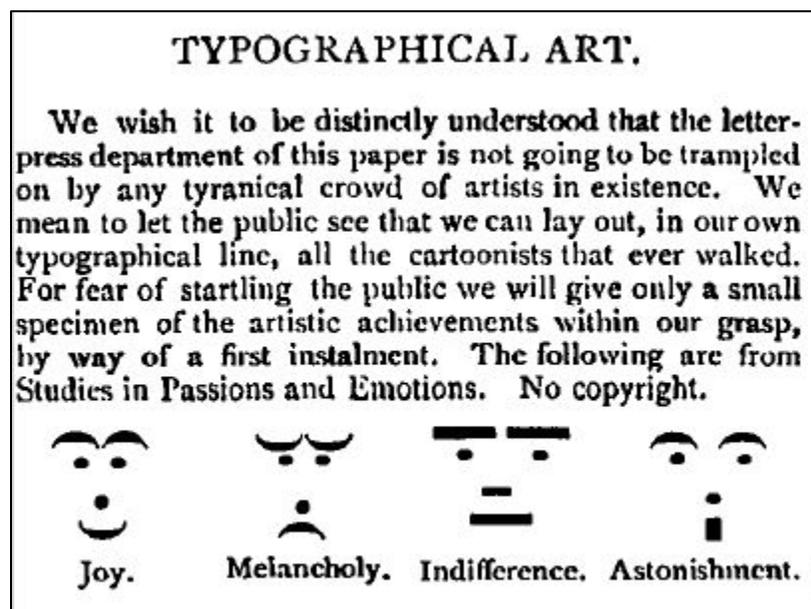
¹² Story Hinckley, *Why Oxford Dictionaries Named an Emoji as its ‘Word’ of the Year*, CHRISTIAN SCI. MONITOR (Nov. 17, 2015), <https://www.csmonitor.com/The-Culture/2015/1117/Why-Oxford-Dictionaries-named-an-emoji-as-its-word-of-the-year>.

¹³ Clarence Page, *Hot 2015 Words Reveal a Nation Obsessed with ‘-isms,’* BOSTON HERALD (Dec. 19, 2015), at 19.

¹⁴ Hinckley, *supra* note 12.

column of “Typographical Art” (figure 1) that is widely credited as the earliest ancestor of emoji.¹⁵ Above four faces created with letterpress parentheses, hyphens, and other punctuation marks, the editors noted, “We mean to let the public see that we can lay out, in our own typographical line, all the cartoonists that ever walked. For fear of startling the public we will give only a small specimen of the artistic achievements within our grasp [...]”

Figure 1. “Typographical art” from *Puck* magazine (Mar. 30, 1881), at 9. Public domain.



Over the ensuing century, such distinguished minds as Ambrose Bierce, Ludwig Wittgenstein, and Vladimir Nabokov all expressed their wishes to develop new written marks that would better convey a writer’s intended tone or emotion.¹⁶ These dreams would be somewhat realized with the advent of emoticons, the stylized typographical faces that began to dot online communication and early text messaging in an effort to better convey the sender’s tone behind the computer screen. Emoticons, also known as “smileys,” trace their origins to the computer science

¹⁵ *Typographical Art*, PUCK (Mar. 30, 1881), at 9.

¹⁶ See Sam Petulla, *OMG! Emoticons R Older Than U Think!!!* =-0, WIRED (Sep. 2010), at 36.

department of Carnegie Mellon University in September 1982, when graduate student Scott Fahlman proposed that colleagues identify their humorous intent on the university's bulletin board with a facial expression rendered in ASCII characters:

I propose the following character sequence for joke markers:

:~)

Read it sideways. Actually, it is probably more economical to mark the things that are NOT jokes, given current trends. For this, use

:-(¹⁷

Emoticons spread through the online communities of other campuses, their popularity only expanding as email and Internet access became more mainstream: "Wherever the Internet went, the smiley face was there within weeks," Fahlman later recalled to *The New York Times*.¹⁸ Fahlman's two original proposed emoticons have endured, and the lexicon of available sideways-expressions grew substantially enough over the years to require the occasional publication of glossaries for the layperson.¹⁹

Emoji as we know them today emerged from Japan in 1999, when 25-year-old Shigetaka Kurita designed the original set of 176 pictograms for the telecommunications company NTT DoCoMo.²⁰ The *kaomoji* form of emoticon, stylized faces created from typographic characters and

¹⁷ Rosalyn Lum, *Finding Smiley*, SOFTWARE DEV. (Jan. 2003), at 17.

¹⁸ Pagan Kennedy, *Who Made That? :-(Emoticon)*, N.Y. TIMES MAG. (Nov. 25, 2012), at 20.

¹⁹ See Alex Williams, *How to Say it with Emoticon*, N.Y. TIMES (July 29, 2007), at I9.

²⁰ See Jacopo Prisco, *Shigetaka Kurita: The Man who Invented Emoji*, CNN.COM (May 22, 2018), <https://www.cnn.com/style/article/emoji-shigetaka-kurita-standards-manual/index.html>.

read horizontally, was already popular in Japan.²¹ DoCoMo emoji were developed in order to help users communicate more clearly within the era’s 250-character limit on text messages. Kurita’s emoji icons were quickly replicated by other Japanese mobile phone companies, although the lack of standardization meant that the icons could not be shared across different networks.²² In 2010, the Unicode Consortium approved a standardized set of emoji images for international use.²³ The Unicode Emoji Subcommittee continues to review and approve new standardized emoji submissions, with a limit of around 70 new approved emoji per year.²⁴ While individual vendors may still vary in their presentation of, say, U+1F4A9 (🐞, or “pile of poo,” to use its official short name), Unicode standards ensure that the underlying subject of the emoji will remain the same across operating systems, browsers, and platforms.²⁵

As emoji use in online communication has grown, so too has their inclusion in legal disputes. In August 2018, the U.S. Court of Appeals for the Seventh Circuit made headlines by embedding the “poo” emoji in a published opinion, in what commentators noted was a first for a federal appellate court.²⁶ However, a significant number of trial and appellate court opinions before that point had already considered issues related to emoji and emoticon use in electronic

²¹ See Bich-Carrière, *supra* note 9, at 285. *Kaomoji* may be a simple 3-character face, such as ☹_☹ (conveying disapproval). Many *kaomoji* are far more elaborate ASCII character sequences, such as (°□°)∩_┌─┐ (depicting a person angrily flipping over a table).

²² *Id.*

²³ See Tanya Kiatkulpi Boone & Andrea W. S. Paris, *Emoji and Deciphering Intent in the Digital Age*, 35 COMPUT. & INTERNET LAW. 25, 25 (2018).

²⁴ See *Frequently Asked Questions – Emoji Submission*, UNICODE CONSORTIUM, http://www.unicode.org/faq/emoji_submission.html.

²⁵ See UNICODE CONSORTIUM, *supra* note 10, for a chart illustrating the main presentation differences across vendors. The main differences in display of the “poo” emoji include the presence or absence of eyes, a smile (with or without teeth), circling flies, and, of course, color.

²⁶ *Emerson v. Dart*, 900 F.3d 469, 472 (7th Cir. 2018). Legal blogger Howard Bashman noted the milestone as a “first(?)” Howard Bashman, *Seventh Circuit Becomes the First(?) Federal Appellate Court to Use the Poop Emoji in a Published Opinion*, HOW APPEALING (Aug. 15, 2018, 4:34 AM), <https://howappealing.abovethelaw.com/2018/08/15/#80940>. A 2017 unpublished opinion in the Sixth Circuit had included several smiley emoji and one winking emoji. See *Fry v. Robinson*, 678 F. App’x. 313 (6th Cir. 2017).

communications, and occasionally replicated the icons or character sequences – a trend that seems unlikely to abate any time soon.²⁷ Continuing legal education sessions now exist to teach attorneys the meanings of individual emoji, as well as how to handle emoji evidence in depositions and at trial.²⁸ Other authors have explored the evidentiary issues raised by emoji,²⁹ the potential for interpretive misunderstandings due to variation in display for the same emoji,³⁰ and the linguistic implications of their adoption.³¹

As emoji and emoticons continue to pepper court opinions and law review articles, though, a more fundamental question arises about their display in online research services, and their impact on future discoverability. As one commentator noted in 2018 about the Seventh Circuit’s use of emoji: “The words ‘poop’ and ‘emoji’ don’t appear anywhere in the opinion, raising the question whether Westlaw, Lexis, and similar legal search engines will implement some method of searching for emojis in a judicial opinion.”³² The search engines for legal research services do not currently support searching by image, emoji, or emoticon.³³ Complicating matters further, even the basic display for emoji, emoticons, and even other visual materials in online research services could be fairly described as fragmented at best.

²⁷ See Kiatkulpiboone & Paris, *supra* note 23.

²⁸ See Mike Cherney, *Lawyers Faced with Emojis and Emoticons are All 🐞*, WALL ST. J. (Jan. 30, 2018), at A1.

²⁹ See, e.g., John G. Browning & Gwendolyn Seale, *More than Words: The Evidentiary Value of Emoji*, COMP. & INTERNET LAW. (Jan. 2017), at 14; Diana C. Manning & Kathryn B. Rockwood, *Emoticons and Emojis: Hazards to be Aware of in Discovery*, N.J. LAW. (Apr. 2018), at 68; Brian Sullivan, *‘Just Kidding’ ;) What’s the Evidentiary Standard for Social Media Symbols?*, ABA J. (Feb. 2016), at 71.

³⁰ See Eric Goldman, *Emojis and the Law*, 93 WASH. L. REV. 1227 (2018).

³¹ See, e.g., MARCEL DANESI, *THE SEMIOTICS OF EMOJI: THE RISE OF VISUAL LANGUAGE IN THE AGE OF THE INTERNET* (2017); VYVYAN EVANS, *THE EMOJI CODE: THE LINGUISTICS BEHIND SMILEY FACES AND SCAREDY CATS* (2017); Elizabeth Kirley & Marilyn McMahon, *The Emoji Factor: Humanizing the Emerging Law of Digital Speech*, 85 TENN. L. REV. 517 (2018).

³² Bashman, *supra* note 26.

³³ Bich-Carrière, *supra* note 9, at 289.

III. The Legal Researcher's Dilemma

The following comparison of seven online research databases was conducted in August and September of 2019. Each database was searched for a test pool of seven law review and legal journal articles whose titles contain an emoji, emoticon, and/or *kaomoji* in the original source version.³⁴ In addition, the four research services³⁴ that contain current primary law as well as secondary legal materials (Bloomberg Law, Fastcase, Lexis Advance, and Westlaw Edge) were reviewed for their display of nineteen U.S. federal and state court opinions that displayed an emoji and/or emoticon in the full text of their version of record.³⁵ The test set documents include eight court opinions featuring emoji and twelve court opinions featuring emoticons (nineteen opinions total, with one opinion including both emoji and emoticons). All seven of the tested articles feature

³⁴ The seven tested articles are: Tiffany Li, *A ;-)* at the Past and Future of English, 21 GREEN BAG 2D 335 (2018); Lyrissa Bennett Lidsky & Linda Riedemann Norbut, #1👁️U: Considering the Context of Online Threats, 106 CAL. L. REV. 1885 (2018); Christina Sauerborn, Note, Making the FTC 📷: An Approach to Material Connections Disclosures in the Emoji Age, 28 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 571 (2018); Rachel Scall, Note, 📷📷📷: Emoji as Language and Their Place Outside American Copyright Law, 5 N.Y.U. J. INTELL. PROP. & ENT. L. 381 (2016); Scott Moïse, *Emoji and Emoticons in Legal Writing: 📷(👁️)📷*, S.C. LAW. (Mar. 2019), at 60; Rosenberg, *supra* note 1; Sullivan, *supra* note 29.

³⁵ See Eric Goldman, *Emoji and Emoticons in Court Opinions* (Nov. 29, 2018), <https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=2859&context=historical>. This dataset identifies court opinions from the state and federal courts that reference and/or display emoji and emoticons. The nineteen tested opinions from 2008-2018 that include emoji or emoticons are: *Emerson v. Dart*, 900 F.3d 469 (7th Cir. 2018); *Fry v. Robinson*, 678 F. App'x. 313 (6th Cir. 2017); *Koerner v. Vigilant Ins. Co.*, No. 16-13319, 2017 BL 373769, 2017 U.S. Dist. LEXIS 172283, 2017 WL 4682295 (E.D. La. Oct. 18, 2017); *Western Institutional Rev. Bd. v. Jenkins*, No. 17-05523, 2017 BL 340810, 2017 U.S. Dist. LEXIS 157891, 2017 WL 4265899 (W.D. Wash. Sept. 26, 2017); *Odermatt v. Way*, 188 F. Supp. 3d 198 (E.D.N.Y. 2016); *Enjalan v. Schlissel*, No. 14-13297, 2015 BL 167010, 2015 U.S. Dist. LEXIS 68511, 2015 WL 3408805 (E.D. Mich. May 27, 2015); *Parcel Mgmt. Auditing & Consulting, Inc. v. Dooney & Bourke, Inc.*, No. 13-00665, 2015 BL 48133, 2015 U.S. Dist. LEXIS 22247, 2015 WL 796851 (D. Conn. Feb. 25, 2015); *Apatoff v. Munich Re Am. Servs.*, 2014 BL 226742, No. 11-7570, 2014 U.S. Dist. LEXIS 106665, Pens. Plan Guide (CCH) P 284685 (D. N.J. Aug. 1, 2014); *Mobile Telecommunications Technologies, LLC v. Sprint Nextel Corp.*, No. 12-832, 2014 BL 315547, 2014 U.S. Dist. LEXIS 157905, 2014 WL 10726788 (E.D. Tex. May 2, 2014); *United States v. Christensen*, No. 06-085, 2013 BL 987732013, U.S. Dist. LEXIS 52464, 2013 WL 1498950 (D. Mont. Apr. 11, 2013); *Lenz v. Universal Music Corp.*, 94 U.S.P.Q.2d 1344 (N.D. Cal. Feb. 25, 2010); *SD Prot., Inc. v. Del Rio*, No. 06-5571, 2008 BL 382392, 2008 U.S. Dist. LEXIS 112043 (E.D.N.Y. Sept. 10, 2008); *United States v. Angle*, No. 98-37, 2008 BL 374731, 2008 U.S. Dist. LEXIS 34074, 2008 WL 1882860 (N.D. Ind. Apr. 24, 2008); *People v. Zamora*, No. G046664, 2013 BL 207779, 2013 Cal. App. Unpub. LEXIS 5537, 2013 WL 4007360 (Cal. Ct. App. Aug. 5, 2013); *State v. Harper*, 254 So. 3d 479 (Fla. Dist. Ct. App. 2018); *In re Marriage of Jacobson*, 2018 Iowa App. 325, 918 N.W.2d 501 (Iowa Ct. App. 2018); *Ukwuachu v. State*, NO. PD-0366-17, 2018 BL 201032, 2018 Tex. Crim. App. Unpub. LEXIS 442, 2018 WL 2711167 (Tex. Ct. Crim. App. June 6, 2018); *State v. Shepherd*, 2017 Ohio 328, 81 N.E.3d 1011 (Ohio Ct. App. 2017); *Ghanam v. Does*, 303 Mich. App. 522 (Mich. Ct. App. 2014).

at least one emoji; five of the article set also contain emoticons, and two of the articles contained a *kaomoji* as well.

Results Summary

Despite their prevalence in popular culture, emoji are frequently omitted or garbled by legal research databases. Of the eight court opinions and seven articles that contained at least one emoji, each research platform failed to display at least one emoji result properly, as compared to the original source documents; one platform failed to successfully display *any* case law emoji. Emoticons fared better overall, perhaps unsurprisingly due to their composition from ASCII keyboards. Still, not even emoticons enjoyed perfect display rates in the services. In addition, not a single research platform successfully displayed the “shruggie” *kaomoji* within two articles.³⁶

Table 1 provides an overview of the display success rates for emoji, emoticons, and *kaomoji* in the test set court opinions and articles within the research databases. Scores were calculated based upon only the total number of test documents available within each individual database (*i.e.*, a research service was not penalized for not containing a particular court opinion or article in the test set). Each emoji, emoticon, and *kaomoji* available within the database was worth one point toward the total score.³⁷

“Successful” display is entirely based on visuals, meaning that a research service that included an emoji as a separate image attachment rather than reproduced from a keyboard is

³⁶ See Moïse, *supra* note 34, at 60; Sullivan, *supra* note 29, at 71.

³⁷ While this approach ultimately provides a greater scoring “weight” to documents that contain a higher total number of emoji or emoticons, the final scores were generally within a reasonable range of deviation from an alternative scoring method tested, in which each *document* was worth one point total. Under that method, partial credit was awarded in proportion to the number of individual emoji, emoticons, and *kaomoji* within that document (*i.e.*, a document with four emoticons total and one display error would receive 0.75 for that particular result, a document with two emoticons total and one error would receive 0.5, etc.). While final scores did vary between the two methods, the lack of a consistent scoring value per emoji/emoticon/*kaomoji* and the calculation of partial credits introduced unnecessary complexities to the alternative methodology.

considered to be a “success” (an admittedly low bar). Editorial summaries of emoji or emoticons, however, were considered to be a failure of visual display. A half-point deduction was given for any spacing errors that deviated from the original source document’s presentation.

Table 1. Success Rate for Legal Research Display (Visual Appearance Only)

	Emoji (Case Law)	Emoticon (Case Law)	Emoji (Articles)	Emoticon (Articles)	<i>Kaomoji</i> (Articles)
<i>Westlaw Edge</i>	85.7%	95.5%	0.0%	96.4%	0.0%
<i>Lexis Advance</i>	71.4%	95.7%	83.7%	91.7%	0.0%
<i>Bloomberg Law</i>	71.4%	71.7%	20.0%	N/A	N/A
<i>Fastcase</i>	0.0%	83.3%	0.0%	N/A	N/A
<i>Gale OneFile LegalTrac</i>	N/A	N/A	0.0%	50.0%	0.0%
<i>HeinOnline Law Journal Library</i>	N/A	N/A	0.0%	0.0%	0.0%
<i>Index to Legal Periodicals & Books</i>	N/A	N/A	20.0%	50.0%	0.0%

Westlaw Edge

Westlaw’s research platform contained eighteen of the nineteen test set opinions, and all seven of the test set articles.³⁸ Westlaw generally fared well in tests of case law, although it benefited from the consideration of image attachments as a “successful” display. Of the eight opinions containing emoji, Westlaw displayed most of the test set’s emoji as image attachments, for an 85.7% success rate. The winking face in *Fry v. Robinson* was dropped completely from the Westlaw display, resulting in a point deduction. Another deduction was recorded for rendering a frowning emoji as a Unicode sun (☀).³⁹ Westlaw’s two half-point deductions in the emoticon case

³⁸ The only opinion not included in Westlaw was *SD Prot., Inc. v. Del Rio*, No. 06-5571, 2008 BL 382392, 2008 U.S. Dist. LEXIS 112043 (E.D.N.Y. Sept. 10, 2008).

³⁹ *People v. Zamora*, 2013 WL 4007360, at *1 (Cal. Ct. App. Aug. 5, 2013). Although the court described the frowning character as an “emoticon,” it appears to be the “dingbat” version of a frowning emoticon (☹) that is commonly generated by the auto-correction feature in word processing programs, and is more accurately classified in the emoji family. The court in *Western Institutional Rev. Bd. v. Jenkins* similarly describes a smiley dingbat (☺)

law section came from improper spacing, either inserting⁴⁰ or deleting⁴¹ as compared to the original opinion text. Westlaw’s emoticon case law display remained a very respectable 95.5%.

While Westlaw also nearly aced the display of emoticons in articles (receiving only a modest half-credit deduction for omitting a space in the Sullivan article title, for an overall success rate of 96.4%), it failed to display a single emoji or *kaomoji* properly within the full text of articles. Each emoji and *kaomoji* in an article was replaced by the text “<<Unknown Symbol>>” or “<<Unknown Symbols>>.” However, this placeholder text at least alerts readers to the omission of special characters, unlike the more common practice in other research services to drop emoji, emoticons, or *kaomoji* without any indication to readers that a portion of the text is missing.

Lexis Advance

Lexis Advance contained all nineteen of the test set opinions, and six of the seven test set articles.⁴² Lexis received several point deductions for omitting or mis-rendering emoji, including the “pile of poo” in *Emerson v. Dart*, the winking emoji in *Fry v. Robinson* (rendered instead as a smiley, like the other three in the document), and the smiley in *Parcel Management* (appearing as a quotation mark). Its ultimate success rate for case law emoji was 71.4%. Of the twelve opinions containing emoticons, Lexis included only one odd stumble in display, to drop its success rate to a still-impressive 95.7%. *Enjaian v. Schlissel* depicted three rather unusual emoticons in the court’s

as an “emoticon;” it has been classified as an emoji for the purposes of this test. *Jenkins*, 2017 WL 4265899, at *2 (W.D. Wash. Sept. 26, 2017).

⁴⁰ *Ghanam v. Does*, 303 Mich. App. 522, 526 (2014). Westlaw inserted an extra space in the first of five “tongue” emoticons, although the remaining four preserved the court’s original spacing.

⁴¹ *U.S. v. Angle*, 2008 WL 1882860 (N.D. Ind. Apr. 24, 2008). Westlaw removed an extraneous space from the original opinion’s smiley emoticon. While the change reflects the more common spacing of a smiley emoticon, a half-credit was deducted from this result for not accurately displaying the spacing from the court’s original opinion.

⁴² Rosenberg’s *Journal of the Kansas Bar Association* article was the only omission from the test set in Lexis.

original opinion: P (for a tongue sticking out) and -D (for a grin). Lexis rendered the capital letter P emoticon as a paragraph symbol.⁴³

Lexis's practice of reproducing emoji as image attachments generally served it well in the six available article results containing emoji, with a success rate of 83.7%. Its only complete failure in this category was the Sullivan article, which omitted every emoji as well as the shrugging *kaomoji*. Lexis also omitted the three emoji in Scall's article title, although it properly displayed the emoji in the body text. Of the four available articles that contained emoticons, Lexis correctly displayed emoticons in three and a half of them, omitting the smiley in Sullivan's title but receiving credit for including the emoticon in its body text, for a 91.7% emoticon article success rate.

Bloomberg Law

Bloomberg Law likewise contained all nineteen of the test set opinions. Bloomberg fared well in case law emoji display, with its successes and failures virtually identical to those in Lexis for the same 71.4% success rate. (Both services failed to display the frowning dingbat in *People v. Zamora*, although Bloomberg displayed a blank space to Lexis's emoticon equivalent.) However, Bloomberg Law struggled a bit more with emoticon display in case law, receiving additional deductions for emoticon display in two opinions where Lexis had succeeded, for an emoticon case law success rate of 71.7%.⁴⁴

Law review coverage in Bloomberg Law is not as robust as that on Westlaw or Lexis. Bloomberg contained only three of the seven test articles, with the indexed search results linking out to PDF copies. Bloomberg successfully displayed the emoji in Sauerborn's title, and omitted

⁴³ *Enjaian*, 2015 U.S. Dist. LEXIS 68511, at *3 (E.D. Mich. May 27, 2015).

⁴⁴ *Ghanam*, *supra* note 40 (displaying 4 of 5 tongue emoticons as the letter P); *Lenz v. Universal Music Corp.*, 94 U.S.P.Q.2d 1344 (N.D. Cal. Feb. 25, 2010) (displaying the nose of a winking emoticon as an em dash rather than a hyphen, for a half-point deduction each).

Lidsky & Norbut's and Scall's title emoji for a success rate of 20%. Emoticon and *kaomoji* display in article titles could not be tested, as those sources were not included in Bloomberg Law.

Fastcase

Developed in 1999 by former Covington & Burling associates Ed Walters and Phil Rosenthal, the research service Fastcase has grown into a leading low-cost alternative to premium research databases.⁴⁵ Fastcase is now available as a benefit of bar association membership in more than 30 states.⁴⁶ The company has earned accolades for such technological initiatives as a timeline visualization for search results in 2008,⁴⁷ and the launch of an interactive “AI Sandbox” tool in 2017.⁴⁸

Upon the release of the *Emerson v. Dart* opinion, Fastcase CEO Ed Walters tweeted: “Robust discussion yesterday about how @Fastcase should deal with a 🙄 in an Aug. 16 opinion from the 7th Circuit. Not every legal research service nailed it, but we did. 👍👉🙄🙄🙄.”⁴⁹ A 2018 comparison of research service treatment for the emoji and emoticon in *Emerson* confirmed that Fastcase had displayed the emoji correctly, although it had inadvertently omitted the smiley-face emoticon that preceded it.⁵⁰ Fastcase quickly corrected the oversight.⁵¹

⁴⁵ *The 411 on Fastcase*, AALL SPECTRUM (July/Aug. 2017), at 58.

⁴⁶ See JENNIFER L. BEHRENS, LEGAL RESEARCH VIA STATE BAR ASSOCIATIONS, <https://law.duke.edu/lib/statebarassociations/> (last visited Aug. 19, 2019).

⁴⁷ See Robert J. Ambrogi, *Vision Quest: Visual Law Services Are Worth a Thousand Words – And Big Money*, ABA J. (May 2014), at 35, 37.

⁴⁸ See Rhys Dipshan, *Fastcase Looks to Expand Access to Analytics with AI Sandbox Platform*, LEGALTECH NEWS (May 4, 2018, 10:00 AM), <https://www.law.com/legaltechnews/2018/05/04/fastcase-looks-to-expand-access-to-analytics-with-ai-sandbox-platform/>.

⁴⁹ Ed Walters (@EJWalters), TWITTER (Aug. 17, 2018, 2:25 PM), <https://twitter.com/EJWalters/status/1030566224583909376>.

⁵⁰ See Jennifer L. Behrens, *YMMV: Emoji in Online Legal Research*, GOODSON BLOGSON (Aug. 21, 2018, 6:44 PM), <https://dukelawref.blogspot.com/2018/08/yymm-emoji-in-legal-research.html>.

⁵¹ See Ed Walters (@EJWalters), TWITTER (Aug. 22, 2018, 10:10 AM), <https://twitter.com/EJWalters/status/1032314178168651776>.

Unfortunately, Fastcase (which includes fourteen of the nineteen tested opinions) fared poorly in tests just one year later, displaying none of the case law emoji properly and struggling with emoticons as well. The emoji in *Emerson v. Dart* currently display as question marks in both Fastcase and the Fastcase 7 interface. Emoji in other opinions appear as either a question mark or a blank space. Emoticons, for the most part, displayed correctly in the seven opinions included in Fastcase, with one instance of an extra space inserted between a “:P” emoticon, for an ultimate success rate of 83.3%.⁵² More troubling in the case law is the omission of two concurring opinions that included emoticons; although the majority opinion appears in Fastcase, the concurrences are not included.⁵³

As with Bloomberg Law, law review coverage in Fastcase links out to other sources, in this case through a partnership with HeinOnline. As a result, success rates were determined by the display of emoji or emoticons in title-level search results for available journals. Fastcase contained three of the seven test articles, and either omitted emoji (Lidsky & Norbut and Scall) or converted to emoticon equivalents (Sauerborn), for an emoji success rate of 0.0%. Emoticon and *kaomoji* article titles could not be tested in Fastcase due to unavailability.

Gale OneFile LegalTrac

The Gale OneFile LegalTrac database included index coverage for five of the seven tested articles, as well as full-text access to one of the articles. Emoji (featured in the titles of three LegalTrac articles and the full text of one) were generally summarized by editors in a parenthetical

⁵² *Ghanam v. Does*, 303 Mich. App. 522, 526 (2014). This extra space in one emoticon also appears in the Westlaw version. As in Westlaw, the other four emoticons display properly in Fastcase.

⁵³ *Ukwuachu v. State*, No. PD-0366-17 (Tex. Ct. Crim. App. June 6, 2018). The original files posted on the court’s own website similarly split the concurrences from the main opinion, although other research services compiled them into a single file.

description. In one example, Lidsky & Norbut’s article “#I🔫U” became “#I(shoot)U.” Emoji within the article full text were similarly summarized, or replaced with asterisks.

Emoticons (included in the titles of two test articles in LegalTrac) proved to be hit-or-miss. The winking “;-)” in Li’s *Green Bag* article title was indexed accurately, although it is missing a space between the initial article *A* and the emoticon, for a half-point deduction. The “;)” emoticon in Sullivan’s *ABA Journal* article title, however, was dropped altogether from the title text, making the emoticon article title success rate a modest 50%. The *kaomoji* at the end of Sullivan’s article text was similarly omitted.

HeinOnline

HeinOnline’s Law Journal Library included six of the seven tested articles. Full text articles in HeinOnline are page-image PDFs of the source material, so success rates were determined solely on Hein’s editorial indexing (such as what appears in a search result, or in the table of contents view when browsing a journal volume). HeinOnline indexing generally dropped emoji from titles (Lidsky & Norbut and Scall), or avoided them by using the series rather than article titles (Moïse and Rosenberg), for ultimate scores of 0.0% on article titles in each category.

Index to Legal Periodicals and Books (ILP)

Index to Legal Periodicals and Books by EBSCO included five of the seven articles in the test set; four were index-only and one included the full text in HTML. ILP demonstrated the greatest variety in treatment: Emoji were either dropped or parenthetically described, save for the smiley face in the title of Sauerborn’s *Fordham Intellectual Property, Media, and Entertainment*

Law Journal article.⁵⁴ When emoji (success rate 20%) or emoticons (success rate 50%) appeared in article titles, editors seemed to avoid the display problem by retitling the article, either by series name (as with Rosenberg) or with an entirely new title: Sullivan’s *ABA Journal* article “‘Just Kidding’ ;) What’s the Evidentiary Standard for Social Media Symbols?” was retitled “What’s the evidentiary standard for emojis?” (with an editorial note at the end of the article indicating its full original title). The *kaomoji* that closes Sullivan’s *ABA Journal* article, unfortunately, did not receive such editorial treatment, mangled nearly beyond recognition into this form: “-_(?)_/-.”

IV. Conclusion

Emoji and emoticons are not the only display and search limitations of online legal research systems, and are likely far from the most important ones they face. The tests above revealed several unrelated errors in document content and display. For example, Westlaw’s “<<Unknown Symbol>>” messages also appear in journal and law review results as a replacement for foreign-language diacritical marks⁵⁵ and mathematical symbols.⁵⁶ Lexis currently fails to retrieve Lidsky & Norbut’s article by a citation to its starting page, having erroneously indexed the article as beginning one page later.⁵⁷

On some level, though, the issues related to emoji display and search do seem potentially solvable. After all, the oversight and standardization that is provided by the Unicode Consortium points to the possibility of at least somewhat consistent display (excepting the usual display

⁵⁴ ILP’s success rate may be slightly inflated here, as the ☺ in Sauerborn’s article title indexing and original version may be the Microsoft Word AutoCorrect conversion of an emoticon to its dingbat equivalent, rather than a “true” smiley emoji.

⁵⁵ See Kathleen Gutman, *The Essence of the Fundamental Right to an Effective Remedy and to a Fair Trial in the Case-Law of the Court of Justice of the European Union: The Best is Yet to Come?*, 20 GERMAN L.J. 884, 890-91 ns. 46-47 (2019).

⁵⁶ See Mark A. Lemley & Bryan Casey, *Remedies for Robots*, 86 U. CHICAGO L. REV. 1311, 1323 (2019).

⁵⁷ Lidsky & Norbut, *supra* note 34. Lexis retrieves the preceding article in the volume with the citation “106 Calif. L. Rev. 1885,” having mid-coded the Lidsky & Norbut article as beginning on page 1886.

variations across browsers and operating systems). Major web search engines already allow users to enter an emoji character directly into the search box and retrieve relevant results, suggesting that emoji search capability is within these services' reach.⁵⁸

As the tests above demonstrate, however, some failures may be due to the original source material itself, rather than the research service. Courts and journal publishers may opt not (or be unable) to embed emoji via keyboard in word-processing documents, and may instead insert image files of individual emoji in order to reproduce the images exactly as they appear in the case record or article text.⁵⁹ As with the display of other graphical material within the legal research services, such as maps or charts, this approach is likewise hit-or-miss.⁶⁰

Emoticon and *kaomoji* searchability would present additional challenges, as many share their ASCII characters with common Boolean search query modifiers (particularly parentheses). Searches for emoticons, even if enclosed in quotation marks as a “phrase,” routinely fail in current legal research services, due to the inclusion of a mismatched parenthesis or other common search operators and modifiers.⁶¹

It seems unlikely that online legal research services will prioritize the proper display and searchability of emoji and emoticons within the near future. In the meantime, researchers and

⁵⁸ See Barry Schwartz, *Google Now Also Allows You to Search Using Emoji Characters*, SEARCH ENGINE LAND (May 18, 2016, 8:02 AM), <https://searchengineland.com/google-now-also-allows-search-using-emoji-characters-249802>. Bing, Yahoo, and DuckDuckGo have also included this feature since at least 2014. Barry Schwartz, *Bing Supports Emoji Search But So Does Yahoo & DuckDuckGo*, SEARCH ENGINE ROUNDTABLE (Oct. 29, 2014, 8:20 AM), <https://www.seroundtable.com/search-with-emoji-characters-19362.html>.

⁵⁹ Examples from the test set where emoji were reproduced as images by the court include *In re Jacobson*, No. 17-1040, at *9 (Iowa Ct. App. Apr. 4, 2018); *Shepherd*, 81 N.E.3d at 1020 n.2; *Ukwuachu v. State*, NO. PD-0366-17, at *4 (Tex. Ct. Crim. App. June 6, 2018) (Newell, J., concurring); *Ukwuachu* at *9 (Neary, J., concurring).

⁶⁰ See Behrens, *supra* note 50 (comparing research services' display of Appendix map images in a U.S. Supreme Court case).

⁶¹ Interestingly, a search in Westlaw for “;-)” will retrieve relevantly-titled auto-suggestions in the drop-down menu, but will fail as a completed search. Lexis Advance will return tens of thousands of results, although filtering with a search within for “emoticon” shows that the majority (although not all) do not contain the winking emoticon. Bloomberg Law finds no results, as does Fastcase.

authors alike should remain mindful that text-based online databases may omit these symbols from display, and that the omissions may not always be readily apparent. At the very least, database users should be aware of the limitations that emoji, emoticons, and *kaomoji* can place on future discoverability of publications, especially when the characters are a part of (or comprise) the article title.

What is an online legal researcher to do, considering the wide disparity in display and searchability of emoji and emoticons?

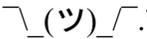
1. ***Leverage display limitations, where possible.*** Westlaw users can take advantage of the “<<Unknown Symbol>>” display message by using it as a search term to locate secondary sources containing emoji and *kaomoji*. Unfortunately, this is not an option in most other online services, which simply omit the text from display. Where it is not possible to take advantage of placeholder text as a search term, users should maintain an awareness that text-based displays may omit emoji, emoticons, or other special characters without any indication that something is missing from the display.
2. ***Attempt alternative search paths.*** For researchers, it may be necessary to devise alternative search methods (such as using author names, or full-text terms such as *emoji* or *emoticon*) in order to retrieve documents that contain emoji and emoticons, particularly within the titles of secondary sources.
3. ***Locate versions of record where necessary.*** Researchers may also prefer to locate PDF versions that preserve the original source’s formatting, such as scanned copies of articles in HeinOnline or court opinions downloaded directly from PACER or a court website. Article and opinion authors may wish to provide readers with an alert about potentially

missing content, such as author Eric Goldman’s introductory footnote to an article about emoji and the law:

If you are reading this Article in print, note that many images are in color.

If you are reading this Article in an electronic database, you probably cannot see most images, and the database may not have signaled the omissions.

Either way, you might consider reading an original PDF version of the Article.⁶²

When can researchers or authors expect to feel confident that online research systems will properly display emoji, emoticons, and *kaomoji* as an embedded part of the full text? To borrow phrasing from one early article, on the topic of evidentiary standards for such icons, “For now, the answer appears to be .⁶³

⁶² Goldman, *supra* note 30, at 1227 n.*.

⁶³ Sullivan, *supra* note 29, at 71. On the Westlaw display of this same article, of course, the shrugging *kaomoji* is replaced by “<<Unknown Symbol>>.”