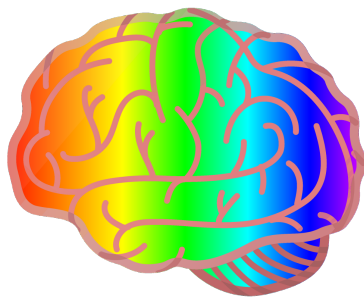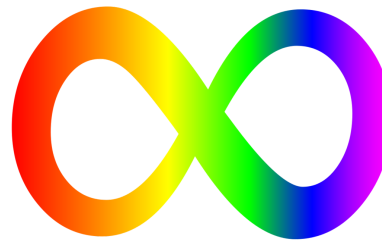# Proposal for NEURODIVERSITY Emoji

Alice Wonder

July 14, 2018

I am proposing an emoji sequence for **NEURODIVERSITY**

Figure 1: Neurodiversity Emoji Concept Art



(a) Option A: Rainbow Brain

(b) Option B: Rainbow Infinity Loop

This is a very rough draft and is subject to radical change.

Autism (often referred to as Autism Spectrum Disorder) refers to a spectrum of characteristics that are the result of a neurologically atypical brain. Typical characteristics include repetitive behaviors, differences in language processing, difficulty in social interactions, and differences in how emotions and empathy are expressed.

The center for disease control estimates that roughly 1 in 59 eight year olds is autistic[1]. Generally boys are more likely to be diagnosed as autistic than girls, though that may be due to differences in social constructs regarding the expected behavior of boys and girls resulting in a higher percentage of autistic girls going undiagnosed.

As online social networking makes it easier for autistic individuals to find each other, our positive identity as a demographic rather than a negative identity as a disorder is starting to grow.

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[1] https://www.autism-society.org/news/2018-cdc-autism-incidence-rate-statement-from-the-autism-society/

We believe an emoji to express our neurodiverse identity, an emoji chosen by our community, is both warranted and will help us continue to identify each other and grow as a community, enabling us to receive the important peer support we often lack from society at large.

The primary difference between those who are autistic and those who are not is in how our brain works. A rainbow repesents the full spectrum of visible light. We believe a rainbow brain is a logical representation of the neurodiverse spectrum that makes up our community.

Many members of the Neurodiverse community already identify with either the rainbow brain or the rainbow infinity loop shown in figure 1.

We respectfully request that one or both be added to the official Emoji list.

## Conventions

This proposal is attempting to follow the proposal guidelines specified at https://unicode.org/emoji/proposals.html using the same section numbering scheme used in the form specification there.

Section Six, *'Other Information'* in the proposal form template, has been renamed to *'Selection Factors — Special Consideration'*.

Sometimes I over-explain thing. It is an autism trait often known as 'data dumping' and is often frowned upon by those who are neurotypical. I have tried very hard not to do it here, but I ask for an ounce of grace if and when I over-explain something.

## Existing Emojis

Existing emojis will be referenced using upper case bold text for the CLDR short name followed by an image of the emoji.

Unfortunately TeXLive does not directly support color emoji fonts. I was forced to create the following hack:

```
\newcommand{\emojipedia}[1]{$\vcenter{\hbox{\includegraphics[height=\baselineskip]{emojipedia/#1}}}$}
```

It works visually but it means the emoji can not be copied into a clipboard as the Unicode codepoint or codepoint sequence. In other words, it is dirty. Hopefully a mechanism for using color emoji fonts with TeXLive and `pdflatex` that allows copying the emoji as text will be developed.

PNG images for the emojis were obtained from https://emojipedia.org/ and actually represent a variety of color emoji fonts, I picked what I liked.

## Hyperlinks

Hyperlinks where the text of the hyperlink is not the URL will have the URL specified in a footnote.

## Figures

With the exception of the concept are for the proposed emojis at the top of this document, all figures appear in Appendix A. This was done because some of the figures are referenced more than once, and to make it easier to note that the images in the figures are used under the Fair Use doctrine so that it is very clear the copyright to those images does not belong to me. I like to be very clear when it comes to intellectual property.

## Community Participation

I, Alice Wonder, am only a *member* of the Autistic / Neurodiverse community.

This document was created on a Public Github[2] where any member of the community is free to either create issues or submit pull requests.

Community participation has been sought at both Twitter and Facebook *er, will be...* before submission of this proposal to the Unicode Consortium to make sure this proposal is congruent with the those the emoji is intended to represent.

## Document Compile Instructions

This subsection to be removed before final submission.

For those familiar with LATEX who wish to submit a pull request, this PDF document should compile with any somewhat recent version of TEXLive[3] as long as you have the LuxiMono[4] font pack installed. I believe all the other needed LATEX packages are part of a standard TEXLive install.

The LATEX files in the github repository are intended to be compiled into a PDF document using the following method:

```
pdflatex proposal.tex && pdflatex proposal.tex && pdflatex proposal.tex
```

Do not include updated PDF if your pull request, but please do check that and TeX changes do not break compiling of the document.

For those not familiar with LATEX just open an issue with the github project with your suggested changes.

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[2]https://github.com/AliceWonderMiscreations/NeurodiversityEmoji
[3]https://tug.org/texlive/
[4]https://ctan.org/tex-archive/fonts/LuxiMono/

# Contents

# List of Figures

# 1. Identification

## 1.A. CLDR Short Name

The suggested CLDR short names: **Rainbow Brain**, **Rainbow Infinity Loop**

## 1.B. CLDR Keywords

The suggested CLDR keywords: **Neurodiversity, Neurodiverse, Neurodivergent, Rainbow Brain, Autism, Autistic, ASD, Asperger, Aspie, Asperger's, Asperger's Syndrom**

# 2. Images

The Rainbow Brain concept art in this proposal is based on the Google® Noto Color Emoji[5] font.

It is recommended that emoji fonts base their artwork on their existing glyph for **BRAIN** 🧠. Monochrome versions of the glyph should just use their monochrome variant of **BRAIN** 🧠 ignoring the rainbow modifier the same way many of them handle skin tone modifiers when in monochrome.

The Rainbow Infinity Loop concept in this proposal is directly taken from Wikimedia Commons[6] with only a canvas change to make the artwork square. Monochrome versions of the glyph should *probably* just use a monochrome infinity loop.

## 2.A. Zip File

A zip file containing the concept art can be downloaded from: NeurodiversityEmoji.zip[7].

The zip archive contains both opens in the following sizes:

- 1024x1024
- 256x256
- 128x128
- 72x72

The Apache 2.0 license text for the Rainbow Brain option is included in the zip file.

## 2.B. License

The Rainbow Brain concept artwork is a derivative of the Noto Emoji **BRAIN** 🧠 glyph which uses Apache License, version 2.0[8]. A copy of that license is included in the zip archive.

The Infinity Loop concept artwork is from https://commons.wikimedia.org/wiki/File:Autism_spectrum_infinity_awareness_symbol.svg where it is specified as belonging in the public domain.

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[5] https://www.google.com/get/noto/help/emoji/

[6] https://commons.wikimedia.org/wiki/File:Autism_spectrum_infinity_awareness_symbol.svg

[7] https://github.com/AliceWonderMiscreations/NeurodiversityEmoji/raw/master/NeurodiversityEmoji.zip

[8] https://github.com/googlei18n/noto-emoji/blob/master/LICENSE

## 2.C. Document

The form for Emoji Proposals specifies that images for the proposed emoji be included at the top of this document in both 18x18 and 72x72 pixels.

The zip archive contains the concept art in 1024x1024, 256x256, 128x128, and 72x72. An 18x18 sample is not included, that size does not make sense, especially when so many devices have a pixel density of 2:1 or greater.

With all due respect, that part of the 'Form for Emoji Proposals' needs to be modified. I do not even really understand what it is after, and several example proposals I looked at did not adhere to the text of that guideline. See the **PERSON MEDITATING**[9] sample proposal. The images there do not include 18x18 pixel images.

Is it possible that 18 point and 72 point is what was intended? Those are common font sizes. However many (most?) emojis are not even remotely recognizable at 18 pixels by 18 pixels.

# 3. Selection Factors — Inclusion

## 3.A. Compatibility

Not applicable.

## 3.B. Expected Usage Level

### 3.B.1. Frequency

A search on Twitter revealed several users using **BRAIN** 🧠 emoji or a brain in their avatar in the context of neurodiversity:

- Neurodivergent Rebel[10]
- Different Brains[11]

A search on Twitter for neurodivergent / autism related hashtags revealed several users with a rainbow infinity loop in their avatar:

- Autistic Priest[12]
- Chris Connor[13]
- Frances_Larina[14]
- Meow Carrie Meow[15]

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[9] http://www.unicode.org/L2/L2016/16279-person-meditating.pdf

[10] https://twitter.com/NeuroRebel

[11] https://twitter.com/diffbrains

[12] https://twitter.com/AutisticPriest

[13] https://twitter.com/ChiDeltaWithNOR

[14] https://twitter.com/Frances_Larina

[15] https://twitter.com/meowcarriemeow

A search on Twitter revealed several users using **JIGSAW** 🧩 in the context of autism.

- Adam Spong[16]
- News4JAX Tweet[17]
- Autistic Pride Day Tweet[18]

It is apparent that users of the Twitter platform do want iconography related to neurodiversity and autism.

### 3.B.2. Multiple Usages

There is at least one possible use for the color brain emoji beyond neurodiversity.

Brain scans and instructive artwork for brains often use colors to indicate different things, whether it is neurotypical or not, see figure 5. It would not be surprising if some people in the field of neuroscience used this emoji sequence outside of the context of neurodiversity.

### 3.B.3. Use in Sequences

I believe this is not applicable.

It may be able to add these emojis by using a sequence to describe them, such as how **RAINBOW** 🌈 is used to as a sequence modifier to create the **RAINBOW FLAG** 🏳️‍🌈 emoji.

The technical details of whether to use sequences to add support for these emojis or define codepoints is beyond the scope of this proposal, that is a Unicode Consortium decision.

### 3.B.4. Breaking New Ground

These emojis *may* break some new ground.

There currently are not any emojis that exist for the purpose of identifying diversity inside a person. There are emojis for ethnic differences, gender differences, career differences, even hair style differences.

Nothing seems to exist for differences in people that are fundamentally internal yet are a huge part of who they are.

An argument could be made for the **NERDFACE** 🤓 and the **RAINBOW FLAG** 🏳️‍🌈 having broken that ground already.

### 3.C. Image Distinctiveness

A rainbow is frequently used as a visual representation of a spectrum. A rainbow itself is created by diffraction of white light, allowing our eyes to interpret the individual wavelengths that make up

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[16] https://twitter.com/adspong2015lego

[17] https://twitter.com/wjxt4/status/1015279222657617922

[18] https://twitter.com/EmiForLove/status/1008835449798975490

the visible spectrum of light and see the beautiful diversity that actually exists within white light that we were unable to perceive without the diffraction of light.

With the proposed Rainbow Brain emoji, it should not be too difficult for people to figure out the rainbow is acting as a diversity adjective for the brain.

With the proposed Rainbow Infinity Loop emoji, it may require some context initially for people not already familiar with the Rainbow Infinity Loop to understand the meaning. The current use of that pictograph by many users already should allow many to know what it means right away.

A rainbow flag is often used as a symbol of pride by the LGBTQIA and sometimes rainbow colors and patterns are used outside of the context of a flag to indicate LGBTQIA pride. However the **RAINBOW FLAG** 🏳️‍🌈 is more frequently used for LGBTQIA pride. I do not believe there will be much confusion.

### 3.D. Completeness

In addition to the Rainbow Brain and the Rainbow Infinity Loop, I am aware of two other pictographs that are sometimes used to indicate neurodiversity in general and/or autism.

A gold heart is sometimes used to indicate Autistic Unity. I *believe* that falls under the categorization of furthering a cause, which is specified as an invalid reason to request an emoji.

Those who want to use a gold heart also can already do so using **YELLOW HEART** 💛.

Sometimes a puzzle piece is used to indicate autism specifically. The source of this as a pictograph for autism is due to the organization Autism Speaks using a puzzle piece is their logo, see figure 2.

Those who wish to use jigsaw puzzle piece to indicate autism can already do so using **JIGSAW** 🧩 though I would *personally* recommend against it, as it may result in trademark violation when the emoji font uses a blue puzzle piece for that codepoint.

### 3.E. Frequency Request

Not Applicable, I do not have any data on how often such an emoji is requested either of the Unicode Consortium or a Unicode member company.

## 4. Selection Factors — Exclusion

### 4.F. Overly Specific

This emoji sequence is suitable to indicate all forms of neurodiversity. It is not overly specific to any particular form of neurodiversity.

### 4.G. Open-ended

The two proposed emojis here are the most frequently used pictographs I have seen to indicate neurodiversity within the neurodiversity community.

Outside the neurodiversity community, and by some members of the autistic community, a jigsaw puzzle piece is sometimes used. However the puzzle piece is closely tied to a specific group and is in fact a trademark of that group, making it unsuitable for general use.

## 4.H. Already Representable

Some people are already using **BRAIN** 🧠 to represent neurodiversity. It works for the present but only indicates neurodiversity for those who already understand the context. For more often, that emoji is used to indicate intelligence or thinking.

Some people are already using **JIGSAW** 🧩 to represent autism. When used in the context of autism it has trademark issues, and it excludes neurodiversity that is not autistic.

## 4.I. Logos, Brands, UI Icons, Specific People, Deities

To the best of my knowledge, the Rainbow Brain and Rainbow Infinity Loop are not exclusive to any specific brand or person.

I did find the infinity loop in use with some Tarot card decks, but without a rainbow spectrum.

The blue puzzle piece that Twitter uses for **JIGSAW** 🧩 however is very similar to a trademark owned by Autism Speaks. See figure 2. Encouraging the use of a rainbow colored brain for neurodiversity would help avoid trademark issues.

## 4.J. Transient

As awareness of autism and other neurodivergent traits increase, the neurodiversity community will continue to grow, especially online where our social awkwardness is less of an issue. I expect use of these emojis to be of value for as long as people still populate the planet.

## 4.K. Faulty Comparison

I do not believe this is applicable.

## 4.L. Exact Images

An exact image is not needed for either of these proposed emojis. Emoji font creators have plenty of artistic license when creating the glyphs to represent them.

# 5. Sort Location

## 5.A. Category

### Rainbow Brain

Within the existing category list, the Rainbow Brain emoji would be a best fit within the 'Body' category.

### Rainbow Infinity Loop

Within the existing category list, the Rainbow Infinity Loop emoji would be a best fit within the 'Symbols::other-symbol' category.

## 5.B. Comes After

### Rainbow Brain

Within the 'Body' category, the Rainbow Brain emoji would be a best fit after the **BRAIN** 🧠 emoji.

### Rainbow Infinity Loop

Within the 'Symbols::other-symbol' category, the Rainbow Infinity Loop emoji would be a best fit after the ⊛ **INFINITY** ♾️ emoji.

# 6. Selection Factors — Special Consideration

The emoji **JIGSAW** 🧩 was recently added to the Unicode Emoji list.

The organization Autism Speaks[19] uses a blue puzzle piece for their logo, see figure 2. Twitter uses a very similar blue puzzle piece for the **JIGSAW** 🧩 emoji, see figure 3

The two are very similar and there is some considerable fear that people outside of the autism community will start to use that emoji when referencing autism.

Within the autism community (people who are actually autistic themselves) there is a lot of resentment towards that particular group as well as resentment towards using a puzzle piece to represent us.

For information on why many (though admittedly not all) within the autistic community dislike the Autism Speaks organization, see Why Autistic People Generally Dislike Autism Speaks[20].

For information on why many within the autistic community do not want to be represented by a puzzle piece, see The Problem with the Autism Puzzle Piece[21].

Whether or not that organization deserves that resentment from us though is not the issue. Regardless of those things, it is not a good idea for an emoji that is very close to the trademark of a specific autism related organization to be used for autism in the general sense.

The proposed neurodiversity emojis would give an alternative that will not be confused with the trademark of a specific autism related organization while at the same time giving our community an emoji to use that we specifically chose to identify with.

The proposed neurodiversity emojis avoids the potential misuse of the **JIGSAW** 🧩 emoji in the autism context it was not intended for.

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[19] https://www.autismspeaks.org/

[20] https://neurodivergentrebel.com/2018/03/14/why-autistic-people-generally-dislike-autism-speaks/

[21] https://learnfromautistics.com/the-problem-with-the-autism-puzzle-piece/

# A. Figures

Images used in these figures fall under the Fair Use doctrine of U.S. Copyright law.

Figure 2: Autism Speaks Logo



Figure 3: Twitter Jigsaw Emoji



Figure 4: Rainbow Infinity Loop

Figure 5: Instructive Drawing of Brain using Multiple Colors