

Are the languages of New Guinea unusually reticulate?

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The island of New Guinea has the world's highest biological, cultural and linguistic diversity. New Guinea has more than 900 languages – at least 12% of the world's *total* linguistic diversity – with one language approximately every 1000 km². The amount of linguistic diversity on this one island is approximately equivalent to that found in all of Eurasia. Why are there so many languages in New Guinea? Globally, the advent of agriculture is thought to have driven the spread of large-scale language families. However, it is not clear that this is the case in New Guinea.

The Trans-New Guinea language family is the world's third largest with ~470 languages, but is only circumstantially linked to the rise of agriculture in the highlands around 10,000 years ago. Instead it has been suggested that social factors have largely shaped New Guinea's linguistic diversity rather than agriculture. For example, societies in New Guinea have extremely high levels of multilingualism due to practices like reciprocal sister exchange across language boundaries. As a result, many societies in New Guinea have social networks that are defined by clan boundaries rather than language boundaries. If these large-scale processes of multilingualism and exchange are driving the high diversity in New Guinea then we would expect to see much higher levels of horizontal transmission between different languages than in other parts of the globe.

To date these questions have not been able to be answered as there has been a major paucity of data. In this paper I will take advantage of a new database of New Guinea languages, and assess whether there are truly differences in the size of New Guinea languages, and quantify the levels of reticulation present. The combined use of new large-scale language databases and innovative quantitative methods can help shine a light into these questions.

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