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Historical Analysis of Population Reactions to Stimuli - Case Studies of Papua and Papua New Guinea

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ABSTRACT

This study provides a baseline investigation for determining population reactions to stimuli in a historical context. Historical data analysis and qualitative data analysis techniques are applied to the last 150 years of events in both Papua and Papua New Guinea. Links and trends between events and stimuli are produced giving a preliminary dataset for any future trends impact analysis. In addition some general population reactions for these two countries are established. A preliminary regional comparison is conducted between East Timor, Aceh, Papua and Papua New Guinea.

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Executive Summary

Non-combatant populations, particularly in urban environments, can impact on fighting or peacekeeping elements in military conflicts. As such, understanding the stimuli¹ which have in the past caused (and hence might cause) the population to act in a particular way, resulting in some event, can give insights into how they might react in the future provided there are sufficient historical trends. These events may range from insurgences² through assisting/supporting one side in a conflict to popular support of a group or ideal.

This report is the third in a series of historical analyses of stimuli and effects (as events) in regional populations. The first two studies focussed on East Timor and Aceh and helped to develop the methodology and basic framework for analysis. This report concentrates on both Papua and Papua New Guinea (PNG) and at the end provides a preliminary comparison between the four countries studied to date, in our region. The intent of these studies is to identify probable generic causes of the population reactions over a large time period and determine if there are trends or patterns of behaviour over that period.

In this work, key drivers, trends and stimuli have been identified for both PNG and Papua. Additionally lessons learned have also been discussed for each country and, interestingly, the societal memory driving many stimuli is not as strong as was found in Aceh and East Timor. However, there is some potential for it to develop further. From the regional analysis to date some simple conclusions are drawn and potential focus areas for testing new trends and hypotheses in population reactions/behaviours are discussed.

¹ Stimuli are represented as causes and triggers throughout the report.

² Insurgences are defined as riots, rebellions or revolts by the Macquarie Dictionary 3rd Edition.

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Glossary

BCL	Bougainville Copper Limited
BPG	Bougainville Provincial Government
BRA	Bougainville Revolutionary Army
CRA	Conzinc Riotinto Australia
K	Kina
NEI	Netherlands East Indies
OPM	Organisasi Papua Merdeka (Free West Papua Independence Movement)
PLA	Panguna Landowners Association
PNG	Papua New Guinea
UN	United Nations
UNTEA	United Nations Temporary Executive Authority
WI/IJ/WP	West Irian/Irian Jaya/West Papua
WWII	World War II

1. Introduction

As described in earlier reports [1, 2], non-combatant populations, particularly in urban environments, can impact on fighting or peacekeeping elements in military conflicts. As such, understanding the stimuli¹ which have in the past caused (and hence might cause) the population to act in a particular way, resulting in some event, can give insights into how they might react in the future, provided there are sufficient historical trends. These events may range from insurgences² through assisting/supporting one side in a conflict to popular support of a group or ideal.

This report is the third in a series of historical analyses of stimuli and effects (as events) in regional populations. The first two studies focussed on East Timor [1] and Aceh [2] and on developing the methodology and basic framework for analysis. This report concentrates on both Papua and Papua New Guinea (PNG) and, at the end, provides a preliminary comparison between the four countries completed to date in our region. The intent of these studies is to identify probable generic causes of the population reactions over a large time period and determine if there are trends or patterns of behaviour over that period.

Both Papua and PNG have been studied in order to collate and build data on the South East Asia/South West Pacific region as an area of interest identified by the government White Paper on Defence in 2000 and National Security Update in 2003 [3, 4]. Although geographically located on the same island/s, PNG and Papua have very different, relatively short histories of documented events when compared to each other and the countries already studied. A timeline of events for PNG is shown in Appendix A and one for Papua in Appendix B. This study provides valuable insights into the reactions to stimuli of these populations, and the resulting qualitative data could be used in wargames or training exercises where the input of the reaction of a population is from a real environment. Additionally, these studies provide baseline data for futures studies, regional assessments and comparisons.

2. Methodology

The previous reports on East Timor [1] and Aceh [2] describe the approach taken in detail and as this study uses the same methodology only a brief description is given here.

Historical events occur only once and hence the data do not support statistical analysis to identify an average result. To obtain an “expected” value in this type of analysis we can only compare similar events and note trends in the stimuli – specifically as causes and triggers for the events. However, the data are real and defensible, as the events have actually occurred in relation to the given stimuli. This study cannot validate anticipated reactions, but provides a solid foundation for the

¹ Stimuli are represented as causes and triggers throughout the report.

² Insurgences are defined as riots, rebellions or revolts by the Macquarie Dictionary 3rd Edition.

arguments presented and future analysis on the problem space as well as provision of real data points for wargaming, training or calibrating a simulation.

There are often questions raised as to the bias, which is inherent in any history (both written and verbal). All histories are taken from a perspective and that is a fact of histories – but that does not make them false from an historical point of view [5]. As long as there is an awareness of the perspectives of history, care can be taken to minimise the impact of bias when drawing data for analysis. In terms of this research, the events are themselves historical facts and the stimuli can be drawn with care as either direct records from the people involved or from others who have documented the events. In particular, correlating data sources on an event from multiple perspectives can significantly aid in the reduction of bias.

Data was obtained from a wide variety of sources including an extensive literature survey on Papua New Guinean, Papuan, Irian Jayan, West Papuan, West Irian, Dutch, Indonesian, German, Australian, British and French history. An attempt was made to include all sources, which detailed the environment of the population (politically, socially, culturally etc.) as well as the events themselves in detail and any other relevant material, which completed the picture.

An initial narrative of the data collected is generated but due to the detail and complexity of the information this is of little use for analysis and provides only a context. The historical events of interest are identified and the underlying stimuli elucidated from this narrative as causes and triggers. These stimuli and events are then linked together graphically using a modified influence diagram and the stimuli are linked together and analysed using a matrix. The diagrams of stimuli and events are at two levels, the “detailed” level and the “distilled” level. The detailed diagrams show a more detailed list of stimuli associated with events and the distilled diagrams group these stimuli into a more generic dataset. This process allows trends to be identified and investigated in further detail. This also permits low level quantification of stimuli and event frequencies as well as quantification and analysis of the contribution to events of generic categories of stimuli. This last item is an additional analysis undertaken for this study and extended to the previous studies [1, 2] to allow the comparison in Section 8.3. Other information investigated at a quantitative level included population statistics of religion and ethnicity, where it was available, and time delays between causes, triggers and events.

3. Papua New Guinea

This section covers the history, analysis and outcomes for the independent country of PNG directly to the north of mainland Australia as shown in Appendix C. PNG occupies the Eastern half of the island and incorporates the surrounding islands within this boundary including the North Solomon Islands encompassing Bougainville. It is important to note that the island of New Guinea (and surrounding islands) traditionally comprised thousands of tribes (each with its own culture, customs and beliefs) and there have been at least 800 different languages identified on the island. This is very different to the other regional countries studied to date.

3.1 Brief History of PNG

When compared with other Pacific islands, PNG has had a relatively short history including its period of European colonialism. The brief history given here covers historical themes related solely to the analysis, and should not be taken as a standalone account of New Guinean history (in particular this section focuses predominantly on PNG). The sources used [6-39], describe the history in greater detail.

Portuguese sailors first sighted the Island of New Guinea in 1511 and, in 1545, the island was formally proclaimed in the name of the Spanish Kingdom and called “Nueva Guinea”. However, no European colonies were established on the island and the activities involved charting the coastline, trade and early explorations [6, 16, 28, 34-37]. From the early 1600s to the mid 1800s there were many documented encounters between European explorers, charters and traders, and the native peoples of New Guinea [6, 34-37]. There appear to be an equal number of these contacts where the natives were hostile and where they were friendly. This appeared to depend on whether the tribe encountered was a friendly tribe or hostile tribe by nature (rather than directly on the behaviour of the explorers, though this could trigger a violent or aggressive response).

From 1660 until 1828 the western part of New Guinea was used extensively by the Dutch for merchant activities and in 1828 West New Guinea (WNG) was incorporated formally into the Netherlands East Indies (NEI), and the first Dutch Settlement was established [37, 40-42]. More detailed descriptions of WNG is given in Section 6.1 where the history of Papua is described.

From the early to mid 1800s missionaries of various denominations (and ethnicity) began arriving in small groups to educate (and presumably convert) the natives. From about 1860, native Papua New Guineans were adopting Christianity in addition to or in place of their traditional beliefs and were becoming educated to the wider world. During the late 1800s there were several incidents between Europeans and warring native tribes showing how an external influence can manipulate a population for their own gain or how a native tribe could use the Europeans against a rival tribe or clan as a form of payback [36, 37]. One example of this is the ongoing grievance between the Binandere and Pure Clans. The Colonial Administrator Sir William MacGregor and the gold prospector George Clark, through a combination of misunderstanding and manipulation on both sides (native and European), ended up becoming part of the paybacks between the two tribes [36].

With the Dutch incorporating the western half of the island into the NEI, early in 1884 north eastern New Guinea (and associated islands including the North Solomon islands) was formally claimed by Germany and three days later south eastern New Guinea (and associated islands) was declared a British protectorate. There was also a failed attempt by a French entrepreneur to set up a free colony called “Nouvelle France” at Port Breton (at the southern end of the island of New Ireland) in 1880, which was abandoned in 1882 due in part to the hostility of the native New Irelanders [24, 35, 36].

Between 1890 and 1893 there were several major confrontations and uprisings by the Tolai people on the Gazelle Peninsula [36]. The Tolai were proud warriors and

fought back if traditional customs were not met and they also fought hard against the colonial governments. In 1888, the British protectorate of New Guinea was formally made the British Colony of New Guinea. The existing administrative districts were left in place. The British authorities worked with the tribes but administered British law when issues were brought to the attention of the local authorities. Otherwise, issues were dealt with at the tribal level without intervention by the administration.

In 1895, the treaty of The Hague was signed in which the north/south shared boundary between the eastern half (shared between Britain and Germany) and the western half of Dutch West New Guinea was determined, which remains in place today. In 1906 Britain passed its colonial rights of British New Guinea to Australia, which renamed the colony Papua New Guinea. At the outbreak of World War I in 1914, Australia occupied German New Guinea and the colony called PNG was extended to include the occupied German New Guinea territories.

The New Guinea region has throughout its history with European contact had the formation of cargo cults³. The first of the major cargo cults on PNG was seen in 1919 and was called the "Vailala Madness". From 1946 to 1974 there were no fewer than six different major cults which appeared on the island [27, 36, 38].

Between 1920 and 1942 a League of Nations mandate allowed Australia to administer the entire region of PNG including the occupied German New Guinea territory. In 1929, the first economic based strike occurred in Rabaul on East New Britain. In this strike, seamen, police, labourers and domestic servants attempted to gain higher wages to compare with Europeans doing the same work [35].

During the World War II (WWII) Pacific phase from 1942 to 1945, the Japanese Imperial forces occupied all but South Eastern New Guinea. There was both support and opposition to the Japanese forces by the natives. However, in the PNG region, there was significant overt support by the native New Guineans to the allied forces and in particular the Australian forces [25, 34, 36]. At the end of the war, Australia abolished the indentured labour system in PNG, which had been in place since 1888 when it formally became a British colony [35, 36]. In 1947, the United Nations (UN) placed PNG as a trust territory in the care of Australia.

In the post WWII period there were several revolts and riots with an economic focus. The first political parties were being formed when Australia decided to grant PNG independence [25, 30, 31, 34, 36]. With the discovery of vast mineral deposits on the island of Bougainville in the 1960s, the Australian colonial government allowed a joint British and Australian mining company to investigate mining prospects on the island. With traditional land issues coming into conflict with mining plans, and many other issues simmering under the surface finding an outlet, the first of many

³ Cargo Cults (also called Millenarian Cults or Sects) are the manifestation where natives combine their traditional beliefs with Christian teachings (or on traditional beliefs alone) and attribute the gaining of western goods (or cargo) to some magical or other key, which they can purchase or attain. At the time of purchase or attainment of the key, they believe all cargo will come to them. This has largely been attributed to confusion and lack of understanding or teaching and the massive influx of western goods, particularly during WWII and in the colonial periods.

riots on Bougainville commenced in 1969. In 1972 the mining of copper commenced on the island [10, 11, 32, 35].

In 1973, self government for PNG was officially proclaimed, with all aspects except Defence, Foreign Affairs and the legal system handed over by Australia. Two years later in 1975, PNG achieved full independence from Australia. In the same year, with insurgences still continuing on Bougainville, the Bougainville Provincial Government (BPG) declared themselves a Republic separate from PNG. The issues surrounding Bougainville and PNG are discussed in more detail in section 5.1.

The Bougainville problems for PNG often overshadowed other events occurring during the same period. In 1985, there was a riot of West Irian (Papua) refugees located in one of many refugee camps on the border with West Irian and the associated tensions with Indonesia over the issue of refugees and border incursions. From 1990 to 1993 there was a breakdown in law and order throughout PNG and through to 2001 there were strikes, rallies and riots over a whole range of issues. In 1997 PNG entered a period of social and political crisis with economic overheating.

3.2 Historical Population Demographics in PNG

Since WWII, the population demographics for PNG have remained relatively stable (with some minor changes) in terms of ethnicity, though there has been some movement in terms of geographical location for tribes. In comparison with the other countries studied to date [1, 2], PNG has a very different population structure, which has carried over from pre-colonial times and is an integral part of Papua New Guinean society. This difference is seen in the societal structure and ethnic makeup of the country. Rather than a single or predominant race and language with regional dialects as seen in countries such as Aceh and East Timor, New Guinea is (and has always been) made up of over a thousand tribes each with its own beliefs, tribal or clan laws and, often, language. This can partly be attributed to the difficult nature of much of the terrain on the island. Presently on PNG there are 715 distinct languages spoken throughout the country and 5 dominant ethnic groups – Melanesian, Papuan, Negrito, Micronesian and Polynesian. Pidgin English is currently in widespread use and used as the “common” language across the region [7, 8, 12, 18, 19, 22, 27, 36].

There has traditionally been a history of warring tribes or clans, and tribes were traditionally either friendly or hostile (often acting as allies or enemies to other tribes or clans). Tribal law held power with reparation (or payback) required for offences to other tribes. This has been subsumed to some extent into the modern PNG legal system and in other areas reduced by the modernisation and urbanisation of some elements of the population. However, there are still very traditional tribal and “untouched” pockets of PNG communities in the remoter areas of the country. Additionally there has been some movement away from traditional tribal and village centres by younger community members moving to the larger towns for employment opportunities. In some cases they return and in others they do not, which has to some extent lessened the village centre focus of the PNG societies. This has assisted in providing a nationalisation focus for the people which is starting to move away from the village focus – particularly on the mainland [34, 36, 37]. Much of this movement commenced with the formal introduction of the indentured labour system in 1884 when SE New Guinea became a British Protectorate. Under this scheme, boys and men of certain ages were indentured to work for plantations

elsewhere on PNG or on the Australian mainland. They were paid a minimal wage and indentured to the scheme and/or plantation for a certain number of years. At the end of the indentured time the natives were released and allowed to travel to where they wished. Many travelled through cities and towns and saw ways of living that they had never thought possible. As a result, some never returned to their villages or if they did they brought stories and changes to the traditional way of life. The use of money (from employment or sales) for the purchase of goods became more widely known and used by natives rather than barter or trade [25, 29, 34, 36, 37].

There has been little or no religious violence relevant to this study, however it is interesting to note that current figures show: Christian religions/beliefs: ~62%; Indigenous beliefs: ~34%. The primary Christian beliefs are Roman Catholic and Lutheran (followed by several others) and these proportions can be linked to the Christian missionaries working on the island in the 1700 and 1800s, and the relative numbers of those denomination's missionaries present. It is also interesting to note that approximately one third of the population was not converted and still follow indigenous beliefs. Some of this may be attributed to the mountainous terrain of the country and the tribal and linguistic barriers faced throughout the region. This is an important aspect when dealing with those areas of the population as their beliefs are often closely linked to the tribal laws and traditional ways and if not understood can cause incidents or offence to occur.

There have been ethnic issues resulting in violence in PNG history. Some of the traditional tribal violence has been attributed to ethnic (and clan) differences, however the most significant and extreme effect of this was the events on the island of Bougainville. One of the many causes fuelling the insurgents on the island stems back to native Bougainvillians having closer ethnic ties with natives of the Solomon Islands than with the mainland Papua New Guineans whom they resented and were/are ethnically and racially different from [10, 11, 32]. On Bougainville there has been ethnic violence, which is at the extreme end of the effects when considered apart from the overall analysis for PNG. [10, 11, 32].

4. Trends Analysis for PNG

The trends analysis for this study was conducted using the methodology described in Section 2 and previous reports [1, 2]. The results and discussions are presented here.

The **causes** of the **events**, which are identified in this trends analysis, are discussed in the sections below and are marked in the diagrams in Appendix D. The appendix contains "detailed" **stimulus/event** diagrams and "distilled" **stimulus/event** diagrams. The "distilled" views of the diagrams have been used to minimise the numbers of links in the map and to allow **causes** of a generally similar nature or classification to be grouped together. There is also a very high interdependency between **cause** relationships, which is highlighted in Appendix D.3. The terms used for both distilled and detailed analyses are a "basis set" selected to cover the items of interest. Table 1 describes each of the general terms used to describe a **cause** in more

detail. What is identified during the analysis are relationships and the recurrence or patterns of relationships between **stimuli** and **events** as well as between **stimuli**.

It is interesting to note that the level of complexity seen in Aceh [2] is also seen in PNG. This is an item of note as the histories are very different as are the time frames for the study. This might be an indication of the level of social complexity within the population of these countries when compared with the populations in countries with relatively less complexity such as East Timor [1].

Interestingly, for PNG there were different manifestations of events when compared to other regional countries. Less violent events occurred towards stimuli (some of which were similar to those seen previously) and importantly, in some cases, cargo cults were established. This has been discussed in Sections 3.2 and 4.5.

*Table 1: Definitions of **stimulus** terms used (terms with similar definitions are grouped together).*

Term Used	Description
Confusion and Lack of understanding (both native and white)	This element covers the lack of understanding of issues from both a native and white/European perspective. This is often assumption and education related and elements are linked to each other where not allowing for different beliefs, culture and understanding on both sides.
Disappointment and Frustration	Covers the feelings of the population when expectations have not been met.
Land issues	This is linked to the financial term and also covers traditional ownership of land and traditional use of land for subsistence farming.
Financial (traditional versus western)	Western/modern monetary and financial systems as opposed to the tribal land value/resource value trade and barter system.
Tribal culture and Traditional ways/ beliefs incl. "sorcery"	The tribal and traditional culture and beliefs for each village. This includes the use of "sorcery" as a belief and way of achieving a goal or using as a threat.
Customary law	The law and tradition used by each tribe/village.
Cultural assimilation	The integration of various tribal ways with western and world view ideas and beliefs.
Independence	Move from a "colonial" administration to self government.
Environmental	This term covers the environmental issues of the island including the aspects of traditional subsistence farming which have caused environmental issues over thousands of years.
Exploitation (incl. Trader) & Treatment	This includes the treatment of natives by the early traders and merchants on the island. In later times this extended to the greater issue of exploitation of the native population such as in "slave" and menial work and the colonial indentured labour system. This is linked to the Equality term.
Desire for western goods (cargo)	This refers to the manifestation of cargo cults. It is the desire of the population to acquire western goods or cargo. Through a combination of traditional beliefs with Christian teachings they attribute the gaining of cargo to some magical or other key, which they can purchase. At the time of purchase or attainment of the key, they believe all cargo will come to them.
Anti white	This refers to the violent nature of certain tribes against early Europeans visiting the island.

Term Used	Description
Equality (employment, opportunities, pay, conditions of employment)	This refers to the whole host of issues with regards to employment, opportunities and pay levels and includes the colonial indentured labour system.
Christianity & allowance and recognition of tribal customs and beliefs	This refers to the introduction of Christianity to the native population by various Christian missionary groups. It also covers the different approach used in PNG by many missionaries of recognising and allowing a continuation of tribal customs and beliefs and the integration of these with the Christian ideals. This also covers the strong leadership of the Christian denominations in Bougainville .
Education	Education level of the population. Includes the replacement of traditional education by modern "international" education and loss of village centric worldview.
Economic & political decisions *(privatisation, employment etc.)	This covers the range of economic and political decisions made affecting the population by the incumbent government and other organisations such as the IMF ^a , UN and Australian Government as well as aid agencies. This includes issues such as unemployment and privatisation.
Ethnicity	Refers to the hundreds of different groups (mostly considered ethnic) in the country and its islands. This is closely tied to the highly tribal structure of the area with many different tribal groups of differing ethnicity and language and societal base. This ethnicity often contributes to traditional violence. In more recent times this ethnicity relates also to introduced ethnicities on the island.
Western involvement	Colonial government control, and input to PNG policies and decisions including financial support and resource provision. This also links to the location of allied forces on the island during WWII and incorporates the colonialisation and introduction of Europeans to the island.
Urbanisation (sense of nationalism)	The movement of people from traditional village locations and societal groups into larger cities for employment. This has also had the effect of building a sense of "nationalism" from the individual village groups into a larger identity.
Human rights	This refers to the "sub standard" treatment of the native PNG population by others on the island. This also includes the treatment of the Irian Jayan population by Indonesian forces.

^a IMF – International Monetary Fund

4.1 Frequency Analysis of Stimuli

From the diagrams showing the relationships between **events** and **causes** (Appendix D) it was possible to extract some limited (and subjective) quantitative data allowing a simple frequency analysis comparing numbers of **events** to **causes** and vice versa. Figure 1 shows the number of separate **causes** attributed to each **event** by total causes and gives an indication of the complexity of the relationships. Figure 2 shows the breakdown of causes to events by generic stimulus category. Finally, Figure 3 shows the number of separate **events** associated with each **cause** and includes a categorisation of the cause by generic stimulus category and further demonstrates the complexity in the relationships.

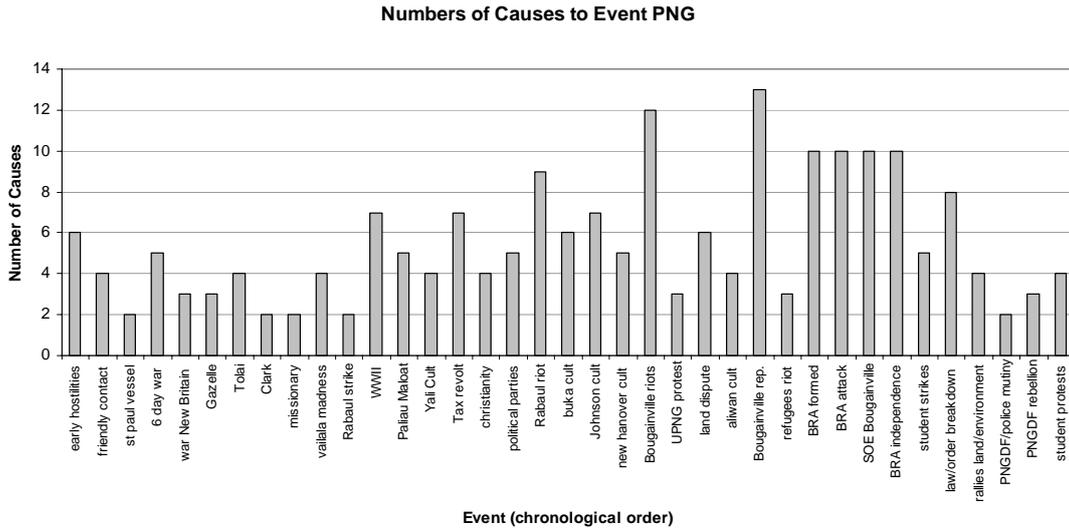


Figure 1: Total number of causes to each event for PNG

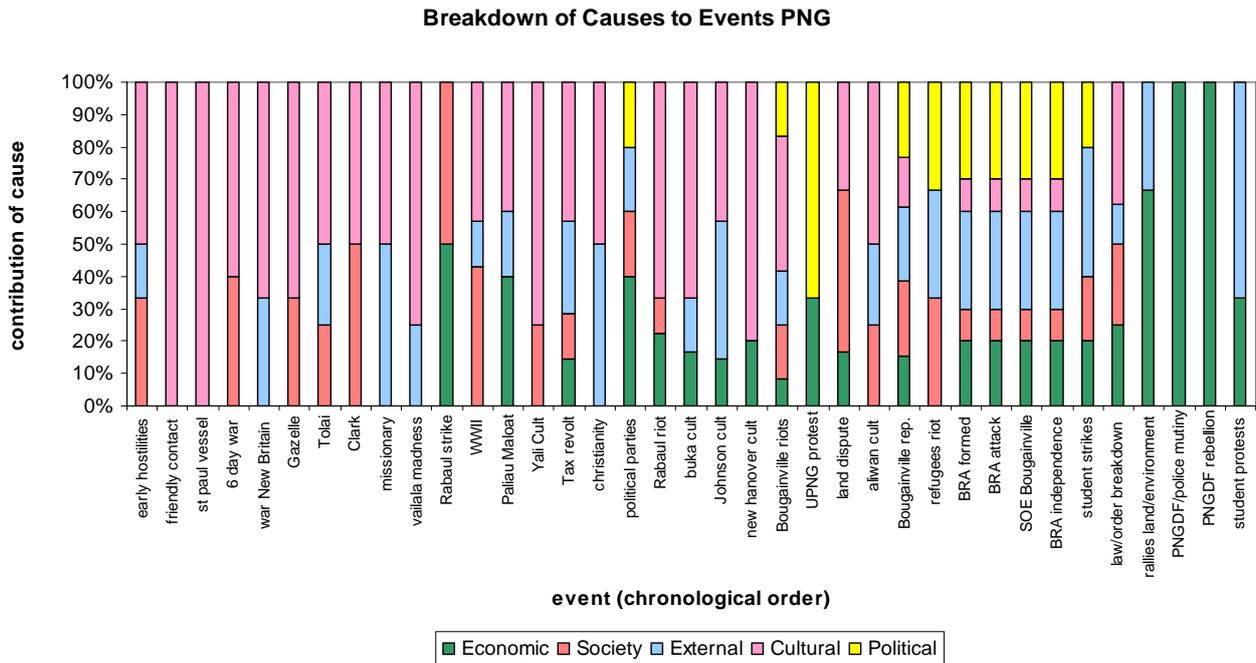


Figure 2: The contribution of each generic cause category to each event for PNG

Number of Events to Causes PNG

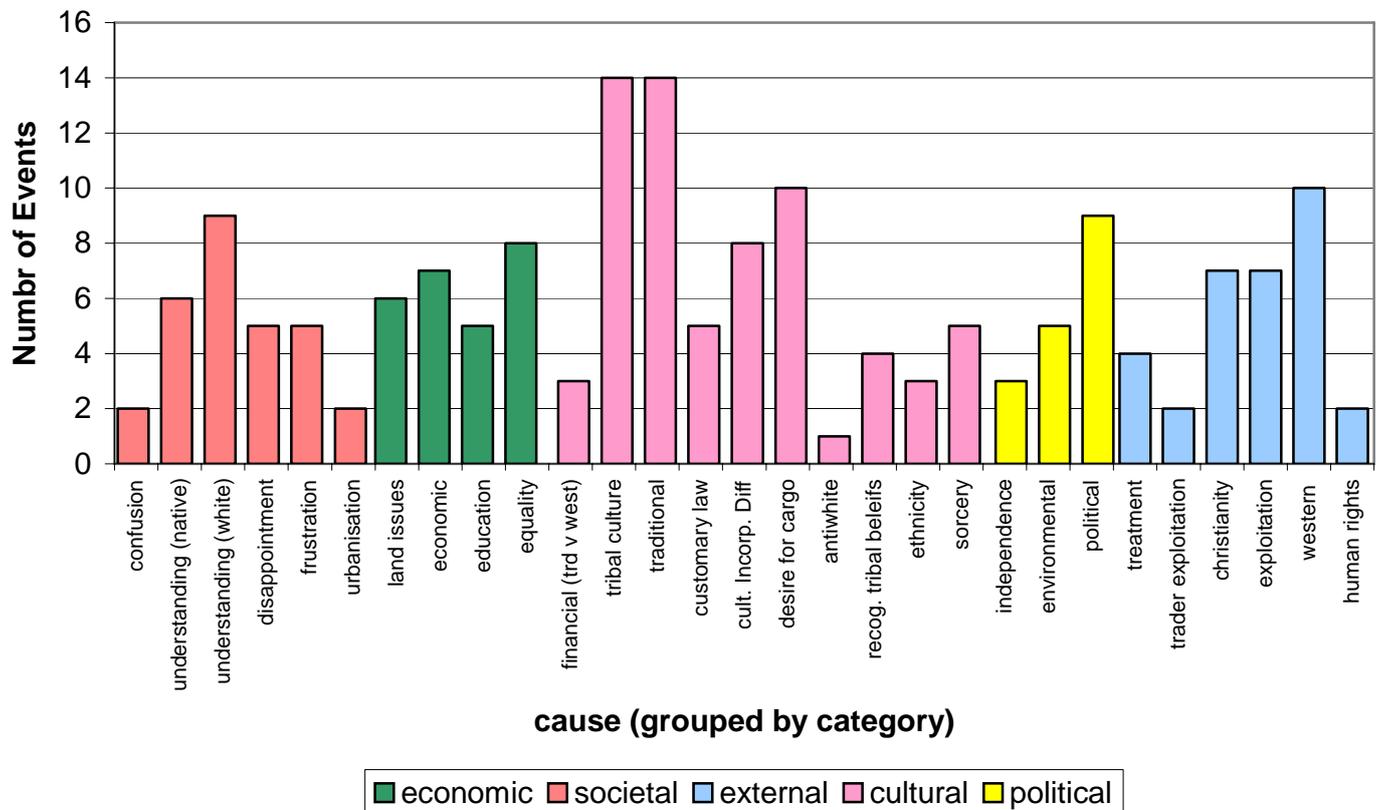


Figure 3: The number of events correlated with each cause and the attribution of each cause to a dominant generic cause category

Drawing on the results from Figure 1 to Figure 3, there are several key drivers and trends which can be identified. From Figure 1 we see some of the cyclical behaviour previously identified for the region [1, 2]. There are 'boil over' events, though the cyclical pattern and smoothness of this is not as clear as it has been in the past, or even there at all. From Figure 1 we see that over time there has been a slight overall increase in the apparent number of causes contributing to the events in PNG. However, if the Bougainville events are considered separately to the rest of the PNG events (as they are considerably more complex in stimuli contribution than all the other PNG events and appear to be at the extreme end of the reaction effects) then we see no increase over time in stimuli complexity and no clear indication of 'boil over' events. The increased complexity of the Bougainville events may be one reason for the level of violence seen during that period.

Figure 2 shows that the contribution of cultural stimuli to the events on PNG has tapered off over time and that the contribution of economic factors has increased. The external and societal stimuli factors have been consistently present throughout the time period investigated and political factors have been a recent occurrence since the formation of political parties prior to the transition to independence in 1960-1. During the Bougainville events, the external (western influence) drivers included the strong influence and leadership of the Christian churches.

Figure 3 shows there is no clear pattern or trend to the number of events associated with each cause. However, the cultural stimuli form the greatest number of event contributions, which is consistent with the results from Figure 2. Additionally, tribal culture and traditional ways, practices and beliefs are stimuli with the greatest number of events attributed to them. The individual stimuli which can be identified as key drivers for the events on PNG include: Tribal culture; Traditional ways; Western influence; Desire for cargo; Political and Lack of white understanding. A simple hierarchical ranking system was used to determine the key drivers from the generic stimuli categories from this data. This simple method attributed a high score to those which contributed greatly, a medium score to those which contributed partly, and a low score where there was minimal contribution. These were then summed together across the events and causes to determine the generic contribution hierarchy. The key drivers identified were the cultural generic category followed by the external and economic factors present throughout. Finally, the political and societal generic factors were present as drivers but at a much lower level.

4.2 Positive and Negative Influences

As a part of this analysis it was possible to undertake a very simplistic look at the apparent positive and negative influences on the population over the time period investigated. A list of these influences is given below and for simplicity they have been kept as generic as possible. Both long and short term influence considerations are incorporated into this analysis. They have been subsumed into this general table as part of the analysis and are not marked. However, this could be achieved in a more “detailed” analysis. The analysis of positive and negative influences is, of necessity, extremely subjective. The definitions used in this study are:

- Negative Influence: population reaction to **stimuli** where violence within the population or to others occurs (e.g. population attacks a part of a town).
- Positive Influence: population reaction to **stimuli** where no violence occurs or peaceful mass support or assimilation occurs (e.g. new religion is accepted and adopted by the population and there is no violent reaction or changes to everyday life); could be considered to be a non-negative influence.

The positive and negative influences are different from the **causes** as they are more specific influences on the society, which in some cases do correspond to **causes** and in some cases are **triggers**. The list below is merely a comparative list of items, which can be considered to have caused either positive or negative reactions from the population and can be correlated with the **stimuli** discussed elsewhere in the report. Interestingly, for PNG, there are few clear influences that can be attributed when compared to the other countries studied.

For PNG there are several influences that are difficult to attribute to either a positive or negative effect. This is the exposure of western goods to the tribal villagers. When combined with the Christian and traditional beliefs, and the natives’ ability to understand how they can acquire the western goods, two effects are seen. One is the formation of cargo cults, which in itself is not a negative influence on the population. In fact, it could be considered to be a positive influence as it allowed the natives to “understand” in their own way why they did not have these goods. On the other hand, several of these cargo cults had a more sinister side where the leader was

acquiring great wealth or where the cult itself became violent over issues such as the payment of taxes. This aspect would then be construed as a negative influence on the population. Therefore, in the following dot points these effects have been separated. A similar situation arises with the formation of the PNG national identity and a move away from the traditional village or tribal system.

Positive Influence

- Religious Missionaries recognising tribal beliefs
- Education of the population
- “Nationalising” of the tribal/village system into a national identity
- Exposure to western goods
- For Bougainville in particular, the leadership of the Christian Missionaries

Negative Influence

- Indentured labour system
- Slave trade
- Unequal treatment and remuneration
- “Nationalising” of the tribal/village system into a national identity
- Exposure to western goods
- Exploitation
- Perception of Ethnic changes
- For Bougainville in particular, forced ethnic mixing

4.3 Relationships between Causes

It is interesting to note from this analysis that some of the **stimuli** are similar throughout the period investigated and that it is simple to see some stimuli recurring. These stimuli are termed persistent causes and are listed in Table 2. When compared with the total list of stimuli however, this is only a small subset fuelling these predominantly violent reactions. This indicates that the type of stimulus for an event is likely to be quite broad for events on PNG. Additionally, these persistent stimuli do not show a high level of “societal memory” as seen in previous countries [1, 2]. However, the population does remember past events; this is just not as woven into the population reactions as in other countries studied.

Table 2: Persistent causes over time for PNG

Persistent Stimuli
Tribal culture
Traditional ways and beliefs
Cultural assimilation
Lack of white understanding
Western involvement
Exploitation
Equality
Traditional Land & financial
Confusion

When the relationships between the stimuli are investigated directly, as in Appendix D.3, we see that the relationships for PNG are complex. However, we also do not see the extent of causal stimulus evolution reported for Aceh and East Timor. It is suggested that this lower level of societal memory could be the result of the tribal nature of the population with its strict boundaries, laws, language, and allies or enemies. This tribal and clan nature could have resulted in not enough contact over a wide enough area to create the depth of societal memories over large portions of the population as seen previously. However, as stated earlier, there is a societal memory; it just doesn't appear to fuel events as significantly as in Aceh and East Timor.

4.4 Time Delays between Stimuli and Events

An investigation into time delays between the factors for **stimuli** and **events** showed no relevant correlations or trends.

An interesting item to note is that for this population the time delay between **trigger**, **stimulus** and **event** is relatively small (that is, usually within days or at most two weeks) on all occasions and always has been throughout the time period investigated. This could be linked to the lower level societal memory when compared with other countries [1, 2].

At the extreme end of the stimulus reaction space when compared to the overall PNG analysis, if the events on Bougainville are considered separately, there does appear to be a stronger societal memory. This could be attributed to the less independently "tribal" and more "ethnic" tribal nature of the islanders which is closer to those seen on the Solomon Islands than on PNG. It could also be attributed to the deep-seated feelings of the Bougainvillians with closer ties in ethnicity, geography, history and relationships with the Solomon Islanders than with the Papua New Guineans. There has been a long period of resentment over the island of Bougainville's governance by PNG and operation of the mining leases by Australian interests.

4.5 Cargo Cults

The definition of cargo cults used in this report is a generalisation intended to encompass and explain the relevant events assessed. There is a long history of cults of various types in the Melanesian islands and this analysis has incorporated a particular subset. There are many anthropological and sociological factors, which have been analysed and researched, describing all factors and types of Melanesian cults [27, 38]. That level of understanding does not add to the analysis conducted here. This research has focussed on the cargo cults as defined earlier and which is expressed by Todd [34]: "There are many different forms of cargo cult but they all share the one basic idea that all the wealth Europeans possess actually belongs to the native people. They claim Europeans have a key or a secret which enables them to receive the cargo being sent to the natives by their ancestors".

5. Events of Interest for PNG

There are two events which will be covered in greater detail here, as they highlight some of the complexity, tribal nature and different manifestations of reactions for the populations under investigation. In particular, the Bougainville crisis is an extreme reaction for the PNG study and could be investigated separately to those for the rest of PNG.

5.1 Crisis and Events on Bougainville

The events and subsequent crisis on the island of Bougainville has complex and deep-rooted causes which can be traced back to the 1880s in the colonial days when the group of islands was divided between the Germans and the British. Only a brief summary of the events and causes are given here as they are quite complex and the sources provide greater detail [6, 10-12, 14, 16, 25, 32, 34, 36]. Many causes have evolved as time has progressed (including a generational shift, education and political influences) adding to the complexity of the situation. In more recent times, political issues and territorial disputes over the North Solomons between the PNG administration and the Solomon Islands has further clouded some of the peace resolution issues. This report encompasses the violent actions on the island of Bougainville and the associated calls for independence.

The northern Solomon Islands were claimed by Germany in 1886 while the southern Solomon Islands became the British Solomons Protectorate in 1893. In 1899 there was a swap where all the northern islands except Bougainville and Buka were exchanged with Britain for Western Samoa. This divided the islands in two: North (Bougainville and Buka) (held by Germany) and South, which gained independence from Britain and became the Solomon Islands in 1978. With the Australian occupation of the German territories in World War I and then formal incorporation of these territories into Australian held PNG, Bougainville and Buka formally became a part of greater PNG.

As discussed earlier, the natives from Bougainville are ethnically more closely related to those of the Solomon Islands and their societal relationships are also very close. The differences between PNG and Bougainville have been large since the late 1800s when the missions established on the island came from (what are now called) the Solomon Islands and brought their personnel from there rather than the rest of greater PNG. Formal education was first introduced on the island in 1961 and this was established by the missionaries from the Solomon Islands. Bougainville was devastated during WWII, and in the post war era the Bougainville people's expectations of rebuilding were not met. Hence they refused to work, particularly for private plantations. As a result, the plantation owners recruited labour from the PNG mainland creating racial hostilities between the two groups.

In 1963 a mineral prospecting licence was granted to a joint British/Australian mining company - Conzinc Riotinto Australia (CRA) by the colonial administration on PNG. In 1965 additional prospecting licences were granted to CRA despite objections from the local villagers in the designated prospecting areas. This resulted in confrontations between these villagers and the prospecting geologists. In the next

year the Bougainvillians were told that any mine was not for “their benefit but for the nation as a whole ... and that they will receive compensation but no special benefits”[32]. This prompted further discontent amongst the population who felt exploited. In 1969 CRA was granted a Special Mining Lease for the Panguna area and the Bougainville Villagers had their case for objection to the lease heard in the Australian High Court without success [10, 32]. After several years of construction of the Panguna mine, commercial production began in 1972. In 1974, after lobbying the colonial and new PNG administration, the Bougainville Provincial Government (BPG) was established with the promise by the PNG administration that it would receive 95% of mine royalties. With PNG becoming independent in 1975, the BPG announced its decision to secede and declare independence from PNG as the Republic of the North Solomons. Shortly after the BPG was suspended and in the new year there were anti-national Government riots on Bougainville after which the BPG was re-established.

In 1978 the Panguna Landowners Association (PLA) was formed to push for an increase in compensation payments from Bougainville Copper Limited (BCL), the subsidiary of CRA running the Panguna Mine. In 1980, a new agreement was signed between BCL and the PLA. In 1981 tensions increased between the PLA and BCL as well as between the BPG and the PNG government. The former related to compensation and environmental issues while the latter related to revenue and royalties provided to the island from the PNG government [10, 32].

By 1988 tensions had escalated almost out of control with landowners demonstrating to demand that the PNG national government terminate the mining agreement with BCL. They also demanded K⁴10 billion compensation for damage to the land and environment, as well as a 50% transfer of BCL profits and National Government tax revenues from the mine to the BPG, and finally for ownership of BCL to transfer to the BPG within 5 years [10, 32]. In the same year, the Bougainville Revolutionary Army (BRA) was formed. With no resolution to the demands, over the next year, violence by the BRA and Bougainvillians escalated with many attacks on BCL assets and PNG Defence Force troops (who had been flown in), until the PNG Government declared a State of Emergency on Bougainville in 1989. The BRA continued their attack campaign from 1988 through to the final peace agreement in 1999 [10, 11, 32, 35, 36].

From 1990 the situation escalated even further out of control with PNG forces withdrawing from the island and the BRA taking control and declaring Bougainville independent from PNG [10, 32, 35, 36]. Between 1990 and 1996 there were numerous peace attempts and ceasefires attempted from both sides including regional and international support and intervention. In 1997 the Sandline Affair occurred where a private military consultancy firm, Sandline International, was contracted by the Executive of the PNG Government to use mercenaries and high tech equipment to equip, train and assist the PNG Defence Force to defeat the BRA and retake the mine. This contract, due to its sensitive nature, was never presented to the full PNG cabinet, and when mercenaries began arriving in Bougainville, there was a regional response with Australia refusing to support their use. At this point there was a major political effort to force PNG to terminate the contract. At the resolution of the

⁴ K is the symbol for the currency of Papua New Guinea, known as the Kina. In November 2004, 1 K = 0.31500 US Dollar (USD)

Sandline Affair, the contract was never fully implemented and several PNG Ministers were sacked [10, 11].

In the late 1990s, after many years of violence and counter attacks, a final peace deal was brokered between PNG and the BRA and international peacekeeping forces were deployed to Bougainville (under the auspices of the UN) to assist in settling the violence and to allow the final peace agreement to be implemented on the island.

Some of the primary causes of this crisis include:

- Ethnic and racial differences between the natives of Bougainville and PNG
- Split in the Solomon Island group
- Close relationships with the Solomon Islands
- Perceived economic and developmental exclusion by the administration for the island
- Exploitation of compensation for land and rights and ongoing royalties
- Loss of land used for traditional purposes and with traditional attachment
- Competing political endeavours
- Perception of external involvement
- Split and discontent with the PNG administration
- Exploitation/lack of consultation/ignoring of the native Bougainvillian issues
- Environmental and health issues resulting from mining interests
- Lack of consideration of the opponents' perspective on both sides of the conflict
- Non resolution of early issues/resentment leading to evolution of new and more complex stimuli
- Frustration
- External "interference"

5.2 New Hanover Cult, 1964

The manifestation of cargo cults in the South West Pacific islands has been discussed earlier, however, this example of the New Hanover cult is used to show the difference in population reactions for PNG. It shows that the formation of these cults is not always simply a case of waiting for the "cargo" to come and is often a complex blend of issues.

The New Hanover cult [27, 30, 31, 36] started amongst the Tungak people on the island of New Ireland. These people traditionally had a structure based on strong clan leadership upon which was superimposed an external administrative leadership model by the colonial governments. Then, in the 1960s this model was replaced with local government councils assuming leadership and displacing traditional, experienced and well respected leaders. Over time, these traditional leaders were considered to be less corrupt than the new councils and also had wielded greater authority. With the introduction of the councils, head taxes were introduced with a range of other "projects" which unfortunately were not used as they were intended. This sparked much of the belief among the people that the councils were corrupt [27, 36].

When the missionaries on New Ireland introduced Christianity, there was some misinterpretation on both sides as to the meaning of phrases such as "knock and the

door shall open” [36]. Additionally the native people blended elements of Christianity with their traditional beliefs. During WWII when American forces had air drops of food and equipment while on the island, many natives saw this and interpreted the “cargo” as God’s response to their prayers [27, 30, 36].

In the 1960s the United States (US) were invited by Australia back to New Ireland to conduct map survey work, where they again came into contact with the Tungak people. The Tungak people had seen the technological advancements of the US since WWII and, coupled with each of the previous factors blending with their beliefs and ideals, the movement on New Hanover gathered momentum [27]. In 1964, the members of the cult collected money to buy “President L Johnson” in order that they could have success like the US and receive their cargo. This purchase was misinterpreted by the media at the time, as a literal purchase, when in fact it was a metaphorical purchase and call for a President to become Head of State of PNG. They believed if this occurred, then PNG would become successful and have bounty like the US. Coupled with mounting council corruption and government neglect on the island, the movement spread with more and more people of New Ireland joining [27, 30, 36].

Many members were jailed for participation and used as labour for infrastructure development on the island in order to stop the spread of the movement. So although this movement did not become violent, it was considered sufficiently disruptive and against the norm that the authorities felt it might become violent and hence attempted to disband it.

6. Papua

This section covers the history, analysis and outcomes for the Indonesian province of Papua situated on the island of New Guinea, directly to the north of mainland Australia as shown in Appendix C. Papua occupies the western half of the island and also incorporates the surrounding islands within this boundary. It is important to remember from Section 3 that the island of New Guinea and all surrounding islands are made up of thousands of tribes (each with its own culture, customs and beliefs) and there have been at least 800 different languages identified on the island.

6.1 Brief History of Papua

When compared with other Pacific islands, Papua has had a relatively short history including its period of European colonialism. The brief history given here covers historical themes related solely to the analysis, and should not be taken as a standalone account of either Papuan or New Guinean history (this section focuses predominantly on Papua). The sources [27, 37, 38, 40-63] describe the history in greater detail. The history of Papua follows the description given in Section 3.1 until 1828 when West New Guinea (WNG) was incorporated formerly into the Netherlands East Indies (NEI) and the first Dutch Settlement was established [37, 40-42]. From 1860 till about 1890 the Mansren Myth cargo cult emerged in WNG. This was one of the earliest recorded instances of these cults on the island [38] and the main one to emerge in WNG. Interestingly, this cult again resurfaced between 1938

and 1943 becoming prominent during the Japanese occupation during WWII. The Japanese remained in WNG until 1945 at the end of WWII when the Dutch reoccupied their former colony [40-42].

Following WWII, with the establishment of an independent Indonesia, at the 1949 United Nations (UN) Round table agreements all NEI territory in the region except for WNG was handed to the new Indonesia. WNG was to remain a Dutch colony. In the same year the Constitution of the Government of Netherlands New Guinea was established. In the subsequent few years Indonesia requested through the UN that WNG should be part of Indonesia. In 1954, the UN formally rejected this claim. In the meantime, tensions escalated between the Netherlands and Indonesia over this territory as the Netherlands made provisions for WNG to proceed to self determination and independence. During 1961 inaugural elections were held for the WNG council and armed Indonesian infiltrators were rounded up by both natives and Dutch in the colony [40-42, 44, 49-51, 64].

However, later in 1961, the UN General Assembly rejected a formal Dutch resolution for WNG self determination in order to resolve the dispute with Indonesia. Shortly after, Indonesia declared its "Command for the Liberation of West Irian" and went to war with the Netherlands over the territory. Meanwhile the WNG council renamed the colony West Papua (WP) and openly supported the UN resolution proposed by the Netherlands. Early in 1962 there were various battles between the Dutch and Indonesia over the Dutch colony. During this period, the WNG council and Dutch government advised December 1, 1970 as the date for WP independence. With hostilities increasing, attempts were made to negotiate a peace deal, including several failed attempts to negotiate the "Bunker Agreement" [40-42, 44, 49-51, 64].

During August 1961, Indonesian paratroopers were dropped into WP and a few days later the first "peace" agreement (New York Agreement) was signed. A month later the WNG Council reluctantly accepted the New York agreement and a month later the formal Bunker agreement was signed where the Dutch agreed to hand the colony to Indonesia. In the following one to two years, the colony (under the UN Temporary Executive Authority (UNTEA)) was transitioned from Dutch to Indonesian control and in May 1963 Indonesia assumed full control of the now renamed West Irian (WI) from UNTEA. From here onwards, refugees began fleeing into PNG due to the violent nature of the Indonesian takeover and control of the province [40-42, 44, 49-51, 55, 60, 64]. Shortly after this transition the biggest resistance movement to Indonesian control was formed, namely the Free West Papua Independence Movement or Organisasi Papua Merdeka (OPM). This body has conducted countless actions against the Indonesian authorities and associated migrants since its inception in 1965. In 1967 there was an uprising of the Arfak people and in 1969 the Waghete people, and WI was formally integrated into Indonesia [44, 49-53, 58, 64]. This integration is still disputed today (though recognised by the UN) when the "Act of Free Choice" referendum was held to vote for integration with Indonesia. The dispute was over only 1026 Papuans, hand picked by the Indonesian administration, out of a total population of approximately 800,000 allowed to vote for the integration [55, 61]. Between 1965 and today there have been no less than 33 separate and documented formal OPM insurgences against the Indonesian authorities. This is in addition to the other events resulting from the population, totalling no less than 31 events since 1965. In 1973, WI was renamed Irian Jaya (IJ) the name by which it was known until 2000 when the President of Indonesia renamed the province Papua [65].

War has occurred in the Wamena district on three separate occasions, in 1977, 2000 and 2003, as the local people have gone to war with each other and the Indonesian authorities have intervened, escalating the hostilities. Throughout the period of Indonesian administration there have been numerous military attempts by the authorities to control both the population and OPM.

Today there is still no resolution to the hostilities on Papua with OPM continuing their campaign for independence.

6.2 Historical Population Demographics in Papua

It is extremely difficult to undertake a clear analysis of the population demographics in Papua over time due to the scarcity of relevant data [63, 65-68]. However, with the information available, a brief synopsis of the demographics is briefly presented here.

The people of Papua are related to those in PNG and their ethnicity is predominantly Melanesian. There are 253 distinct and different tribal groups (including languages) on Papua with an additional 200 dialects spoken throughout the province [63, 65-68].

Transmigration has been occurring on Papua from the overpopulated regions of Indonesia since 1966. However, there is limited data available for comparisons of demographics changes [55]. From this data we see that there have been approximately 140,000 transmigrants into Papua out of a total population of 1,174,000 by 1980. That is, approximately 12% of the total population was transmigrant in 1980. [55]. In terms of changes to population density per square kilometre (ρ/km^2), there has been an increase from 5 to 9 (ρ/km^2) in the Papua province between 1980 and 2001. However, it has been stable since 1998 [57, 65-68].

The population of Papua is predominantly Christian, with Protestantism dominating in the north and Catholicism in the south. On the Island of Maluku off the coast of Papua a similar situation exists. There are claims that with transmigration to the province, the religious balance is being altered with many Muslims arriving. However, no data is available to compare statistics [66].

7. Trends Analysis for Papua

The trends analysis for this study was conducted using the methodology described in Section 2 and previous reports [1, 2]. The results of this analysis and associated discussion is presented here.

The **causes** of the **events**, which are identified in this trends analysis, are discussed in the sections below and are marked in the diagrams in Appendix E. In the appendix are “detailed” **stimulus/event** diagrams and “distilled” **stimulus/event** diagrams. The “distilled” views of the diagrams have been used to minimise the numbers of links in the map and to allow **causes** of a generally similar nature or classification to be grouped together. There is also a very high dependency between **cause** relationships, which is highlighted in Appendix E.3. The terms used for both distilled and detailed analyses were a “basis set” selected to cover the items of interest. Table

3 describes each of the general terms used to describe a **cause** in more detail. This table is similar to Table 1 for PNG, however several terms are different between the two and these are highlighted. What is identified during the analysis are relationships and the recurrence or patterns of relationships, between **stimuli** and **events** as well as between **stimuli**.

It is interesting to note that the level of complexity seen in Aceh [2] and PNG was also seen in Papua. This is an item of note as the histories are very different, as are the time frames for the study. This might be an indication of the level of social complexity within the population of these countries when compared with the populations in countries with relatively less complexity such as East Timor [1].

*Table 3: Definitions of **stimulus** terms used (terms with similar definitions are grouped together). Those terms shaded are different to those for PNG.*

Term Used	Description
Confusion and Lack of understanding (native, white & Indonesian)	This element covers the lack of understanding of issues from a native, Indonesian and white/European perspective. These are often assumptions and education related, and are linked to each other where not allowing for different beliefs, culture and understanding occurs on all sides.
Disappointment and Frustration	This covers the feelings of the population when expectations have not been met.
Land issues	This is linked to the financial term and also covers traditional ownership of land and traditional use of land for subsistence farming.
Financial (traditional versus western)	Western/modern monetary and financial systems as opposed to the tribal land value/resource value trade and barter system.
Tribal culture and Traditional ways/beliefs incl. "sorcery"	The tribal and traditional culture and beliefs for each village. This includes the use of "sorcery" as a belief and way of achieving a goal or using as a threat.
Customary law	The law and tradition used by each tribe/village
Intervention in native issues	This relates to the intervention by governing authorities in native issues. An example is the intervention by Indonesian police and military in a traditional "war" between the Wamena tribes.
Independence	Move from a "colonial" administration to self government.
Environmental	This term covers the environmental issues of the island including the aspects of traditional subsistence farming which have caused environmental issues. It also covers mining and deforestation.
Exploitation (incl. Trader) & Treatment	This includes the treatment of natives by the early traders and merchants on the island. In later times this extended to the greater issue of exploitation of the native population such as in "slave" and menial work and the colonial indentured labour system. This is linked to the Equality term.
Desire for western goods (cargo)	This refers to the manifestation of cargo cults. It is the desire of the population to acquire western goods or cargo. Through a combination of traditional beliefs with Christian teachings they attribute the gaining of or cargo to some magical or other key, which they can purchase. At the time of purchase or attainment of the key, they believe all cargo will come to them.
Indonesian Authority (incl perceived corruption)	The resistance to Indonesian authority of the province since the Bunker and New York Agreements in the 1960s. In addition this refers to the perceived corruption and unequal treatment given to the native population by the authorities.

Term Used	Description
Equality (employment, opportunities, pay, conditions of employment)	This refers to the whole host of issues with regards to employment, opportunities and pay levels and includes the colonial indentured labour system.
Christianity & Allowance and recognition of tribal customs and beliefs	This refers to the introduction of Christianity to the native population by various Christian missionary groups. It also covers the different approach used by some missionaries of recognising and allowing a continuation of tribal customs and beliefs and the integration of these with the Christian ideals.
Education	Education level of the population. Includes the displacement of traditional education by modern "international" education and loss of a village centric worldview.
Economic & Political decisions	This covers the range of economic and political decisions made affecting the population by the incumbent government and other organisations.
Ethnicity	Refers to the hundreds of different groups (mostly considered ethnic) in the country and its islands. This is closely tied to the highly tribal structure of the area with many different tribal groups of differing ethnicity and language and societal base. This ethnicity often contributes to traditional violence. In more recent times this ethnicity relates also to introduced ethnicities on the island.
Western/External involvement	Colonial government control, and input to the future of the colony (eg UN decisions). This also links to the location of allied forces on the island during WWII and incorporates the colonisation and introduction of Europeans to the island.
Urbanisation (sense of nationalism)	The movement of people from traditional village locations and societal groups into larger cities for employment. This has also had the effect of building a sense of "nationalism" from the individual village groups into a larger identity.
Human rights & Violent Military Control	This refers to the treatment of the Irian Jayan population by Indonesian forces and documented Human Rights abuses.
Publicity	This refers to the exploitation of events through the international media in order to gain a political advantage (ie used as a tactic)

7.1 Frequency Analysis of Stimuli

From the diagrams showing the relationships between **events** and **causes** (Appendix E) it was possible to extract some limited (and subjective) quantitative data allowing a simple frequency analysis comparing numbers of **events** to **causes** and vice versa. Figure 4 shows the number of separate **causes** attributed to each **event** by both total causes and by generic stimulus category and also gives an indication of the complexity of the relationships. Figure 5 shows the breakdown of causes to events by generic stimulus category. Finally, Figure 6 shows the number of separate **events** associated with each **cause** and includes a categorisation of the cause by generic stimulus category and further demonstrates the complexity in the relationships.

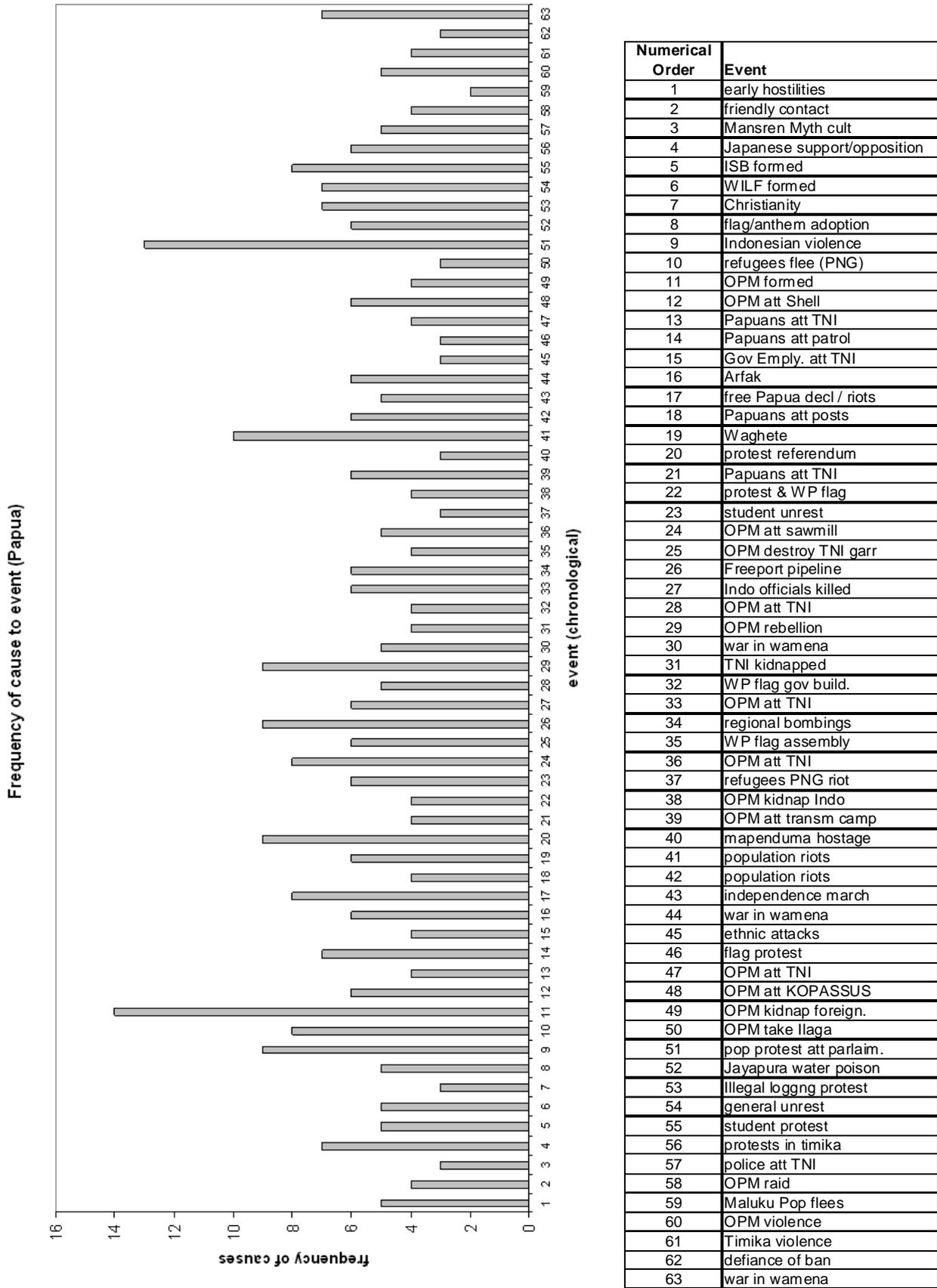


Figure 4: Figure showing total number of causes to each event for Papua. The events are listed in numerical chronological order corresponding to the list provided.

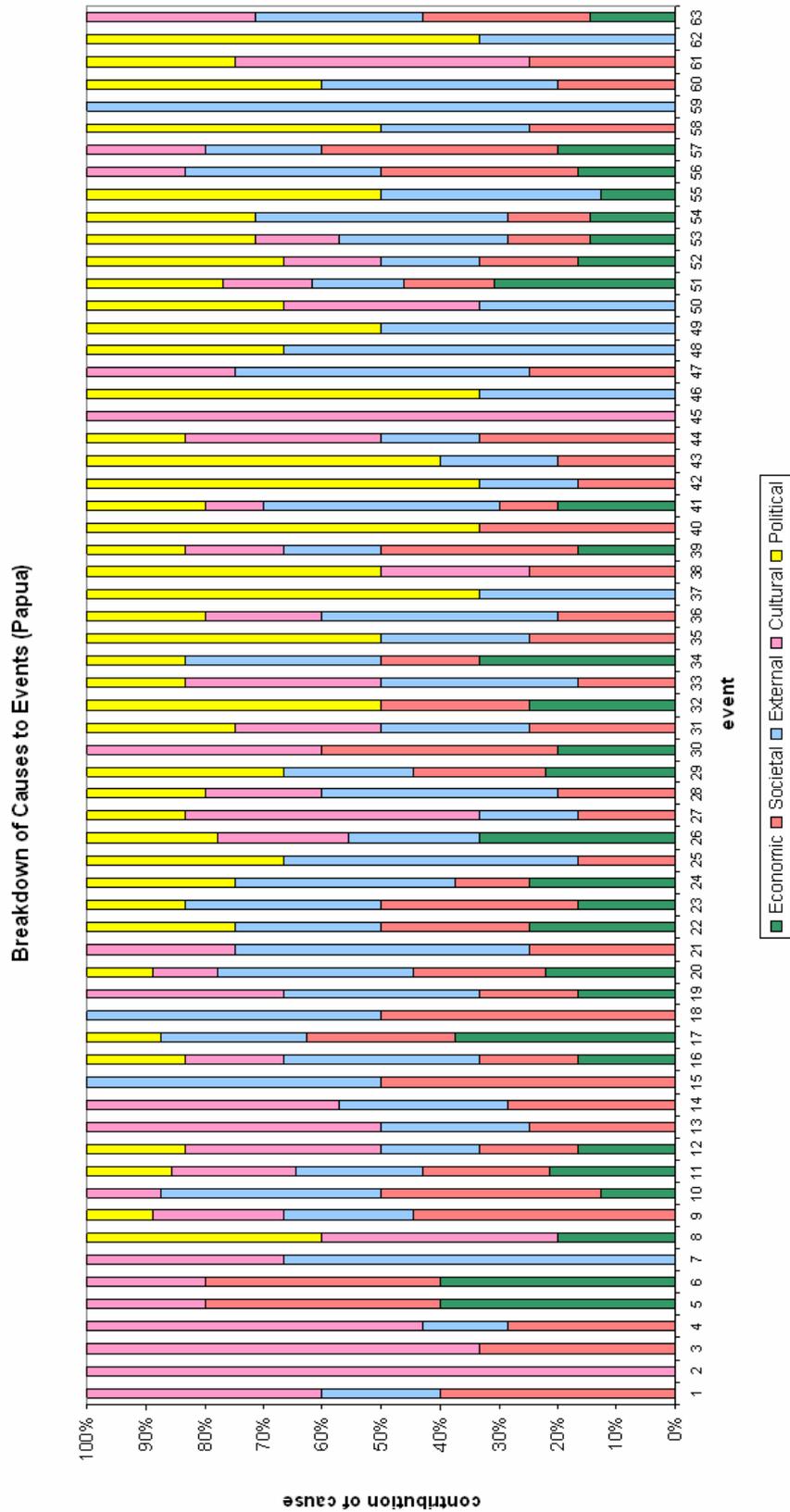


Figure 5: Figure showing the contribution of each generic cause category to each event for Papua. The events are listed in numerical chronological order corresponding to the list in Figure 4.

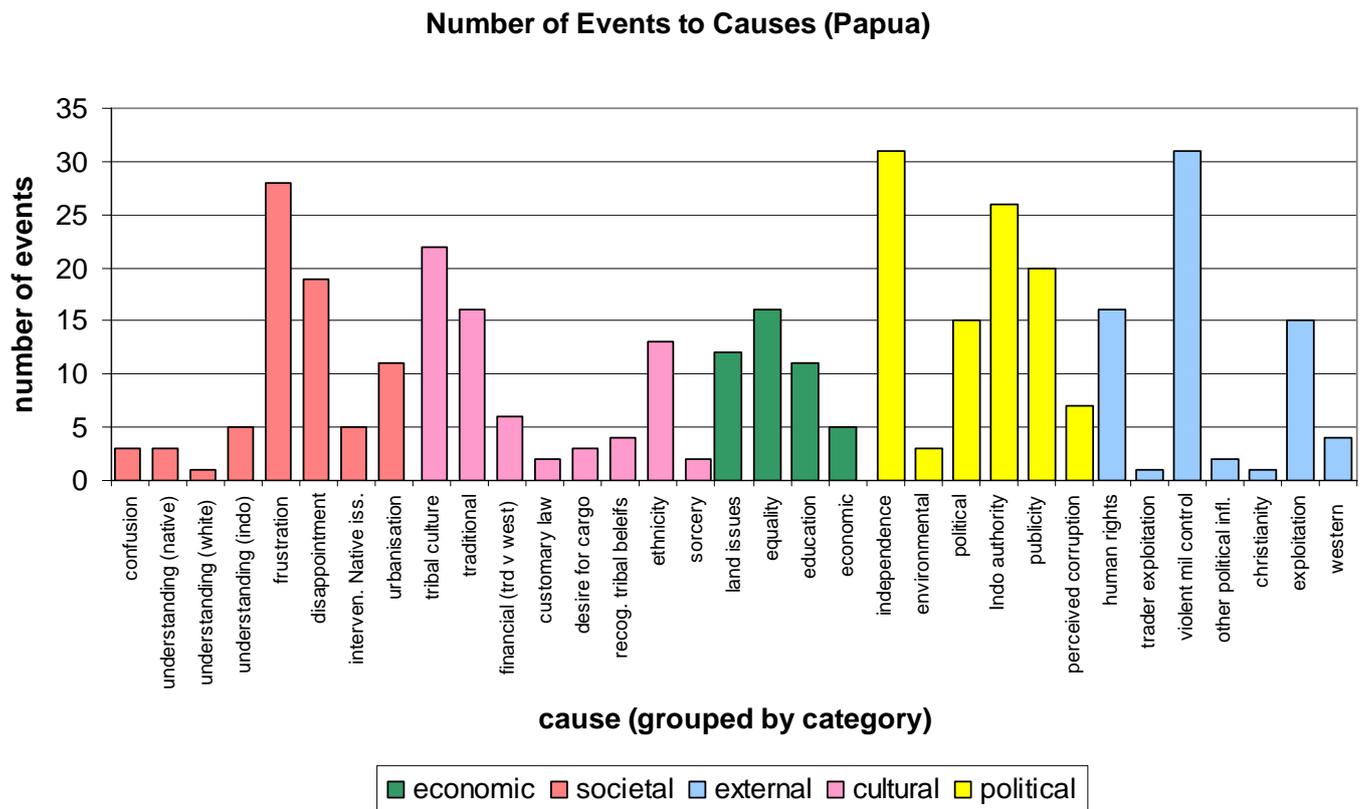


Figure 6: The number of events correlated with each cause and the attribution of each cause to a dominant generic cause category.

In Figure 4 we see the number of causes attributed to each event for both total causes and for each generic stimuli category. Some basic cyclical behaviour is seen with “boil over” events. However, they are not as clear as those seen in other studies and may not exist. This could be a result of the stimuli for the events being extremely complex with 11 events having greater than 20% of the total stimuli contributing to them. This could also be affected by the tribal nature of the population. The key generic category stimuli or drivers for these events are: external, societal, cultural and economic whereas the generic stimuli over the whole period study are societal, external, political and cultural. These rankings are determined based on a simple hierarchy scoring method discussed in Section 4.1.

Figure 5 shows the breakdown of causes to events for Papua. Early on in the phases prior to and during WWII we see that societal and cultural generic stimuli are key drivers. Economic stimuli are present throughout though not key. External Influences play a significant part throughout. Political drivers build up from the start of the incorporation into Indonesia.

, Figure 6, which shows the number of events attributable to causes by both total causes and generic cause type, shows that six stimuli have considerably high numbers of events attributed to them: tribal culture, frustration, independence, violent military control, Indonesian authority and publicity. These correspond to the generic key drivers of political, external, cultural and societal. These stimuli are the

key drivers present in most events, particularly since WWII and the problems since Indonesian governance. Additionally, the most common types of generic stimuli are societal, external and cultural. Certainly since 1963, several stimuli have become key drivers, such as publicity, politics and the level of forced military control on the population. However, apart from these key drivers we do not see any other patterns or trends in the numbers of events attributed to causes. One interesting point is that most of the political stimuli have high numbers of events attributed to them, whereas the other stimuli categories have a broad range.

7.2 Positive and Negative Influences

As discussed in Section 4.2, it was possible to undertake a very simplistic look at the apparent positive and negative influences on the population over the time period investigated. These influences are listed below and for simplicity they have been kept as generic as possible. Both long- and short-term influence considerations are incorporated into this analysis. However, they have been subsumed into this general list as part of the analysis and are not marked. Alternatively this could be achieved in a more “detailed” analysis.

The positive and negative influences are different from the **causes** in that they are more specific influences on the society, which in some cases do correspond to **causes** and in some cases are **triggers**. They are merely a comparative list of items, which caused either positive or negative reactions from the population and can be correlated with the **stimuli** discussed elsewhere in the report.

One influence is difficult to attribute to either a positive or negative effect. This is the urbanisation of the Papuan villages and move to urbanisation. This is difficult to categorise because its effects have been both positive and negative. Interestingly, a similar situation arose for PNG where some influences were difficult to classify. It is suggested that the tribal nature of the population may have contributed to this. The generic positive and negative influences over time for Papua are:

Positive Influence

- Move to self government
- Self Administration
- Highlighting cultural identity
- Recognition of tribal lands
- Education
- Urbanisation of the tribal/village system
- Recognition of cultural identity
- Christianity and recognition of tribal beliefs

Negative Influence

- Forced authority
- Transmigration and land issues
- Unequal treatment and remuneration
- Loss of tribal/cultural identity
- Refusal of independence or autonomous control
- Urbanisation of the tribal/village system
- Exploitation
- Introduction and “conversion” to Islam

7.3 Relationships between Causes

It is interesting to note from this analysis that some of the **stimuli** are similar throughout the period investigated and that it is very simple to see stimuli recurring. These stimuli, listed in Table 4, are termed persistent causes. However, this is only a small subset of the total list of stimuli.

Table 4: *Persistent causes over time for Papua*

Persistent Stimuli
Tribal culture
Traditional ways & beliefs
Frustration
Disappointment
Independence
Military control and treatment
Equality
Indonesian Authority
Exploitation
Political
Publicity
Traditional Land & financial
Human Rights

When the relationships between the stimuli are investigated directly, as in Appendix E.3, we see that the relationships for Papua are complex. However, we also do not see the strong causal stimulus evolution as for Aceh and East Timor [1, 2] and there is no strong societal memory over the long term. It is suggested that this lower level societal memory could be the result of the tribal nature of the population. However, with the numbers of persistent causes being high (and indicating quite a high level of complexity) when compared with other studies and PNG, this might indicate the development of a higher level of societal memory with the introduction of education, urbanisation and Indonesian Control. Note that several of the causes, such as political, independence, military control, Indonesian authority and publicity have become persistent since the handover of Papua to Indonesia in 1963.

7.4 Time Delays

This analysis did not show any correlation between the **causes**, **triggers** and **events** with respect to time delays between the factors. In fact for OPM, randomness appears to be a tactic of use. Certainly for the more general population there does not appear to be any obvious correlation with time.

8. Lessons Learned

There are several lessons, which can be learned from the analyses of PNG and Papua. These are presented below and also include some key drivers which have a significant impact on the population.

8.1 PNG

PNG has shown that it has very different manifestations of population reactions to those seen previously [1, 2]. Apart from the Bougainville crisis (which represents an extreme end of the reaction spectrum) many of the events on PNG have a considerably lower level of violence associated with them than seen in other studies. However, that is not to say that with development and the continuation of urbanisation of the traditional villages, that this may not develop in the future. Certainly there have been an increasing number of protests, and an increasing level of violence in more recent times. Particularly, continual clashes between clan and ethnic groups are evident, though on a small scale. These may indicate strong tribal or clan memories and may be linked to a memory of the traditional payback system for offences to other tribes or clans.

In terms of key drivers, the traditional and tribal culture and beliefs are integral to PNG society and drive much of the response. Coupled with this is the external influence driver, which has seen various effects. PNG has a large number of occurrences of “cargo cults” some of which have turned violent. This is due in part to the sudden exposure of relatively primitive groups to comparatively advanced western civilisation. This is an indication that external influences on the native population have a significant impact and that these need to be managed in conjunction with other causes for the formation of these cults. Indeed tribal beliefs are often merged with new ideas in order to understand them.

PNG showed an erratic occurrence of ‘boil over’ events, which were extremely complex. This might indicate a higher level of unpredictability in the population, which may be the result of the tribal foundations of the society. There does not appear to be a strong “societal memory” as has been seen in other countries and which contributes to evolution and recurrence of stimuli, though, as discussed earlier, there is a level of memory among the population. Additionally, there does appear to be a stronger societal memory on Bougainville. With the development of education and some break down of the traditional tribal village structure this may yet further develop on the rest of PNG. There is also the possibility of ethnic violence between groups on PNG due to historical ethnic hostilities.

Finally, for PNG the identification of positive and negative influences identified some influences which can be perceived as either positive or negative, blurring our ability to see factors of importance. Indeed some stimuli appear to have both positive and negative effects.

8.2 Papua

Papua has shown that there is the potential for religious violence between the natives (either traditional beliefs or Christian) and the Muslim migrants now living in the province. It is not clear if the ethnic violence is linked solely to religion or also results from the Javanese ethnicity of the migrant population. It is also not clear if this is purely a result of the Indonesian authority and influence coupled with a drive for independence stimuli. Indeed, all are contributing factors for violence in Papua. Similarly with PNG, while there is no strongly identified “societal memory” seen, it appears as though there may be indicators of this starting to develop.

There are clear positive and negative influences over time for Papua although one – urbanisation – appears to have effects in both directions. Although the tribal nature and culture is still a key driver for Papua, a national focus is seen against the external stimulus of Indonesian Authority and this may be the driver for a “societal memory” to develop.

Papua has proven to be extremely complex in stimulus contribution and hence there appears to be significant effort, which would be required to resolve many of these stimuli.

8.3 Regional Lessons to Date

For the four countries studied to date, East Timor, Aceh, PNG and Papua, it is possible to undertake a preliminary assessment of comparative trends. It must be noted that this is a simple regional comparison for those countries studied and that any trends identified thus far require verification against further population groups studied in the region with similar histories and backgrounds.

Although the populations investigated have been culturally and historically diverse there are trends seen in the appearance and identification of ‘boil over’ events.

Thus far, societal memory as a key driver for stimuli to population reactions has only been clearly identified in countries which have evolved from a feudal heritage in pre colonial times. However, the more tribal countries may be developing this with the introduction of education and greater urbanisation – though it has been identified that these countries do have a societal memory. This hypothesis is to be tested in the next round of population group studies. An aspect which is raised and which is beyond the scope of the reported studies is whether societal memory is a feature which is passed through generations or can be generated through education and awareness of history.

Key stimuli amongst all countries appear to be exploitation (or perceived exploitation) and external influences coupled with traditional structures and beliefs.

The level of complexity seen in stimuli for events may be related to the possible difficulty in resolution of events. Importantly, for all countries investigated to date, there are several stimuli categories which are present and consistent in all cases.

A common thread is the need for understanding of the past for each country in order to progress actions without causing the population to react.

9. Concepts for Development

There are several concepts which are still to be developed as part of this work. Firstly, more regional populations are to be studied and the theoretical link between a feudal background and societal memory needs to be tested. Indeed there may be other trends (based on history and pre/post colonial times) that appear with a greater sample set.

Other concepts to be investigated include development of plausible future scenarios based on historical analysis and incorporating analyses of insurgencies in the region and the strategic and national security implications.

Development of lessons directly applicable to ADF and other agency training also requires development in conjunction with cultural comparisons.

10. Conclusions

This report provides the historical analysis of population reactions to stimuli for both Papua and Papua New Guinea and also provides an early comparison between the four countries completed to date in our region. The intent of these studies is to identify probable generic causes of the population reactions over a large time period and to determine if there are trends or patterns of behaviour over that period.

Both Papua and PNG have been studied and although geographically located on the same island group have very different, relatively short histories of documented events when compared to each other and the countries already studied [1, 2]. Key drivers and stimuli have been identified as well as the lack of a strong societal memory for either country driving stimuli for events, though a societal memory does exist among the population. The events surrounding the Bougainville crisis for PNG have been described separately to show the extreme reaction nature of that situation when compared with the rest of greater PNG. Several lessons learned are provided for each country.

The initial regional comparison thus far has shown some trends of interest which require further investigation of other regional populations for verification and to develop the trends.

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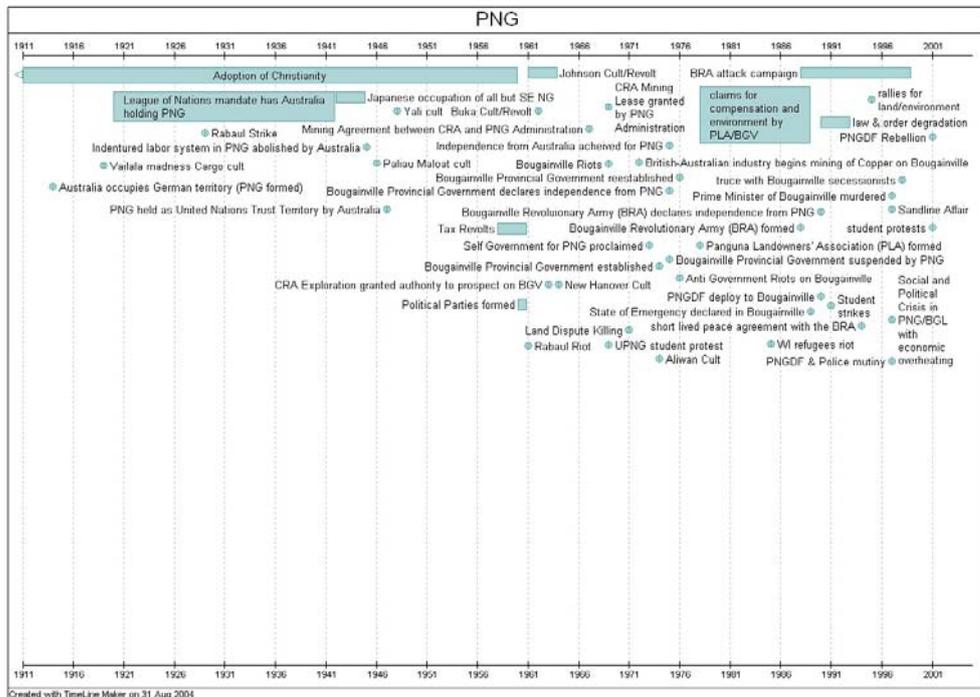
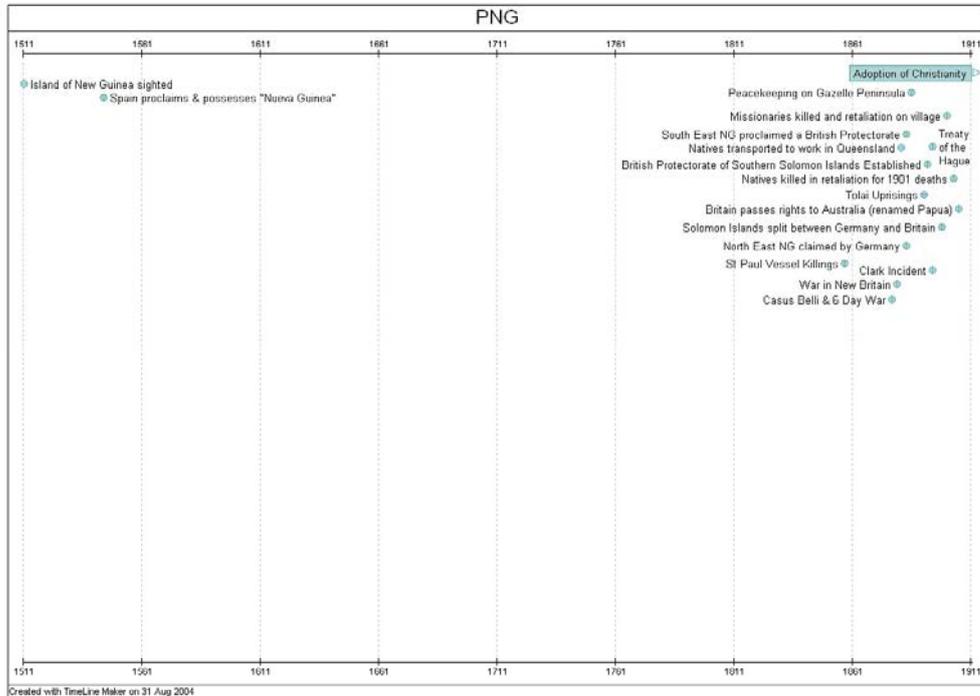
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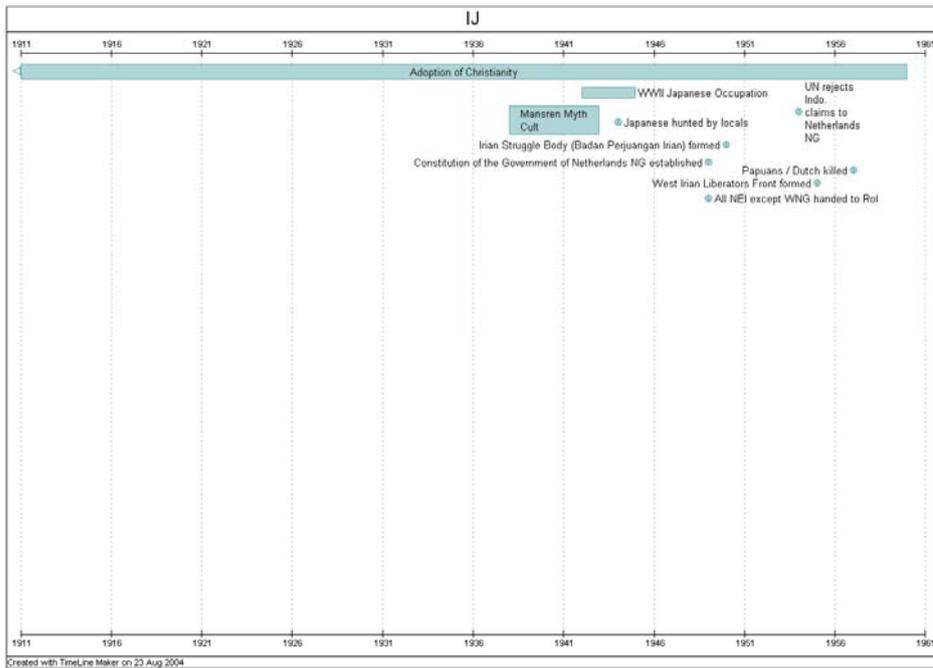
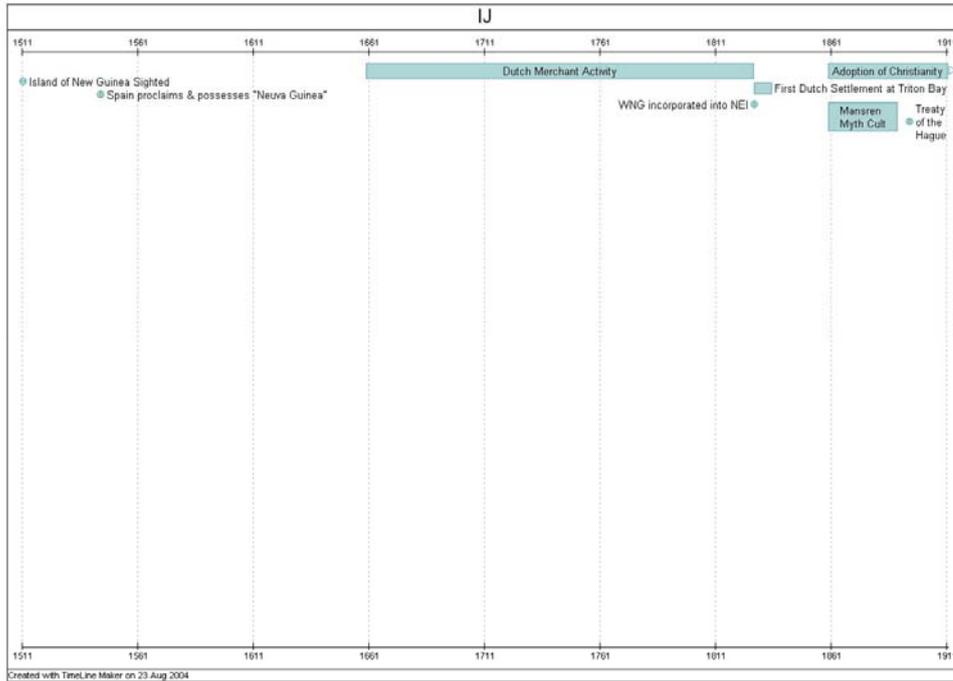
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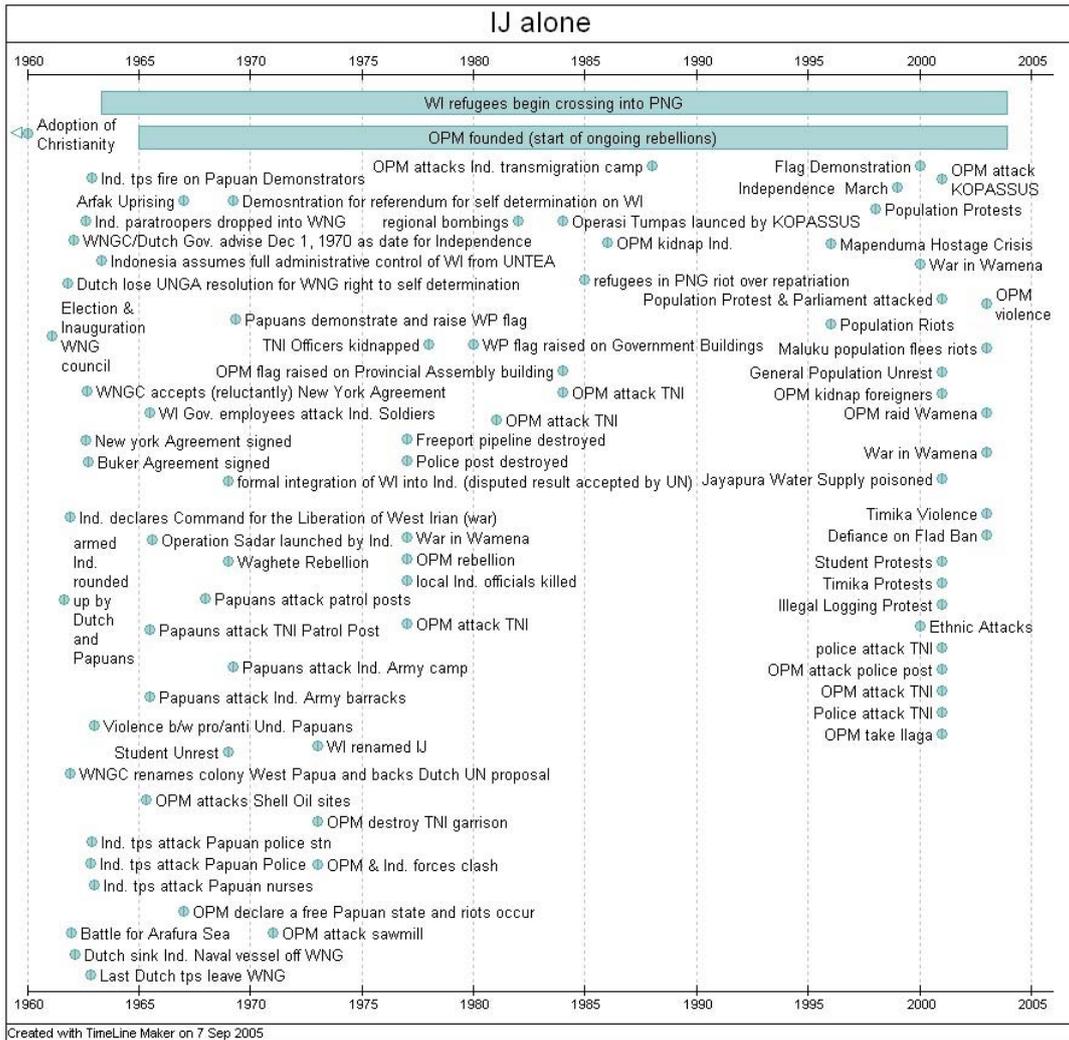
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Appendix A: Timeline of Events - PNG



Appendix B: Timeline of Events – Papua





Appendix C: Map of New Guinea

The image below [39] shows Papua New Guinea and surrounding islands as well as its proximity to Australia.

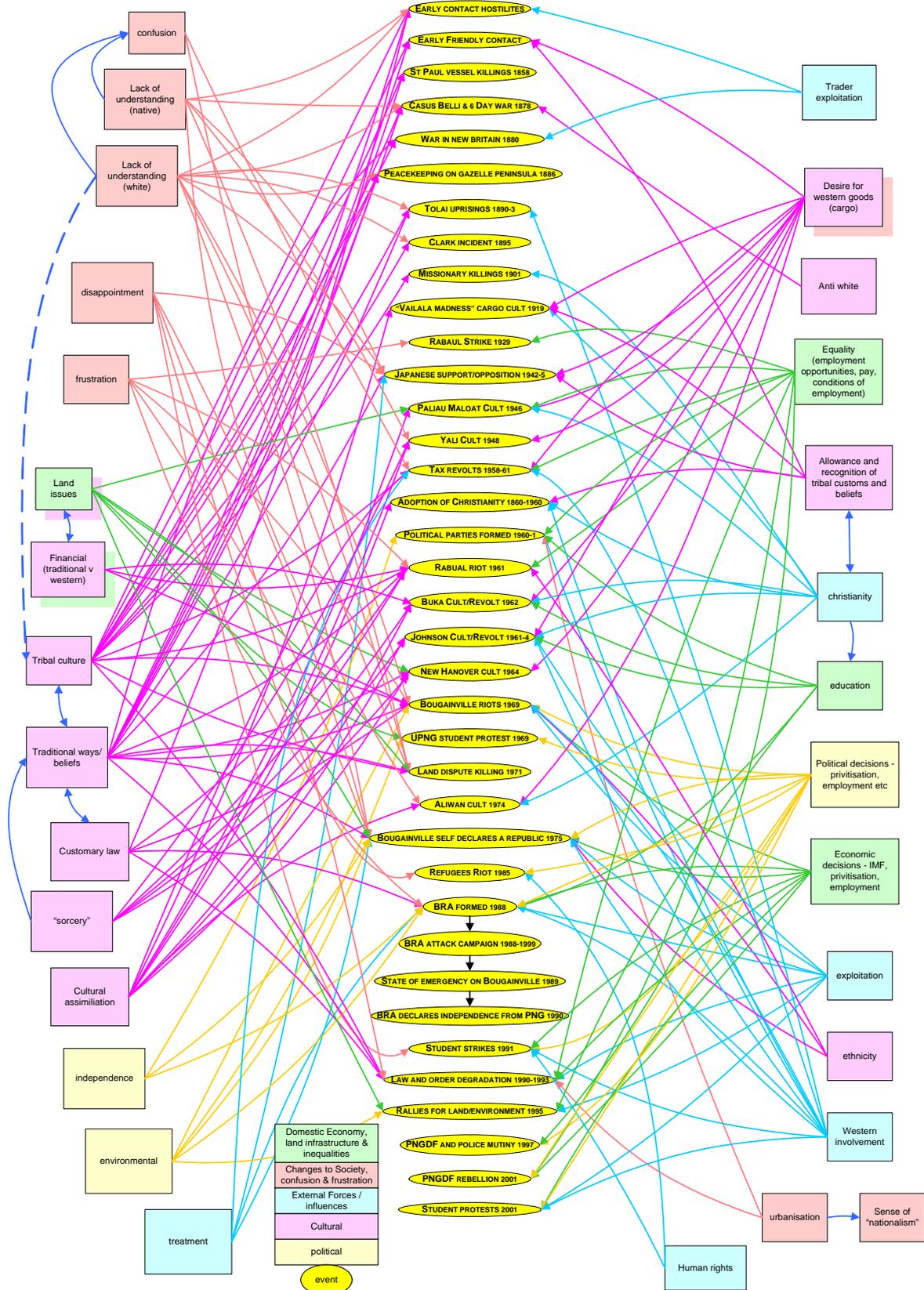


The image below [62] shows Papua and surrounding islands as well as its proximity to Australia.

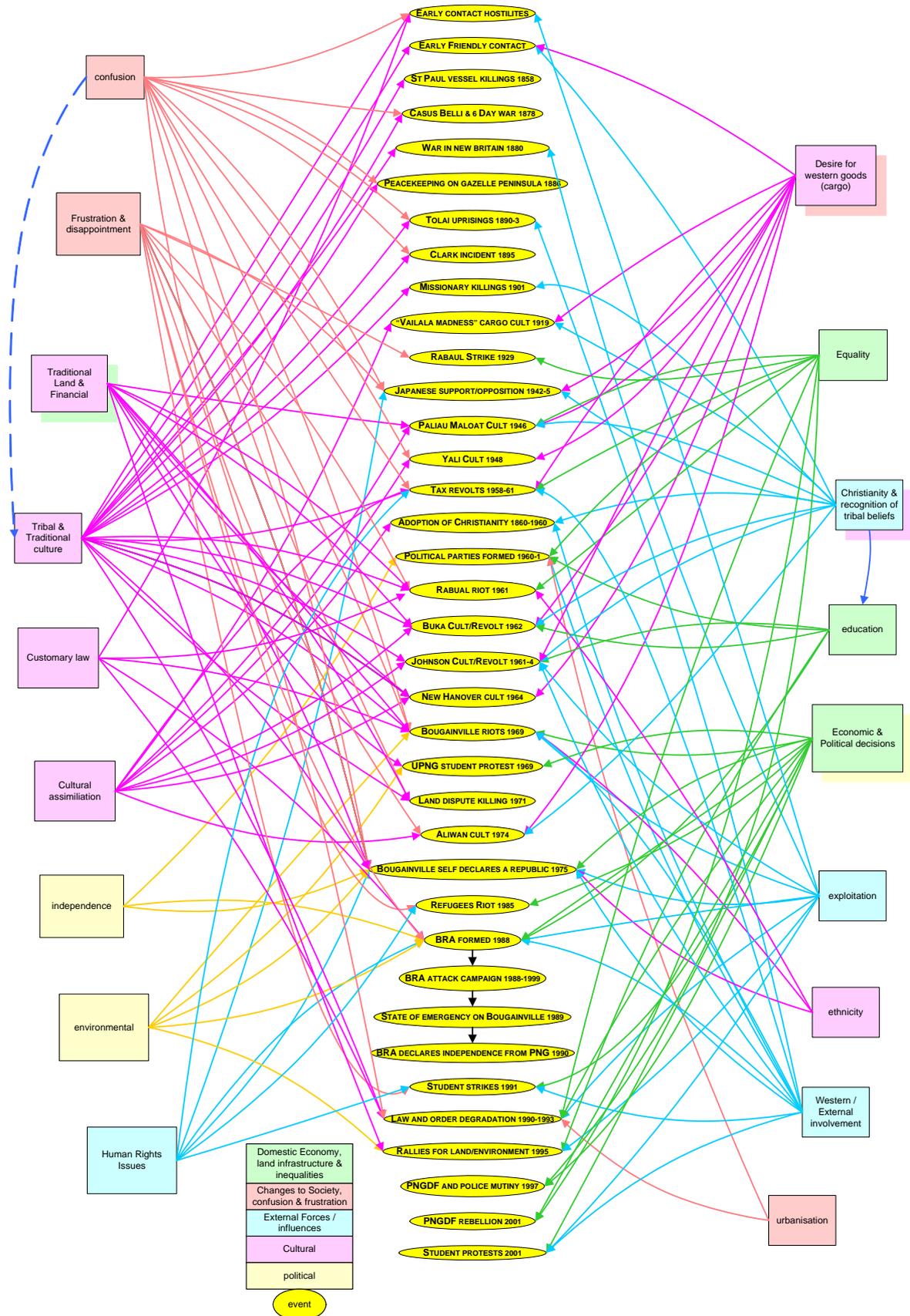


Appendix D: Events and Stimuli for PNG

D.1. Detailed Diagram of Stimuli and Events



D.2. Distilled Diagram of Stimuli and Events



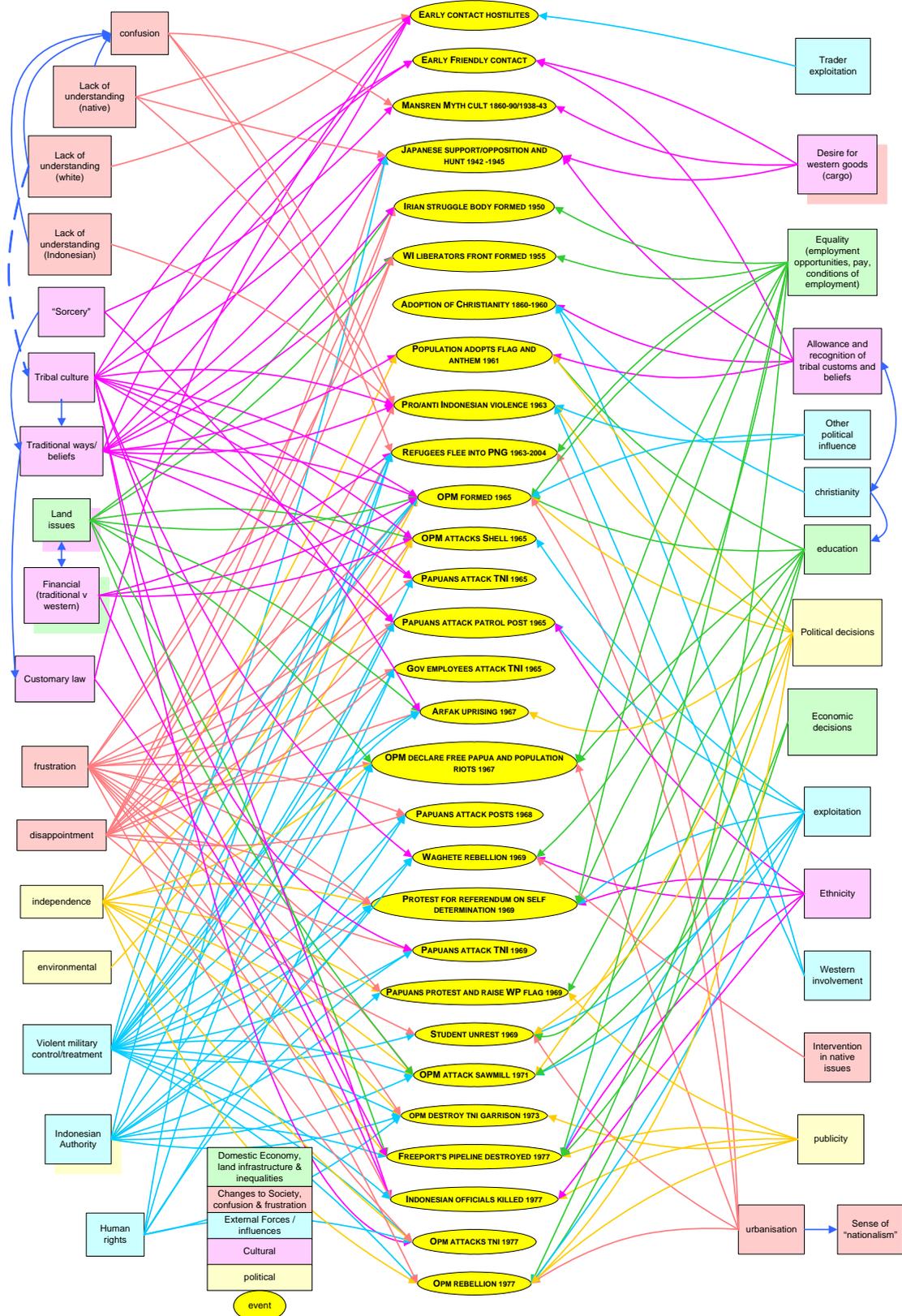
D.3. Matrix of Stimulus Relationships

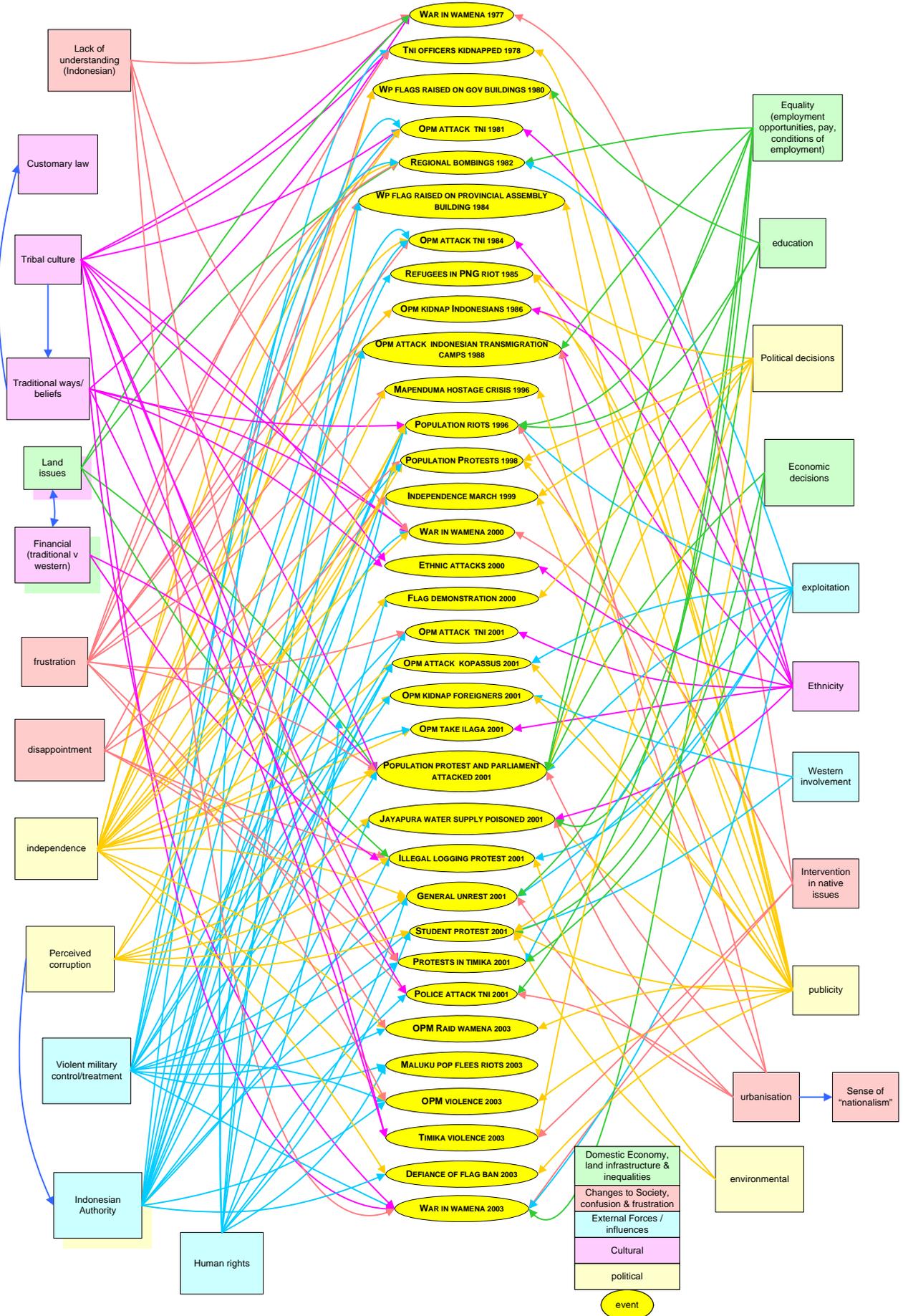
	confusion	frustration / disappointment	white understanding	traditional land/financial	tribal & traditional culture	customary law	cultural assimilation	independence	environmental	Human Rights	exploitation	ethnicity	external involvement	urbanisation	economic & political	education	recognition of beliefs & christianity	equality	cargo	
confusion	Black	Red	Red				Red								Yellow		Yellow		Yellow	
frustration / disappointment	Red	Black	Red	Green		Red				Green	Red		Green	Green	Red				Red	Yellow
white understanding	Red	Red	Black	Red	Yellow	Yellow					Green		Yellow		Red				Red	Green
traditional land/financial		Green	Red	Black	Red	Red		Green			Yellow		Green	Yellow	Red					
tribal & traditional culture			Yellow	Red	Black	Red	Red	Green				Red					Red		Yellow	
customary law		Red	Yellow	Red	Red	Black							Green			Green				
cultural assimilation	Red				Red		Black					Red	Yellow			Green	Red		Red	
independence				Green	Green			Black			Red		Red		Red					
environmental									Black				Yellow							
Human Rights		Green								Black	Yellow								Green	
exploitation		Red	Green	Yellow				Red	Red	Yellow	Black		Red		Red				Red	
ethnicity					Red		Red					Black								
external involvement		Green	Yellow	Green		Green	Yellow	Red	Yellow		Red		Black		Red	Green	Red		Red	
urbanisation		Green		Yellow										Black	Red	Red				
economic & political	Yellow	Red	Red	Red				Red			Red		Red		Black	Red			Yellow	
education						Green	Green						Green	Red	Red	Black	Yellow			
recognition of beliefs & christianity	Yellow				Red		Red						Red			Yellow	Black		Red	
equality		Red	Red							Green	Red		Red		Yellow		Black		Green	
cargo	Yellow	Yellow	Green		Yellow		Red						Red			Yellow	Red		Green	Black

Legend
 Strongly dependent
 Dependent
 Somewhat dependent

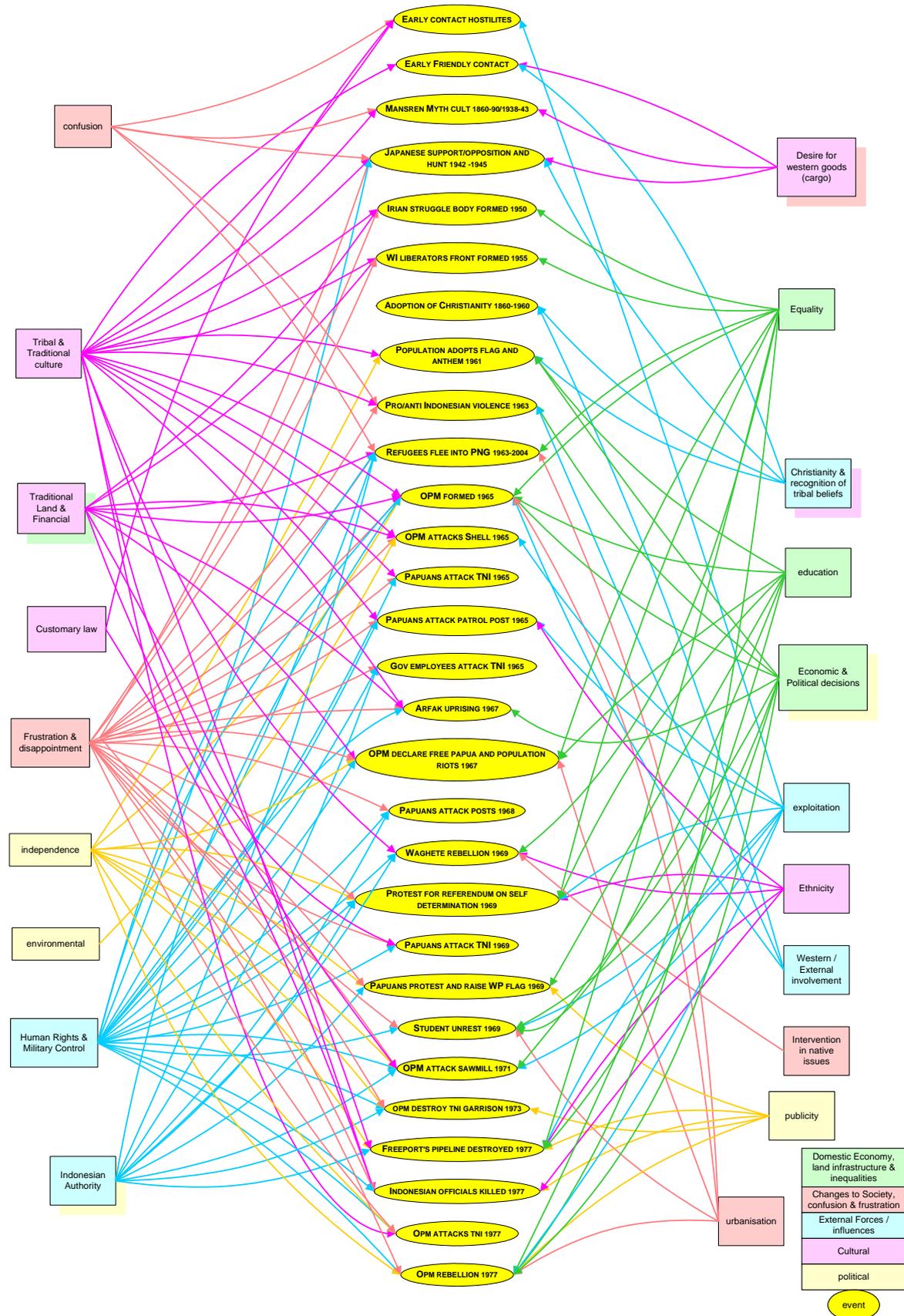
Appendix E: Events and Stimuli for Papua

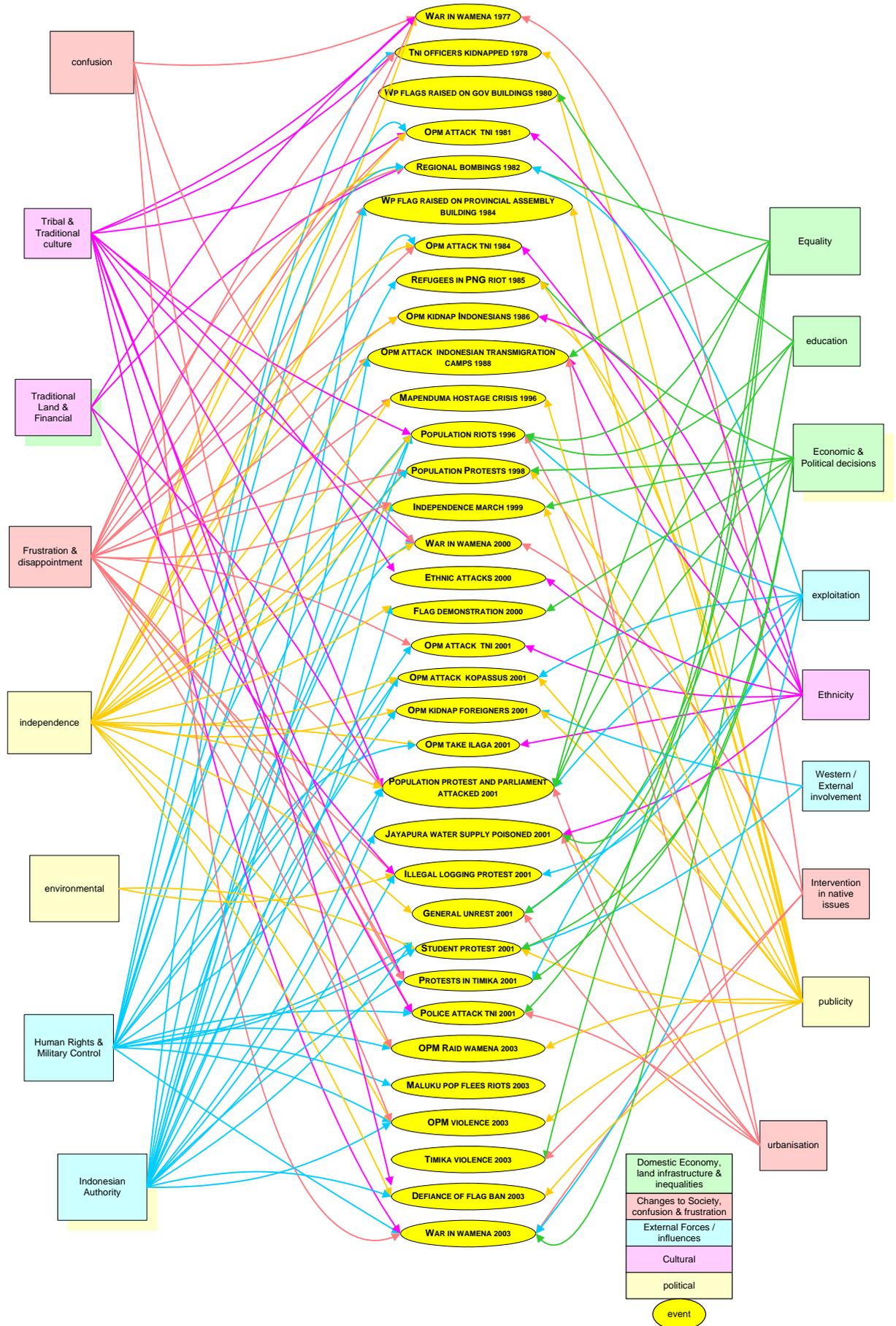
E.1. Detailed Diagram of Stimuli and Events





E.2. Distilled Diagram of Stimuli and Events





E.3. Matrix of Stimulus Relationships

	confusion	frustration / disappointment	traditional land/financial	tribal & traditional culture	customary law	Indonesian Authority	independence	environmental	Human Rights & Military Control	exploitation	ethnicity	external involvement	urbanisation	economic & political	education	Christianity	equality	cargo	Intervention Native issues	Publicity
confusion	Strongly dependent								Dependent	Dependent		Somewhat dependent		Somewhat dependent				Somewhat dependent	Strongly dependent	Somewhat dependent
frustration / disappointment		Strongly dependent	Strongly dependent			Strongly dependent	Strongly dependent	Dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent			Dependent			
traditional land/financial		Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Somewhat dependent				Dependent			Strongly dependent	Somewhat dependent						Somewhat dependent
tribal & traditional culture			Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent					Strongly dependent		Dependent						Dependent	
customary law			Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent					Dependent	Strongly dependent	Strongly dependent					Strongly dependent	
Indonesian Authority		Strongly dependent	Somewhat dependent		Strongly dependent	Strongly dependent	Strongly dependent	Somewhat dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Dependent		Strongly dependent		Somewhat dependent	
independence		Strongly dependent			Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent			Somewhat dependent			Strongly dependent
environmental		Dependent				Somewhat dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent						Strongly dependent
Human Rights & Military Control	Dependent	Strongly dependent				Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Somewhat dependent	Strongly dependent	Strongly dependent			Dependent		Somewhat dependent	Strongly dependent
exploitation	Dependent	Strongly dependent	Dependent			Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent			Strongly dependent
ethnicity		Strongly dependent		Strongly dependent		Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent		Strongly dependent
external involvement	Somewhat dependent	Strongly dependent			Dependent	Strongly dependent	Somewhat dependent	Dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent
urbanisation	Strongly dependent	Strongly dependent	Strongly dependent	Dependent	Strongly dependent	Strongly dependent	Somewhat dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent
economic & political	Somewhat dependent	Strongly dependent	Somewhat dependent			Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent
education						Dependent					Dependent		Dependent		Strongly dependent	Strongly dependent	Somewhat dependent			Strongly dependent
Christianity										Dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent
equality		Dependent				Strongly dependent	Somewhat dependent	Dependent	Dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent
cargo	Somewhat dependent											Dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent
Intervention Native issues	Strongly dependent			Dependent	Strongly dependent	Somewhat dependent		Somewhat dependent	Somewhat dependent			Dependent							Strongly dependent	Strongly dependent
Publicity	Somewhat dependent		Somewhat dependent				Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent	Strongly dependent

Legend
 Strongly dependent
 Dependent
 Somewhat dependent

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Historical Analysis of Population Reactions to Stimuli - Case Studies of Papua and
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Patricia Dexter

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19. ABSTRACT This study provides a baseline investigation for determining population reactions to stimuli in a historical context. Historical data analysis and qualitative data analysis techniques are applied to the last 150 years of events in both Papua and Papua New Guinea. Links and trends between events and stimuli are produced giving a preliminary dataset for any future trends impact analysis. In addition some general population reactions for these two countries are established. A preliminary regional comparison is conducted between East Timor, Aceh, Papua and Papua New Guinea.					