Introduction

The understanding of relationships with an "other" is central to highly controversial debate at this time. The debate focuses in particular on "same-sex marriage". This is considered especially questionable by various religions, most explicitly those of Abrahamic tradition and most especially by the Catholic Church.

The question here is whether the nature of relationships with any "other" can be reframed in the light of the variety of understandings of "marriage". The issue is whether this reframing effectively exists already to a degree, both intuitively and in practice. The "same-sex" controversy could therefore be understood as focused unfruitfully on a very particular understanding of the "other" whom it is possible to marry and the manner in which that marriage is honoured and celebrated.

It is argued here that a person may be variously considered by society to be "married to" a wide variety of "others", possibly including: a house, a farm, a club, an automobile, a hobby, a garden, a teacher, an occupation, a friend, a pet animal, a cause, etc. A Google search of "married to the " is indicative (132 million hits). A cause may indeed be "espoused", for example.

In each case the bond is recognized to have characteristics of "marriage" -- and may even be held to be so strong as to compete for fidelity with any conventional marriage, as with a person "married to" an all-absorbing hobby, despite the concerns of any spouse. Within such a context, any controversy regarding conventional marriage derives from what could be named as "definitional game-playing", selectively adjusting the criteria of marriage to honour (or deprecate) particular forms under particular conditions. As argued here, in practice the bond associated with the sense of being married takes a wider variety of forms in its potential engagement with one or more "others" -- and may well be recognized as such already.

This exploration follows from earlier efforts (Transcending Simplistic Binary Contractual Relationships: what is hindering their exploration? 2012; An Approach to Systematic Classification of Interpersonal Relationships, 1978). The last was subtitled as "essential to alternative life styles, social and personal transformation".

<table>
<thead>
<tr>
<th>Current approaches to marrying an animal</th>
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<tr>
<td>in an entry on Human-Animal marriage, Wikipedia offers historical examples in the case of horses, dogs, goats, and snakes, noting separately the incidence of zoophilia, namely sexual activity between human and other animals</td>
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<td>a man has unofficially married his cat after the animal fell ill and vets told him it might not live</td>
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Religious context

This exploration is written at a time when Pope Benedict XVI, most closely associated with radical opposition to any broader understanding of marriage, is about to retire. He has argued the case from a theological perspective. Pope Benedict XVI is recognized for his theological interpretation of love, notably in his condemnation of same sex marriage and abortion as in his address to a conference of the Diocese of Rome (2005):

The various forms of the dissolution of marriage today, like free unions, trial marriages and going up to pseudo-matrimonies by people of the same sex, are rather expressions of an anarchic freedom that wrongly passes for true freedom of man...from here it becomes all the more clear how contrary it is to human love, to the profound vocation of man and woman, to systematically close their union to the gift of life, and even worse to suppress or tamper with the life that is born. (Pope Benedict XVI Condemns Same-Sex Unions, NewsMax.com, 6 June 2005)

Curiously, to complicate any debate about marriage, nuns taking vows within that Church frame them in terms of betrothal and marriage to Christ -- they are the Brides of Christ -- a form of marriage considered to be a great mystery, but valued as real for all that. It is less clear to whom monks taking vows might be considered to be "married", although there is much controversy on whether they should engage in conventional marriage because of higher allegiance consequent on any vow of celibacy. However, in anticipation of the forthcoming papal election, Cardinal Keith O'Brien, Britain's most senior Catholic figure, points to ecclesiastical celibacy as having no "divine origin" (Marriage ban for priests should be reviewed by next pope, The Guardian, 22 February 2013).

Politicians, variously inspired by religion, are frequently articulate in their defence of the institution of marriage and vigorous in their opposition to "gay marriage". The marriage relationship is presented as central to "family values" and basic to sustaining human bonds, both within any community and within society as a whole (Deirdre Good, Jesus' Family Values, 2006; Judith Stacy, In the name of the Family: rethinking family values in the post modern age, 1996). Politicians, even including those presenting such arguments, are however increasingly noted for their extra-marital affairs -- whether heterosexual or homosexual. As with the clergy, these may extend to sexual abuse of the vulnerable and pedophilia. The Biblical Family Values, held to be based on the Bible, are notably challenged by the Sceptics Annotated Bible.

Pope Benedict has written three encyclicals of which two have a focus on love: Deus Caritas Est (God is Love, 2005) and Caritas in Veritate (Love in Truth, 2009). In the first he indicated that a human being, created in the image of God who is love, is able to practice love: to give himself to God and others (agape), by receiving and experiencing God's love in contemplation. Most unfortunately the depth of his reflection on love did not apparently extend to encompass those of other faiths or having perspectives with other insights into the matter -- as with the other Abrahamic religions. The confusion of love and charity in translations of caritas is also unhelpful -- especially given the action of Caritas Internationalis.

The possibility of a more universal understanding of caritas and compassion, beyond the exclusive Catholic theological interpretation, is seemingly beyond comprehension. The consequence is the creation of a situation in which the world either subscribes to the Catholic understanding of love -- as it should be understood -- or is necessarily to be seen as against love, irrespective of how it might be understood otherwise. This framing of love in terms of "you're either with us, or against us" is especially unfruitful -- reinforcing uncharitable political connotations (Us and Them: Relating to Challenging Others -- patterns in the shadow dance between "good" and "evil", 2009).

Many in society are described metaphorically as "married to" every variety of entity and practice -- and may well acknowledge a bond of that nature. This implies a more extensive understanding of what is involved in "marriage", whether or not this takes precedence in particular cases over more conventional understandings of marriage. Many conclude contracts which are as binding in practice, if not more so, than any conventional marriage contract. Increasingly the "marriage contract" is supplemented and clarified by a pre-nuptial agreement which may supersede that of the marriage contract under particular circumstances.

Conventional marriage has of course acquired a special status in law, whether secular law, religious law (as with Catholic canon law), or tribal law. Religious law and tribal law may well be held by those governed by them to take precedence over secular law, irrespective of measures taken under secular law to correct this interpretation. Similarly other forms of "marriage", as with that inferred from membership of a secret society, may well require greater respect than that of either conventional marriage or the secular law endeavouring to enforce its prescriptions.

Recognized criteria of marriage

As described by Wikipedia, marriage (also called matrimony or wedlock) is a social union or legal contract between people called spouses that establishes rights and obligations between the spouses, between the spouses and their children, and between the spouses and their in-laws. The definition of marriage varies according to different cultures, but it is principally an institution in which

much longer (German man 'marries' his dying cat, BBC News, 3 May 2010)

• critics of same-sex human marriage have suggested that it opens the way to marriage to a horse (Gay Marriage Law Could Produce Man-Horse Nuptials, The Huffington Post, 15 May 2010). However few would doubt that the bond which some have with a horse may be as deep as that which they may experience with a human.

Such examples, as extremes, obscure the subtly profound quality of the bond which many have with one or more animals over an extended period -- a bond whose recognition by civil or religious "marriage" may be as unnecessary as it is for deep bonds between many humans.
interpersonal relationships, usually intimate and sexual, are acknowledged. When defined broadly, marriage is considered a cultural universal.

The description continues:

The act of marriage usually creates normative or legal obligations between the individuals involved. Some cultures allow the dissolution of marriage through divorce or annulment. Polygamous marriages may also occur in spite of national laws. Marriage can be recognized by a state, an organization, a religious authority, a tribal group, a local community or peers. It is often viewed as a contract. Civil marriage is the legal concept of marriage as a governmental institution irrespective of religious affiliation, in accordance with marriage laws of the jurisdiction. Forced marriages are illegal in some jurisdictions.

The description subsequently notes the range of conflicting definitions and understandings of marriage. These might be tentatively contrasted in relation to informal bonds as follows:

<table>
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<tr>
<td>Love / Adoration</td>
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<tr>
<td>Solemn oath</td>
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Marriage more inclusively understood

The following table is a tentative exercise in highlighting relationships between criteria of marriage and bonds with various "others" where these criteria may be valued in a manner somewhat equivalent to their value in conventional marriage. The table is presented as a framework to invite reflection. It is not to be considered complete. Each cell merits further commentary and discussion. The rows and columns have been tentatively clustered to facilitate such reflection. A commentary follows on the column (headings) of the table as they may be relevant to the "other" specified in the row heading (on the left).

<table>
<thead>
<tr>
<th>Marriage understood as bonding with others of various kinds</th>
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<tr>
<td>religious marriage</td>
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<td>civil marriage (common law)</td>
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<td>tribal marriage</td>
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<td>mistress lover</td>
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<td>friend, peer</td>
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<td>servant work junior</td>
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<td>guru, teacher</td>
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<td>icon (dead)</td>
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<td>icon (living), celebrity</td>
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<td>imaginary partner</td>
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As a tentative exercise, the cells of the table (as with the distinction of rows and columns) call for reflection. Of particular interest is the manner in which any reflection may vary between cultures and over time.

**Marriage more inclusively understood: commentary**

**Loyalty / Fidelity:** This is initially acknowledged through a "solemn oath" indicating the nature of the bond. It is interesting to note the cases where this is considered of particular importance (even under secular law). Examples include citizenship, military service, and membership of a fraternity/sorority, or other (secret) society. This may take different forms with respect to a corporation or a charitable work to which a person may readily be considered "married" for life (as in the Japanese tradition). Less evident, but valued by those who practice it, is the oath and loyalty elicited by a cause or a weapon (as in Japanese ceremonies with respect to a traditional sword). It is also appropriate to note that the binding oath solemnly sworn in one culture may be considered quite meaningless in another culture -- especially within any associated (secular) legal system.

Especially interesting is the bond of a (hereditary) guardian of topography considered sacred (whether a mountain, a rock, a tree, or a songline) and the precedence this make take over more conventional bonds. This may also be true of the bond with a totem animal.

Other understandings of oath and fidelity are evident in relation to a habit or a dietary practice (typically a focus of "New Year Resolutions"). Of particular interest is the loyalty and care potentially evoked by a family home, traditional lands, an animal (pet, horse, dolphin, etc), or a (sacred) mountain. More readily recognized is the loyalty evoked by some with respect to an automobile, an airplane, or a cart. The (future) bond with a robot or an artificial intelligence merits consideration in the light of current engagement with social networking applications. Siri, as an intelligent personal assistant application, elicits a special bond through its use of a natural language user interface to answer questions and make recommendations. Potentially indicative of a trend is marriage with a robot (Jon Ferranquest, *Marry a robot of your own creation: China 4.0*, Bangkok Post, 4 Apr 2017; Jane Wakefield, *Sex Robots: experts debate the rise of the love droids*, BBC News, 22 December 2016)
Engagement: Conventional marriage may evoke, beyond fidelity, a spectrum of emotions, variously including "devotion", "adoration", and "love". The table suggests various ways in which such emotions may be evoked with respect to other "others". Variants are evident with respect to a teacher (guru), team mates, co-religionists, topographical features (a forest, a mountain, a river, etc), a work of art, a cause -- or a habit (wine, food, drugs). Of particular interest is the manner in which a bond may be "absorbing" -- as in fascination with a hobby or a game (such as football or chess) -- beyond the fascination assumed to exist in a conventional marital relationship.

Whereas conventional marriage stresses the significance of physical (sexual) intimacy, this may be variously interpreted with respect to other "others". It may take one form with team mates, work mates, or a dancing partner. It may take another with respect to animals (a pet, a horse, etc) or a garden, for example. The intimacy, as with conventional marriage, may be felt to extend to include emotional, intellectual or spiritual bonding. Instances of rape within conventional marriage may be echoed in forms of rape in the relationship with any "other".

Conventional marriage is of course preoccupied with the importance of an "other" of different gender. Less frequently discussed is the nature of fruitful polarity and difference in the case of other "others". What forms can difference take in order to be experienced as fruitful in a relationship? Partners in a "same sex" marriage may well be significantly different in the importance attached to engagement with an emotional, intellectual or spiritual dimensions. As with the physical dimension, this may change radically over time.

The number of partners considered appropriate for a conventional marriage has long taken a variety of forms -- extending beyond monogamy to polygamy. Polygamy, still accepted by some Christian denominations, is accepted by Islam and widely practiced in other cultures. Studies have shown it to be the preferred type of marriage in 75 percent of the world's societies, whether or not the costs permit it in practice. Polyandry may also be practiced within some tribal cultures. The Western counter-culture has experimented extensively with "group marriage". The relationship between a teacher and a "flock" may be understood in the light of polygyny or polyandry -- whether or not the intimacy extends beyond the intellectual or spiritual. The question of numbers also needs to be considered in any leadership/followership situation, whether with other humans, with animals, or otherwise.

Mutuality: Conventional marriage is held to be most readily acceptable, and most likely to succeed, where the partners are of the same culture, ethnicity or background. Marriage between those of distinct faiths or ethnicity may be considered problematic whether or not it is approved by law. The issue is especially evident in relationships between castes (as in the Hindu tradition) or classes (as in the aristocratic traditions) -- both being variously concerned with protecting the "bloodline". Equivalent considerations variously apply with respect to the other "others" in the rows of the table.

The question of the equality of partners in any conventional marriage is a matter of continuing controversy -- if only in the case of the Catholic concept of marriage. Partners are typically considered unequal in various respects with one (typically the male) being upheld as the dominant partner by right. The matter is far from resolved, despite the provisions of secular law. With respect to other "others", this difference may also be evident, whether or not it is a matter of controversy or significance.

Interpretations of the respective equality of partners in a conventional marriage result in different interpretations of the obligations of one partner to another. If any. One or other partner may even be treated with indifference and abandoned without care in times of necessity - - despite any vows relating to "sickness or health". Again the table invites consideration of the obligations between partners in more extended forms of marriage. That between team mates, especially on the battlefield is particularly striking. Great importance may be attached to the bond of obligation between people when one has saved the life of another (as in the fundamental importance of giri within Japanese culture).

With respect to any sense of mutuality, conventional marriage offers the dilemmas of "arranged marriage" and "forced marriage". Clearly variants of these are also evident with respect to any relationship with an "other"

Contract: Religious interpretation of marriage gives rise to a form of contract within the "laws" of that religion -- as with Catholic canon law. This may (or may not) be recognized by secular law. This is an indication of how the marriage may exist for the participants and for their community, but not for the secular legal system. The reverse also applies in that marriage according to civil law (common law) may not be recognized by the religion to which the partners belong -- necessitating, if significance is attached to the process, a "marriage in church", for example. The rows of the table invite consideration of how any contract regarding the bond with an "other" is recognized -- or considered nonexistent, whether "meaningless", "sinful" or "illegal".

It follows that breach of contract is variously understood with respect to any "other", as it is with respect to conventional marriage -- whether recognized by religious law or not. A marriage contract may of course be terminated or annulled under various conditions and with greater or lesser ease -- with or without the mutual consent of the parties. The sense in which an individual may be "married to" a religious community -- a particular "other" -- is highlighted by the process of excommunication. This can be related to the forms of exclusion from a "marriage" which are evident in the case of a team, a secret society, or a corporation. Downsizing might well be understood as a form of divorce -- especially where it is assumed that the contract was for life. Necessarily more questionable are equivalents of "honour killings" consequent on understandings of breach of contract in conventional marriage. Clearly anecdotal evidence relating to betrayal of secret and criminal societies is suggestive of such possibilities -- and may figure explicitly as a threat in any initial binding oath.

The duration of a conventional marriage contract is typically framed as being eternal or "until death do us part". Little is said of any continuing bond with the departed -- as is widely experienced -- a bond supposedly "terminated" by death.

Much is made of divorce, whether it is easily achieved, a threat to the well-being of one party, or potentially fatal when interpreted as an insult to the honour of in-laws. This understanding is of course called into question by the extent and increasing facility of divorce. However, as with marriage itself, the divorce may be recognized by secular law but not by the religious law under which the bond may have been recognized. As a consequence, the marriage may continue to exist from one perspective but not from another. Similar subtleties are evident in relation to bonds with other "others" in the table above.
It is of course the case that the Western counter-culture has explored relationships of varying duration -- even one-night stands -- possibly held to continue over years as bonds of special friendship or elective affinities. Of relevance is the manner in which the divorcees of conventional marriage have been considered persona non grata in certain circles within living memory -- raising the question of equivalent attitudes with respect to broken relationships with other "others". Also of interest are conditions, most notably in experimental intentional communities, where marriage contracts are concluded for a fixed period of time -- being then open to renegotiation (as in the Damanhur communities).

Conventional marriage in past centuries has typically given primary emphasis to socio-economic considerations, notably to ensure a protected environment for progeny. This may continue to be the case in many contexts -- whether explicitly or implicitly. The emphasis on romantic attachment is a relatively new development. A conventional marriage continues to have financial implications, whether explicit in the form of a dowry, or implicit. In the absence of any notion of a dowry, particular attention may well be given to a pre-nuptial agreement. Similarly any contract with an "other" may also involve financial considerations. Individuals may for example have to pay some kind of fee as a condition of membership of a group. This may range from the requirement of a criminal organization to the earlier notion of "buying a commission" in a military service. Rather than monetary exchange, there may of course be some form of exchange in kind -- corresponding to dowries based on cattle or land.

The contract may of course specify or imply the manner in which one party may inherit assets on the death of the other. Assiduous attention is given to this matter under secular law. With respect to the contract with any other "other", possibilities may well vary in striking ways. Clearly organizations may be recognized as beneficiaries in the testament of a benefactor. Legal arrangements may be made to the benefit of family lands or a wilderness area (for its protection). Much publicized cases have involved pets inheriting very large amounts on the death of the owner. Funds may be left to a cause with which the person was associated.

**Symbolism:** Ritual is typically associated with conventional marriage, whether by religion or in a civil marriage (in a far more rudimentary fashion). The marriage may be "sealed" by a blood sacrifice or one which recalls the symbolism of such. The symbolism may require a test of probity or provenance -- a call to the community for any reason why the marriage should not take place. The subsequent loss of virginity may be publicized in some cultures with a "bloodied sheet in the window".

Ritual may also be evident in the marriage to other "others" in the table. This may range from rites of passage of entry into a group or community -- possibly seen as a process of testing appropriateness, as with a test of virginity. The innocence of those entering such a rite may even be acknowledged by prior deprecation as "virgins" (irrespective of gender). Drawing blood may play a significant part in this, whether wiping the face with the blood of an animal as in some hunting clubs, cutting off a finger (as practiced by the Yakuza), or the duelling scars of the German aristocracy. The bond with a weapon, such as sword, may need to be "activated" in some traditions by drawing blood.

**Questionable criteria of marriage**

The above table excludes two criteria of conventional marriage which may be deemed fundamental and an essential distinction from other bonds with any "other" in the table above.

The first is the sacred nature of marriage. This may be reflected in the nature of the solemn oaths and vows at the time of marriage. However the "sacred" nature may be effectively set aside in a civil marriage. Furthermore the sacred nature of a marriage in one culture may well be considered meaningless, if not an abomination, by another culture. Pope Benedict XVI was unable effectively to address this concern in his problematic dealings with other faiths. It is indeed the case that those engaging in any form of marriage with an "other" may well imbue it with an understanding of "sacred" which is consistent with that of the Pope -- or completely at variance with it.

The second criterion relates to the consummation of the marriage, conception and the engendering of progeny. Failure to consummate a marriage is considered one reason for the annulment of a conventional marriage from the perspective of the Catholic Church, for example -- irrespective of other binding criteria. This may be extended to encompass any failure successfully to conceive, irrespective of interpretations of "consummation". A tragic case is that of sterility.

With respect to any sense of marriage to an "other", as with same-sex marriages, the question is whether the complex consummation-conception-progeny is a restrictive criterion on any sense of marriage. Clearly for those arguing for such marriages this is not the case -- irrespective of whether arguments are made for the adoption of children.

A conventional marriage raises similar questions in that physical intimacy may be set aside over the years, irrespective of whether consummation ever occurred. The marriage bond may continue to be valued -- or not. This suggests that marriages with any "other" may not necessarily be considered dependent on physical (sexual) intimacy or any associated consummation, conception and progeny. Curiously bonds with other "others" may well be recognized as involving forms of "conception" (notably as within design teams) as well as engendering "progeny", "offspring" or "children" (as with the result of collaboration between musicians).

**Subtler insights into the "chemistry" of the marriage bond**

Great emphasis is typically placed on the fundamental importance of the marriage "bond". How that is to be understood is a matter of debate and interpretation. However, more important, is what any such relational bond is sensed to be by those party to it -- those who are bound by it.

Whilst bond is a word with many connotations, it is interesting to explore its more recent connotations in relationships. It is notably recognized in networks of friends, amongst team mates, amongst those who have shared a traumatic experience, amongst those who have grown together as members of the same group, and the like. However a bond may also be recognized with a teacher, a faith, an animal, a garden, a wilderness area, a mountain, a vehicle -- in fact all those featuring as rows in the above table.
between "ionic marriage" and "covalent marriage" already have a degree of intuitive acceptance. This should not be surprising since the many web references to "ionic love" and "covalent love", most frequently expressed through song lyrics -- with even a web

Molecular bonding suggests ways of considering a much more extensive array of possible arrangements. It is appropriate to note that the "other" be a comprehension -- as with any "other" with which that person has a bond. The conventional understanding of marriage would have it that if an atom is a challenge to comprehension, with its shells of orbiting electrons, why should a person not also be a challenge to

The preoccupation here with respect to a bond of marriage is with the understanding of any "other" with whom bonding may be felt to occur. It is overly simplistic to focus on a definitional category implying that the other can be depicted as a box, a ball or some other identity container with which that with which I am identified can have a "link" -- as with a cord (used in some marriage rituals to bind parties together symbolically), or perhaps with a telephone cable or a web address.

Two main types of molecular bond are distinguished, as described by Wikipedia:

- An ionic bond is a type of chemical bond formed through an electrostatic attraction between two oppositely charged ions. Pure ionic bonding cannot exist: all ionic compounds have some degree of covalent bonding (see below). Thus, an ionic bond is considered a bond where the ionic character is greater than the covalent character. The larger the difference in electronegativity between the two atoms involved in the bond, the more ionic (polar) the bond is. Bonds with partially ionic and partially covalent character are called polar covalent bonds.

- A covalent bond is the chemical bond that involves the sharing of pairs of electrons between atoms. The stable balance of attractive and repulsive forces between atoms when they share electrons is known as covalent bonding. For many molecules, the sharing of electrons allows each atom to attain the equivalent of a full outer shell, corresponding to a stable electronic configuration. Understanding is further refined by the sense that "electrons" are not usefully to be understood as simple charged "balls" in orbit around the nucleus of an atom -- whether shared with an other or not. Rather they are better understood as "electron shells" or "clouds" of potential spread around the orbit -- which may indeed encompass an other atom.

If an atom is a challenge to comprehension, with its shells of orbiting electrons, why should a person not also be a challenge to comprehension -- as with any "other" with which that person has a bond. The conventional understanding of marriage would have it that the "other" be a person, preferably of the opposite sex and preferably single, as noted above.

Molecular bonding suggests ways of considering a much more extensive array of possible arrangements. It is appropriate to note that there are many web references to "ionic love" and "covalent love", most frequently expressed through song lyrics -- with even a web discussion of the question Is marriage a covalent or ionic bond? (High Existence). There is therefore a sense in which distinctions between "ionic marriage" and "covalent marriage" already have a degree of intuitive acceptance. This should not be surprising since the
human being is an embodiment of ionic and covalent bonds -- a fundamental phenomenon which might be expected to condition viable patterns of human engagement with any "other".

Somewhat ironically the restrictive understanding of heterosexual marriage has a degree of systemic correspondence to the ionic bond and its requirement for two oppositely charged atoms ("positive" and "negative"). It excludes consideration of the range of "covalent" bonds and the extent to which covalence may anyway be present to a degree in an ionic bond. Same-sex bonding is thus a particularity in a vast spectrum of ways of bonding with an "other" -- a spectrum calling for attention inhibited by the focus on that detail. Its value to this discussion is therefore as a symbol indicative of willful negligence.

The obsession with the "ionic ideal" of a marriage of polar opposites -- in contrast to same-sex bonds -- is especially unfortunate to the extent that further investigation may confirm the sense in which bonds in marriage are more typically a mix of "ionic" and "covalent" forms.

Especially significant to this argument is the cognitive projection through which the "other" is framed and identified by one party. This is clearly evident in the relation between a person and a pet animal with which significant bonding may take place -- especially in the absence of a human partner. How the nature of that bonding is to be distinguished from bonding with other "others" is a matter for the future. Efforts to denigrate the depth of the bonding experienced by some with other "others" does little to enhance respect for those who attach greater significance to the conventional marriage -- marked as it so frequently is by domestic violence and divorce.

Bonding with an "other" articulated through the language of molecular bonding

The embarrassment at the present time is that the bonding with some "others" may be experienced as "deeper" and qualitatively superior to that with an other person. In the light of the electron shell metaphor, it is possible that this can be understood as bonding which engages "inner shells" rather than simply the "outer shells". This would provide a language within which to start to articulate the sense of a "deep" bond -- so often described, irrespective of whether it is felt within conventional marriage or otherwise.

In chemistry, the various molecular bonding theories assume that bonds are formed by atoms sharing electrons in directional orbitals. This by all accounts represents reality accurately. One more simplified or primitive model presupposes no orbital directionality. Another actually treats electrons of the two atoms as repulsive as the two atoms attract electrostatically. Being the simplest, however inadequate, such models are used to introduce understanding of molecular structure orbital theory to students. How is the nature of bonding with "others" introduced -- as a prelude to more complex and subtle insights?

The question here is whether these theories suggest ways of thinking about the human experience of bonding -- whether framed in terms of some understanding of "love" or not -- as experienced with an "other", possibly giving rise to the description of being "married to". The developing language of these theories, under continuing exploration, offers the advantage of a healthy contrast to the closure associated with the unquestionable language of caritas, as offered by such as Benedict XVI.

For example, a molecular orbital is a mathematical function describing the wave-like behaviour of an electron in a molecule. This function can be used to calculate chemical and physical properties such as the probability of finding an electron in any specific region. Molecular orbital diagrams offer a qualitative descriptive tool explaining chemical bonding in molecules in terms of molecular orbital theory. As noted by Wikipedia, there are a variety of known chemical bonding interactions including covalent, ionic, and metallic bonding among others. The theories associated with bonding are often developed around the covalent bonds and extended to ionic and metallic bonding. These theories make various approximations rendering each of them useful for describing different nuances of common molecular bonding.

In striking contrast to restrictive understandings of the marriage bond, the principal molecular bonding theories include (quoting Wikipedia):

- **Valence Bond Theory (VBT)**: an early bonding theory, which has developed into modern valence bond theory. VBT views bonds as weakly coupled orbitals with each atom sharing a valence electron.
- **Valence shell electron pair repulsion (VSEPR) Theory**: the simplest and most primitive of the theories currently taught. Describes molecular geometry through the repulsion of electron fields which include bonds and lone pairs. It does not require any application of orbital shape.
- **Crystal Field Theory (CFT)**: this approximation begins with the geometries of the d-orbitals derived from quantum mechanics. Ligands with their electron density are assumed to destabilize the metal d-orbitals they interact with raising their energy while the remain d-orbitals drop in energy to balance the overall change in energy.
- **Ligand Field Theory (LFT)**: considered a hybrid of CFT and MO Theory or simple an approximate application of MO Theory to transition metal complexes.
- **Molecular Orbital (MO) Theory**: a current and often applied model of molecular bonding. MO Theory assumes that bonds are derived from a linear combination of atomic orbitals. In this linear combination each pair of atomic orbitals involved in bonding results in a bonding and anti-bonding orbital.

In encouraging closure of understanding of human bonding with any "other" -- in contrast to the active exploration of the bonding fundamental to the human constitution -- the Pope places himself in a position analogous to that adopted by the double Nobel laureate Linus Pauling with respect to the discovery of quasicrystals by Daniel Schectman (who received the Nobel laureate in chemistry in 2011 for that work). Pauling is noted for declaring that "There is no such thing as quasicrystals, only quasi-scientists" -- suggesting further that Schectman go back and re-read the conventional crystallography textbooks (Alok Jha, *Dan Shechtman: 'Linus Pauling said I was talking nonsense', The Observer, 6 January 2013*).

With respect to the Pope's intuitive understanding, expressed in theological terms, it might be asked whether the "Love of God" could
be more comprehensively articulated through the wave-like dynamics of electrons in electron clouds and orbitals -- potentially more consistent with the variety of experience of human bonding with an "other" of whatever form. The omnipresence of wave-like electrons, and their fundamental nature, would seem to offer a rich and subtle metaphor -- capable of including the Pope's articulation -- and reminiscent of the cosmic plenum to which allusion has been made from a theological perspective by such as Pierre Teilhard de Chardin, David Bohm and Paul Tillich.

<table>
<thead>
<tr>
<th>Marrying a plant -- a tree</th>
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</table>
| The has been extensive extensive medi coverage that a famed personality, Aishwarya Rai, was married to a tree to ward off evil effect she would have had on her husband due to problematic aspects in here horoscope (Modern with Ancient - Marrying a Tree, The Undercover Indian, 28 February 2007; Film star faces lawsuit after 'marrying' a tree, The Telegraph, 1 February 2007). Tree marriage has been a common practice with certain sects of India. In Hindu tradition, to ward off evil influence, a person can marry a tree like a Peepul or Banana (or a clay urn) before marrying the person. This way evil influence is diverted to the tree or urn rather than onto the person. Thus when a man loses two wives by death and wants to marry a third the fear lurks within him that she, too, may die. So before the marriage the man is married to a banana tree or some other plant. When marriage is regarded as a sacred duty which must be entered into by every man and woman, and if a human being is not available, anything else will do, the preference being given, however, to growing things. There are records of hundreds of tree marriages in India, but no one tree divorce. (Married to a Tree, The Mail (Adelaide, SA, 28 January 1928).

Complementary languages required for articulation of human bonding

Given the only too evident challenges to human bonding in society, a single restrictive language is evidently inadequate to the explication of the subtlest personal (even mutual) experience. Valid appeals may indeed be made to the insight of poetic intimation, appropriately enhanced by song. The argument of the much cited Beatles lyric, echoing a common Christian sentiment, that All You Need is Love (1967), would seem however to merit subtler articulation.

The need is especially evident with respect to the deepest sense of bonding and mutuality for which new language is urgently required to convey more fundamental meanings. The elusive subtlety of wave-like electrons -- notably in the light of the Uncertainty Principle -- offers the strong suggestion that the nature of human "bonds", as experience confirms, may no more lend itself to definition than do electrons (cf. Garrison Sposito, Does a generalized Heisenberg Principle operate in the social sciences? Inquiry, 12, 1969). This is a fundamental challenge for the exclusive language of theology.

Consistent with the vibrational dynamics of electron clouds, intuitive popular engagement with vibration and resonance through song and dance may well offer insights into the varieties of bonding as yet to be fully appreciated, as separately discussed (A Singable Earth Charter, EU Constitution or Global Ethic? 2006). The embodiment of relational understanding in dance follows naturally from the work of Mark Johnson (The Meaning of the Body: aesthetics of human understanding, 2008; The Body in the Mind: the bodily basis of meaning, imagination, and reason, 1987) and of Maxine Sheets-Johnstone (The Primacy of Movement, 2011).

Although there has been extensive work on human states of consciousness, it is not apparent how that translates into insight into human bonding with an "other" as highlighted here (with the possible exception of the deprecated "oceanic feeling"). These arguments raise the question as to the need for a complementary set of "languages" to hold aspects of the insights into the forms of human bonding that lend themselves to the label "married to". These might include:

- **experience**: of the bond, as recognized subjectively by a participant, irrespective of how it might be articulated or not
- **metaphor**: as processes variously illustrative and indicative of the nature of the bond, primarily when considered meaningful by a participant, but secondarily by others in explanation of their understanding of the experience
- **spiritual implication**: as attributed primarily by those engaged by the bond, but secondarily from any perspective considered relevant within a symbolic or theological framework
- **psychosocial explanation**: as presented by researchers, according to current theories of psychology and sociology, to indicate (from an external perspective) the norms and pressures conditioning emergence of the bond and the experience of it
- **theological explanation**: as framed within the tradition within which the religious dimensions of the bond are recognized, according to the language and terminology of that tradition, irrespective of whether it is meaningful to those engaged in the bond
- **neurophenomenology**: combining neuroscience with phenomenology to enable researchers to study the experience, mind, and consciousness, as it relates to the bond, with an emphasis on the embodied condition of the human mind
- **molecular modelling**: as noted above as an extended metaphor, specifically with regard to understanding of the complex wave-like dynamics associated with any complex bond
- **relationship encoding**: notation systems indicating comprehensive patterns of relationships

In this indicative set of languages, the first three acknowledge the perspective of those in the bond. The following four are conventional disciplines through which the experience of the bond might be described from an external perspective. The last embeds systems of relationships in various patterns, comprehensible as metaphors inviting enactment and embodiment in some way, as with dance, as separately discussed (Reframing the Dynamics of Engaging with Otherness: triadic correspondences between Topology, Kama Sutra and I Ching, 2011).

The question is how the languages, separately or together, provide deeper understanding of the bond -- perhaps consistent with its articulation in poetry or song. The relevance of complementary sets of languages has been discussed separately (Eliciting a 12-fold Pattern of Generic Operational Insights: recognition of memory constraints on collective strategic comprehension, 2011; Enabling a 12-fold Pattern of Systemic Dialogue for Governance, 2011).
The argument with respect to the bond described in terms used for the wave-like behaviour of an electron in a molecule can be further developed in the light of current preoccupations with the hypotheses regarding a quantum mind or quantum consciousness. These propose that classical mechanics cannot explain consciousness, while quantum mechanical phenomena, such as quantum entanglement and superposition, may play an important part in the brain's function, and could form the basis of an explanation of consciousness. The emerging field of quantum cognition is necessarily relevant.

The question here is how these developments might apply to the bonds in which humans elect to engage. A set of languages is however necessary to ensure that complex explanations of an experience mesh intimately with the subjective experience of those involved in the bond -- rather than being simply convenient labels for those offering hypotheses about an experience about which they may have only rudimentary awareness. The quest is for cognitive assistance to enable deeper engagement in a wider range of human bonding with any "other" (In Quest of Mnemonic Catalysts -- for comprehension of complex psychosocial dynamics, 2007).

For those enjoying such a bond, it is a matter of offering them a language through which they might consciously "ride" (or "surf") the wave-like behaviour suggested by the language of electronic bonding, presumably characteristic of the wave-like operation of the human brain through which the bond is experienced. It is appropriate that appreciation of music is so suggestive in that respect and is explored in those terms, as discussed separately (Musical facilitation of integrative comprehension, 2011). Especially intriguing is the manner in which uncertainty of the subjectivity and objectivity of the bond ("does she really love me?") plays out in that experience (¿ Defining the objective ≠ Refining the subjective ?? Explaining reality ≠ Embodying realization, 2011).

Extending understanding of the "other" as a potential partner

The Christian feminist theologian Sallie McFague argues that the language of theology is necessarily a construction, a human creation, a tool to delineate as best we can the nature and limits of our understanding of God. She has explored the use of a variety of metaphors through which "God" might be understood (Metaphorical Theology: models of God in religious language, 1982; Models of God: theology for an ecological, nuclear age, 1987). The argument can be extended to apply to any "other" -- including those with whom "us" have problematic relationships, as noted above (Us and Them: Relating to Challenging Others, 2009).

Using marriage as a metaphor, the question is then the possibility of being "married to" any such "others" -- with the further possibility that many international conflicts could be reframed in terms of the creative thinking currently required in response to "domestic violence" and "marital rape". The argument can be developed in terms of the fruitfulness of intercourse, especially given the manner in which this is used as a description of engagement with any "other" ("Human Intercourse": "Intercourse with Nature" and "Intercourse with the Other", 2007). This is consistent with an initiative of the Common Bond Institute in organizing a series of conferences (International Conference on "Engaging The Other") offering a universal, cross-cultural perspective to promote wider public dialogue about images of "Us and Them".

Of concern is whether the recognition of "otherness" is appropriately challenging, given the ease with which "unacceptable otherness" is demonised (Existential Challenge of "The Other", 2007). How "other" can "otherness" be -- before being questionable framed as demonic (cf. Interweaving Demonic and Daimonic Associations in Collective Memory, 2008; Reframing the Dynamics of Engaging with Otherness, 2011)? Of related interest is problematic attraction to the "other" constituted by any image of the self -- highlighted by the myth of Narcissus and its psychological implications.

Such questions are of relevance when extended to the "world" with which current global civilization is associated -- given the unresolved conflict between the exclusive worldviews of religions (Stephen Prothero, God Is Not One: the eight rival religions that run the world -- and why their differences matter, 2010). Christian theology has had problematic historical preoccupation with "marriage to the world" (in its "Pergamum period").

It might be asked whether such possibilities now call for engagement with paradox transcending the tendency to simplification, as separately argued (Intercourse with Globality through Enacting a Klein bottle, 2009). How might the possibility of being "married to the world" follow from the above argument (En-joying the World through En-joying Oneself: eliciting the potential of globalization through cognitive radicalization, 2011).

Extending the family of "family values" -- wisely

<table>
<thead>
<tr>
<th>Marrying a rock -- or an inanimate object</th>
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<tbody>
<tr>
<td>It has been reported that it is legal for humans to marry rocks in the City of Los Angeles. It is alleged that such a marriage occurred in 1950 between a woman, Janene Swift, and a piece of granite. The supposed &quot;fact&quot; has been retold on numerous internet sites and in several newspaper archives, though usually dated to 1975 or 1976. People have variously &quot;married&quot; inanimate objects, as reported by Jude Newsome (13 People Who Married Inanimate Objects, Ranker). In some Hindu traditions, where it is a sacred duty to marry, when a suitable husband cannot be found for a girl, she is married to a sword, a bow-and-arrow, a grinding stone, or some other inanimate object. In India there is also recognition of a wide range of transgender-related identities, cultures, or experiences (Hijras, Aravanis, Kothis, Jogtas/Jogappas, and Shiv-Shaktis). Shiv-Shaktis are considered as males who are possessed by or particularly close to a goddess and who have feminine gender expression. They are indentified into their community through being married to a sword that represents male power or Shiva (deity) and thus become the bride of the sword. (Hijras/Transgender women in India: HIV, human rights and social exclusion. Issue Brief, UNDP India, December 2010). Widow--marriage may involve ritual marriage to a sword, representing the second husband -- who never attends in person.</td>
</tr>
</tbody>
</table>
Extending the possibility of being "married to" implies an extension of the understanding of "family" -- whatever that then means, given the variety of "others" engaged by the process. The Catholic Church has attached particular significance to the Christian family, as articulated by Pope John Paul II (Familialis Consortio: On the role of the Christian Family in the Modern World, 1981).

It is appropriate to note some of the other ways in which a sense of "family" is stressed:

- an organization framed as a family, notably in the case of some business corporations (perhaps as a "family corporation") -- typically to promote a sense of corporate identity
- a corporate family, understood as the totality of various associated, but distinct, legal entities
- a crime family, as an unit of organized crime syndicate, particularly the Mafia, often operating within a specific geographic territory.
- a government agency as a family, as implied by the Family Jewels -- the informal name of a set of reports of activities conducted by the CIA
- religions may be described as composed of families of divisions understood as together constituting the larger family of that religion. Thus, according to Wikipedia, Christianity has denominational families (or movements) and also has individual denominations (or communions). Within these denominational families and movements are (often further denominational families and) various individual denominations or communions. The difference between a denomination and a denominational family is sometimes unclear to outsiders. Some denominational families can be considered major branches.
- a form of classification:
  - a family as level of scientific classification for biological organisms. The Hominidae, as the taxonomic family of primates, are variously considered to include or exclude species other than humans (Hominini)
  - family as a grouping within the periodic table of elements
  - family as a grouping of similar musical instruments
  - a family of related products, typically as produced by a single company
  - a language family, namely a group of languages related through descent from a common ancestor, called the proto-language of that family.
- a family of nations, whether as
  - the group of nations recognized as having equal status under international law (as in oceans are regarded as the common property of the family of nations)
  - a group of nations united by common historical, political, or ideological ties (as in members of the British family of nations)
- groups and organizations may frame themselves as a "global family", as with the Global Family (an international network of individuals and groups who choose to experience themselves as members of one human family and who desire to actualize their life purpose through joining with others in compassionate action for the benefit of all)

"Extended family", is variously understood to include near and distant relatives, beyond the immediate circle of the "nuclear family" -- using a chemical metaphor. In the case of "broken families" -- and families with a single parent -- an "extended family" may be interpreted to include those associated with the various branches of the split and any remarriages. In some cultures "extended family" may be conflated with a kinship network.

Considerable controversy is typically associated with who is considered to be included or excluded from any family -- however its extension is variously understood. This was neatly dramatised in a film comedy (Meet the Fockers, 2004) stressing an understanding of family as implying a "circle of trust". This would be self-evident in the case of a Mafia crime family. With respect to the Christian community as perceived by others, many denominations would perceive others as not part of the "Christian family" -- as outside a "circle of trust". Recent history has tragically demonstrated the capacity to perceive some peoples as not even belonging to the "human family".

The ease with which a sense of family is felt to be extended is evident in the case of family pets -- readily framed as "part of the family", possibly to a greater degree than distant relatives. Friends may be framed as "you're family". On the other hand, unbelievers could well be excluded -- "estranged" -- from an extended family composed primarily of Christian believers, for example.

The table above invites reflection on how the sense of "family" can be selectively extended as a consequence of a sense of being "married to" any of a variety of "others". This is relatively obvious in the case of friends, work mates and team mates. Much more challenging is achieving any real sense of being part of a global family or of the human family -- for which many have argued. Some indigenous tribes extend a sense of family to the range of species in their natural environment -- with which they are indeed bonded in a deeply special manner, if not considered as "married to". Some environmentalists argue the need for such a degree of bonding with nature (Psychology of Sustainability: embodying cyclic environmental processes, 2002).

There are several difficulties with any commitment to extend the sense of family with which "family values" are so fundamentally associated, including:

- framing it as an extension of the dominant patriarchal and matriarchal roles which are typically central to family dynamics
- imposing particular values and behaviours on others who may not subscribe to them
- eliciting a pattern of family jealousies and sibling rivalry
- eliciting forms of "domestic violence" and other abuse
- a total lack of restraint regarding the legitimacy of the quest for self-reproduction
- a marked tendency to encroach on the space of others, whether psychological or otherwise

This pattern is evident in efforts by religions, ideologies and nations to "extend the family" with which they are associated -- righteously. It is a characteristic of proselytizing religions, cultures, colonialism and imperialism. It is evident in the quest for market monopoly by corporations.
The question is then how efforts to "extend the family" should be wisely and perspicaciously restrained and why. What does this imply for "family values"? In the case of "Christian family" values, as articulated by John Paul II, to what extent are these successfully applied to the dysfunctional "family of Christian denominations" -- if only those of Catholic inspiration?

<table>
<thead>
<tr>
<th>Marrying the land</th>
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<tbody>
<tr>
<td>There are various legends with regard to marrying the land. In Pagan tradition The First of May is Beltane, the celebration of the marriage of the earth itself. In sacred symbolism and mythos the King is identified with the sun, who in order for his reign to be fruitful must marry the land itself; which is seen as a Goddess in her own right. It is in May the earth thrives under the caresses of the sun, when the greenness of the earth reaches toward the sun as toward a lover. (Royal Wedding: Marrying the Land, Patheos, 27 April 2011; Philip Coppens, The centre and divisions of sacred Ireland). Marrying the land is an ancient Celtic tradition, a trinogamy normally reserved for kings as these references indicate. The Greenmountain Druid Order has adapted the tradition to a threesome; King, Queen and Land.</td>
</tr>
</tbody>
</table>

Enabling the other to be otherwise

As is evident within the above table, being "married to" any of a variety of "others" may well involve a process of anthropomorphising them -- as is evident with domesticated animals. More generally the other is assimilated and absorbed in some way -- even possessed, if not consumed. This process is played out in the cultural assimilation characteristic of colonialism and efforts at converting the other.

It can be recognized in the "personalization" possible with some computers and their applications. It is also evident in cases where a name is attributed to the other, as with a favourite automobile. It has been associated with a territorial appropriation process, notably practiced by the Navaho and the Vedic Aryans, as described by Joseph Campbell (The Inner Reaches of Outer Space: metaphor as myth and religion, 1986):

*Land nám* ("land claiming or taking") was [the Norse] technical term for this way of sanctifying a region, converting it thereby into an at once psychologically and metaphysical Holy Land...

As noted above, and so evident in conventional marriage, the other may not wish to absorbed as a mere reflection of the "family values" of a partner assuming dominance -- with a consequent loss of a degree of identity. This reluctance is a catalyst for marriage and family breakup. The unwelcome constraining forces may be recognized as a kind of "pincer movement" on the part of those holding patriarchal and matriarchal roles.

Curiously this process is evident in the effort of the Catholic Church to engage with either other Christian faiths (as with the Anglican Communion) or with other Abrahamic religions. The values of each are then to be recognized as non-negotiable and intimately related to preservation of a distinct sense of identity -- within the "Christian family" or the "Abrahamic family" respectively.

Rather than engaging appropriately, the process is one of dysfunctional appropriation -- of misappropriation of the other. The question is then how to "extend the family" to other "others", without misappropriating any "other". Specifically how can being "married to" enable the other to be otherwise? The issue is notably confronted in the case of membership in many international, intercultural, interfaith and interdisciplinary organizations (as "families").

Especially intriguing, when framed in this way, is the fundamental need to encounter an "other", outside any pre-existing framework of "family values", in order to initiate a family -- to innovate -- or to renew the existing framework in some way. There is an obvious sense in which the "otherness" of those within the original framework does not provide a viable partner -- whether genetically or, presumably, memetically. There is a fundamental need for a different pattern in order to avoid genetic incest (and its consequences), and presumably its memetic analogue. In the quest for a suitable "other", the question is how attractively different does different need to be before some form of "excommunication" is perceived to be appropriate as a consequence of "having gone too far"?

This form of argument is unfruitful to the extent that it merely reflects the existing dynamics of "us and them" which continues to play out around the surface of the globe. It does not indicate how the other could be otherwise, as well as sharing an extended form of "family values" to a degree. This is the problem of embodying "both/and" rather than "either/or". The simplest illustration of such a form is the paradoxical *Mobius strip* as below. This sustains the illusion of the distinctive uniqueness of the values of one "side" in contrast with the "underside" -- except that traversing either side leads without any discontinuity onto the "other side", then appreciated as paradoxically distinct from the first.

**Conclusion**

The argument highlights the extent of engagement with a wide variety of others -- an engagement whose characteristics are readily described in terms of "married to". Given the varieties of forms of marriage as conventionally married, and their evolution over time, it is appropriate to ask which characteristics distinguish conventional marriage uniquely -- in contrast to the sense of a special bond with an "other" of whatever form. In that sense the controversy regarding same-sex marriage is merely a particular instance of a much wider spectrum of bonding possibilities.
Part of the challenge of distinguishing any sense of a special bond is intimately associated with the person having that experience -- imbibing the relationship and the other with unusual qualities which third parties may be unable to discern. It is also appropriate to recall that conventional marriage only recently required approval by third parties (especially those with religious authority) -- prior to which the bonding depended to a large extent on those engaging in the bond.

The suggestion of the use of a chemical metaphor to provide a language to distinguish the nature of bonds -- in the light of developing understanding of the physics underlying such bonding -- offers a suggestive means of appreciating the variety of bonding. This language draws attention to the possible distinction between an "ionic marriage" and a "covalent marriage".

The former is consistent to a higher degree with conventional understandings of heterosexual marriage. The latter is seemingly more consistent with forms of "married to" which are of a less polarized nature. Although the human body embodies both forms of bonding, suggesting that their dynamics may be echoed in psychosocial bonding, in considering the functions of both it may be the case that the "covalent marriage" forms are more consistent with community formation -- with sustaining family life. It is after all fundamental to the organic molecules which are the building blocks of living tissue.

Discussion of psychosocial bonds, when perceived as threatening religious precepts, is clearly highly controversial. The traditional language of theology may be a less than appropriate tool for this purpose in the 21st Century. Given the remarkable range of insights into relationships explored by chemistry and physics, informed by developments in mathematics, there is a case for complementing theological language with that of the sciences in question. There is a discipline of mathematical theology. This might be adapted to a consideration of human bonding with any "other", as previously discussed (Mathematical Theology: future science of confidence in belief', 2011).

Given the divisive nature of the controversies in which the Catholic Church is embroiled with respect to human bonding, a strong argument could be made in support of the election of a Pontiff able to bridge between the language of theology and the language of science, as suggested here.

**Cardinal numbers in Papal selection as a mathematical recreation**

It follows from this argument that the election of the forthcoming pope from a set of cardinals (in the religious sense) offers the delightful implication that the deep familiarity of the new pope with other cardinals should ideally extend to other cardinals (in their mathematical sense).

As carefully distinguished by Wikipedia:

In mathematics, cardinal numbers, or cardinals for short, are a generalization of the natural numbers used to measure the cardinality (size) of sets. The cardinality of a finite set is a natural number - the number of elements in the set. The transfinite cardinal numbers describe the sizes of infinite sets.

However, as indicated separately (Warp and Weft of Future Governance, 2010), recent work by Harvey Friedman (Boolean Relation Theory and Incompleteness, 2010), as described by Richard Elwes (It doesn't add up, New Scientist, 14 August 2010) suggests that:

With Friedman's work, it seems Gödel's delayed triumph has arrived: the final proof that if there is a universal grammar of numbers in which all facets of their behaviour can be expressed, it lies beyond our ken [On Formally Undecidable Propositions of Principia Mathematica and Related Systems, 1930] ... The only way that Friedman's undecidable statements can be tamed, and the integrity of arithmetic restored, is to expand Peano's rule book to include "large cardinals" -- monstrous infinite quantities whose existence can only ever be assumed rather than logically deduced.... We can deny the existence of infinity, a quantity that pervades modern mathematics, or we must resign ourselves to the idea that there are certain things about numbers we are destined never to know.

Having just recommended the possibility of marriage by cardinals (as indicated above), Cardinal Keith O'Brien might be held to be an ideal candidate with a profound understanding of relationships -- seemingly in sympathy with the times. Appropriately, this could well derive in part from his academic background in chemistry and mathematics -- clearly a person, as pope, with a degree of insight into the "extraordinary" function of cardinals of any form, in the larger pattern of relationships. O'Brien is one of the very few participants in the Papal Conclave with any formal training in mathematics -- and is seemingly alone in having any formal training in chemistry (Social Science and Natural Science Disciplines of Catholic Cardinals: analysis of the educational background of those engaged in the selection of the new Pope, 2013).

However, O'Brien is himself at the centre of controversy as a consequence of his strongly expressed views on homosexuality and abortion. There are also accusations against him personally which have resulted in his resignation (UK's top cardinal accused of 'inappropriate acts' by priests, The Observer, 23 February 2013; Pope considering response to alleged 'inappropriate acts' by UK cardinal, The Observer, 24 February 2013; Cardinal Keith O'Brien resigns as Archbishop, BBC News, 25 February 2013). The cardinals will gather in a period in which new insights into relationships are desperately needed (Difficult path to papal conclave as Rome prepares for new era, The Observer, 23 February 2013). It is tragically ironic that the one cardinal with relevant skills should himself be embroiled in these challenges.

Members of the College of Cardinals will shortly gather in the Papal Conclave to derive a two-thirds supermajority from their number in order to recognize the "transfinite function" of one of their number. Despite the symbolism of the Vatican environment, it is however doubtful whether the electors are fully aware of the logico-mathematical implications of the process in which they are engaged. It remains curious that Catholic theology, with its explicit recognition of the transcendental, namely notions that go beyond conventional categories (truth, goodness, unity, and the like), is unable to benefit from mathematical insights into transcendental functions. Fortuitously, mathematics has also introduced surreal numbers -- including the real numbers as well as
infinite and infinitesimal numbers -- with all of which cardinals might be fruitfully considered to be associated.

The current situation is all the more questionable in that the Papal Conclave embodies the challenge between truth and falsehood of central concern to Boolean relation theory -- now shown to have a problematic foundation in incompleteness, with a specific requirement for large cardinals, essentially incomprehensible. Given that so many of the cardinals are trained in canon law, they are faced with the paradox of entities whose "existence" can only ever be assumed rather than logically deduced -- as with many challenged by problematic relationships (Living with Incomprehension and Uncertainty: re-cognizing the varieties of non-comprehension and misunderstanding, 2012).

\[
\aleph_0 \]

\aleph_0, the smallest infinite cardinal

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**Insights of Michael Leunig into Marrying an Other**

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